

Educational Courses

Course Numbering System and Prerequisites

Courses numbered from 001-099 are those unique to the community college, are considered developmental in nature, are not anticipated to be transferable, and do not satisfy degree requirements.

Courses numbered 100-199 are considered to be on the freshman level. Courses numbered 200-299 are considered to be on the sophomore level.

NOTE: SUN System: SUN# (Shared Unique Number) is a prefix and number assigned to certain courses that represents course equivalency at all Arizona community colleges and the three public universities, no matter what prefix or number is used at the individual institutions. Learn more at <http://www.azsunsystem.com/>

Sample course listing:

AIS	101	Introduction to American Indian Studies	/3 cr. hrs.	/3 periods (3 lec.)
course prefix	course number	course title	semester hours of credit	hours of lecture and/or lab per week

A student registering for a course must meet the prerequisites or otherwise satisfy the instructor of his or her preparation to take the course. After notification, an instructor may withdraw a student who does not have the proper prerequisites for the class as stated in the catalog. Prerequisites may be waived by the instructor.

Consult the semester Schedule of Classes for specific offerings each semester.

Topics Courses

Courses designated with the numbers **098, 198, 298** are courses created by a Pima Community College faculty member to offer a specific subject not found in the regular courses of the college catalog.

Students should be aware that these courses are NOT designed for transfer to a university, nor does Pima Community College articulate them with any university to seek transfer status.

Legend for Courses

HC*/HN.....	Honors Course
IN/IH	Intergrated lecture/lab
LB	Lab
LC/CA/CB.....	Clinical Lab
LS	Skills Lab
WK	Coop Work

*HC in Spanish Courses stands for Health Care

Listing of Course Prefixes

Accounting	ACC
Administration of Justice	AJS
Agriculture	AGR
American Indian Studies	AIS
American Sign Language	ASL
Animal Science	ANS
Anthropology	ANT
Arabic	ARB
Archaeology	ARC
Art	ART
Art for Personal Development	APD
Astronomy	AST
Automotive Technology	AUT
Aviation Technology	AVM
Avionics Technician Training	ATT
Behavioral Health Services	BHS
Biology	BIO
Building and Construction Technology	BCT
Business	BUS
Chemistry	CHM
Child Development Associate	CDA
Chinese	CHI
Clinical Research Coordinator	CRC
Communication	CMN
Computer-Aided Drafting/Design	CAD
Computer Information Systems	CIS
Computer Software Applications	CSA
Cooperative Education	CED
Crime Scene Management	CSM
Culinary Arts	CUL
Dance	DNC
Dental Assisting	DAE
Dental Hygiene	DHE
Dental Laboratory Technology	DLT
Digital Arts	DAR
Direct Care Professional	DCP
Early Childhood Education	ECE
Economics	ECN
Education	EDU
Education – General/Post Degree	EDC
Education – Special Education	EDS
Education – Special/Post Degree	ESE
Educational Technology Training	ETT
Electrical Utilities Technology	EUT
Emergency Medical Technology	EMT
Engineering	ENG
English as a Second Language	ESL
Environmental Technology	ENV
Experiential Education	EED

Fashion Design and Clothing	FDC
Finance	FIN
Fire Science	FSC
Fitness and Sport Sciences	FSS
Fitness and Wellness	FAW
Food Science and Nutrition	FSN
French	FRE
Game Design	GAM
Gender and Women's Studies	GWS
General Technical Writing	GTW
General Technologies Mathematics	GTM
Geography	GEO
Geology	GLG
Geospatial Information Studies	GIS
German	GER
Global Studies	GLS
Health Care	HCA
Health Education	HED
Health Information Technology	HIT
History	HIS
Histotechnology	HTP
Honors Program	HON
Hotel and Restaurant Management	HRM
Human Resources Management	HRS
Humanities	HUM
Industrial and Commercial Technologies	ICT
Industrial Maintenance	IMO
Integrated College Skills	ICS
International Business Studies	IBS
Interpreter Training	ITP
Italian	ITA
Japanese	JPN
Journalism	JRN
Korean	KOR
Landscape Technician	LTP
Latin	LAT
Law Enforcement Academy	LEA
Library and Information Sciences	LIS
Literature	LIT
Logistics and Supply Chain Management	LGM
Machine Tool Technology	MAC
Management	MGT
Marketing	MKT
Mathematics	MAT
Medical Assistant	MDA
Medical Laboratory Technician	MLT
Mexican-American Studies	MAS
Music	MUS
Music Studio Instruction	MUP
Nursing	NRS

Nursing Assistant	NRA
Office and Administrative Professions	OAP
Optical Science	OPS
Paralegal	PAR
Pharmacy Technology	PHT
Philosophy	PHI
Phlebotomy	PHB
Physics	PHY
Political Science	POS
Portuguese	POR
Professional Flight Technology	PFT
Psychology	PSY
Radiologic Technology	RAD
Reading	REA
Religion	REL
Reserve Officers Training Corps – ROTC Air Force	MLA
Reserve Officers Training Corps – ROTC Army	MLS
Reserve Officers Training Corps – ROTC Navy	NSP
Respiratory Therapy	RTH
Russian	RUS
Science Summer Career Academy	SCA
Science for Teachers	SCT
Social Services	SSE
Sociology	SOC
Solar Technologies	SLR
Spanish	SPA
Student Success	STU
Technology	TEC
Theater	THE
Therapeutic Massage	TMA
Translation and Interpretation Studies	TRS
Travel Industry Operations	TVL
Truck Driver Training	TDT
Veterinary Science	VSC
Veterinary Technology	VET
Welding	WLD
Wellness Education	WED
Writing	WRT

Accounting

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ACC 100 Practical Accounting Procedures

3 cr. hrs. 3 periods (3 lec.)

Introduction to accounting systems for small businesses. Includes different types of accounts, the general journal and general ledger, adjusting entries, closing entries and the post-closing trial balance; bank accounts, cash funds, and internal control; employee earnings and deductions, accounting for cash and payroll, sales and purchases, cash receipts and cash payments, work sheet and adjusting entries; and financial statements, closing entries, and reversing entries.

Offered: Fall, Spring, Summer.

ACC 150 Payroll Accounting

3 cr. hrs. 3 periods (3 lec.)

Current practices in payroll accounting and tax reporting. Includes payroll and personnel records, computing and paying wages and salaries, analyzing and journalizing payroll transactions, and computerized payroll systems and payroll projects.

Prerequisite(s): ACC 100 or 211.

Offered: Fall, Spring.

ACC 190 Internship in Accounting

3 cr. hrs. 9 periods (9 lab)

Supervised internship in an accounting workplace. Includes experiences supervised by a professional in the field.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring.

ACC 200 Computerized Accounting I

4 cr. hrs. 4 periods (4 lec.)

Fundamental accounting applications using commercial applications software. Includes commercial accounting program modules, accounting projects, electronic spreadsheet as the accounting tool, and accounting information on the Internet.

Prerequisite(s): ACC 100 or 211.

Offered: Fall, Spring.

ACC 204 Individual Tax Accounting

4 cr. hrs. 4 periods (4 lec.)

Principles of accounting for taxes for individuals. Includes federal tax laws for individuals, gross income, business income and expenses, itemized deductions, tax credits and computations, property transactions, and capital gains and losses. Also includes partnership taxation, corporate income tax, tax administration and planning, and income tax preparation.

Prerequisite(s): ACC 100 or 211.

Offered: Fall, Spring.

ACC 210 Computerized Accounting II

3 cr. hrs. 3 periods (3 lec.)

Continuation of ACC 200 using advanced accounting applications and commercial applications software. Includes working with an accounting practice set, advanced accounting spreadsheets, and accounting software research on the Internet.

Prerequisite(s): ACC 200.

Offered: May not be offered this year, check class schedule.

ACC 211 Financial Accounting

3 cr. hrs. 3 periods (3 lec.)

Introduction to accounting as a service activity, analytical discipline, and information system. Includes financial statements and the accounting profession, recording accounting and transactional data, merchandising operations, internal control and ethical issues, asset reporting, reporting and analyzing liabilities and stockholder's equity, statements of cash flow, and performance measurement.

Prerequisite(s): MAT 092 or higher.

Offered: Fall, Spring, Summer.

ACC 212 Managerial Accounting

3 cr. hrs. 3 periods (3 lec.)

Accounting information for managers. Includes managerial accounting environment, systems design, cost behavior analysis and use, profit planning, standard costs, and decision making.

Prerequisite(s): ACC 211 with a C or better and MAT 122 or higher.

Offered: Fall, Spring, Summer.

ACC 215 QuickBooks Computer Accounting

3 cr. hrs. 3 periods (3 lec.)

Use of current QuickBooks software to set up and maintain accounting records for a small business. Includes modular accounting involving accounts receivable, accounts payable, inventory, and payroll features.

Prerequisite(s): ACC 100 or 211.

Offered: Fall, Spring.

ACC 221 Intermediate Accounting I

3 cr. hrs. 3 periods (3 lec.)

Comprehensive coverage of financial accounting topics. Includes environment of accounting, accounting information system, present value applications to accounting problems, cash control, receivables and investments, inventory valuation methods, tangible fixed assets, current and long-term liabilities, and intangible assets.

Prerequisite(s): ACC 211.

Offered: Fall, Spring.

ACC 222 Intermediate Accounting II

3 cr. hrs. 3 periods (3 lec.)

Continuation of ACC 221. Includes stockholder's equity, long and short term liabilities, income taxes, pension plans, leases, and accounting changes, statement of cash flow, and full disclosure in financial reporting. Also includes continual integration of theory and practice in the accounting treatment of investments.

Prerequisite(s): ACC 221.

Offered: Fall, Spring.

ACC 233 Cost Accounting

3 cr. hrs. 3 periods (3 lec.)

Analysis of cost data for management planning, coordination and control. Includes the role of accounting information in management decision making, the cost function, cost-volume-profit analysis, relevant information for decision making, job costing, process costing, and costing methods. Also includes measuring and assigning support department costs, static and flexible budgets, standard costs and variance analysis, and strategic investment decisions.

Prerequisite(s): ACC 212.

Offered: Fall.

ACC 250 Certified Bookkeeper Review

3 cr. hrs. 3 periods (3 lec.)

Preparation for the American Institute of Professional Bookkeepers (AIPB) Certified Bookkeeper examination and review of accounting theory and practical bookkeeping skills. Includes the certified bookkeeper program; accruals, deferrals, and the adjusted trial balance; correction of accounting errors and the bank reconciliation; payroll; depreciation; inventory; and internal controls and fraud prevention.

Prerequisite(s): ACC 100 or 211.

Offered: Fall, Spring.

ACC 260 Principles of Fraud Examination

3 cr. hrs. 3 periods (3 lec.)

Overview of the field of fraud examination and examination methodology and detailed examination of the most prevalent fraud schemes. Includes categories of occupational fraud and abuse, asset misappropriation, corruption schemes, accounting principles and fraud examination strategies, fraudulent financial statement schemes, and interviewing witnesses.

Prerequisite(s): ACC 211.

Offered: Spring.

ACC 267 Computer Fraud Detection

1 cr. hrs. 1 periods (1 lec.)

Overview of the fundamentals of computer fraud examination. Includes the examination methodology used within the field, Internet and e-commerce fraud, evidence gathering, prevention, and security.

Prerequisite(s): ACC 260.

Offered: Spring.

ACC 273 Governmental Accounting

3 cr. hrs. 3 periods (3 lec.)

Accounting practices and procedures used in governmental units. Includes accounting and financial reporting for governmental and not-for-profit entities, operating state accounts, operating activities, general capital assets and projects, general longterm liabilities and debt service, business-type activities of state and local governments, fiduciary activities, financial reporting of state and local governments, and accounting for the non-profit sector.

Prerequisite(s): ACC 211.

Offered: Spring.

ACC 296 Independent Study in Accounting

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Independent study projects or special interest areas in accounting under the supervision of a faculty member.

Prerequisite(s): ACC 211, 212.

Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Administration of Justice

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

AJS 101 Introduction to Administration of Justice Systems

3 cr. hrs. 3 periods (3 lec.)

History and philosophy of administration of justice in America. Includes identifying the various subsystems, role expectations, and their interrelationships, theories of crime, punishment and rehabilitation, ethics, education and training for professionalism in the system, and career opportunities related to local criminal justice agencies.

Offered: Fall, Spring.

AJS 109 Criminal Law

3 cr. hrs. 3 periods (3 lec.)

Historical development and philosophy of law and constitutional provisions. Includes definitions, classifications of crime and their application to the system of administration of justice, legal research, study of case law, methodology, and concepts of law as a social force.

Offered: Fall, Spring.

AJS 113 Criminal Justice Crime Control Policies and Practices

3 cr. hrs. 3 periods (3 lec.)

Focus on changing the distribution of crime opportunities rather than offender motivation. Topics include application of situational crime prevention strategies, problem-oriented crime control approaches, and crime prevention through defensible space.

Offered: May not be offered this year, check class schedule.

AJS 115 Criminal Procedures

3 cr. hrs. 3 periods (3 lec.)

Overview of the criminal justice system used in the United States to adjudicate criminal cases. Includes implications for defendant's rights, the arrest process, the prosecuting attorney, the defense attorney, courts, grand jury, trial jury, judicial process, and its aftermath.

Offered: Fall, Spring.

AJS 123 Corrections as a Process

3 cr. hrs. 3 periods (3 lec.)

Overview of corrections as a process and its appropriate place in the criminal justice system. Includes the study of inmate characteristics, prison culture, correctional history and philosophies. Also includes community corrections, supervision and career opportunities in corrections.

Offered: Fall, Spring.

AJS 124 Ethics and the Administration of Justice

3 cr. hrs. 3 periods (3 lec.)

Exploration of ethical issues and the justice system. Includes elements of moral and ethical behavior, principles of justice, and theories of moral development. Also includes ethics of the police, courts, corrections, and modern issues in the administration of justice.

Offered: Fall, Spring.

AJS 170 Forensic Pathology and Death Investigation

3 cr. hrs. 3 periods (3 lec.)

Basic principles of forensic pathology, demonstrating the use of autopsy findings and death scene investigation to determine the cause and manner of death for deaths that fall under the jurisdiction of the medical examiner in the state of Arizona. Includes postmortem changes; sudden and unexpected, suspicious and violent deaths; and postmortem identification.

Offered: Spring.

AJS 201 Rules of Evidence

3 cr. hrs. 3 periods (3 lec.)

The origin, development, philosophy and constitutional basis of evidence. Includes constitutional and procedural considerations affecting arrest and search and seizure. Also includes degrees of evidence and rules governing admissibility, judicial decisions interpreting individual rights, and case studies.

Offered: Fall, Spring.

AJS 204 Criminal Investigations

3 cr. hrs. 3 periods (3 lec.)

Fundamentals of modern criminal investigation. Includes procedures and skills in search and investigation, conduct at the crime scene, collection and preservation of evidence, developing sources of information, preparation of cases for court prosecution, and report-writing requirements for administration and court use.

Offered: Fall, Spring.

AJS 210 Police Community and Human Relations

3 cr. hrs. 3 periods (3 lec.)

Survey of the police officer's role in attaining and maintaining public support. Includes recognition and understanding of community problems, community action programs, methods of coping with crisis situations, ethnic and minority cultures, various environments, crime prevention, and police operations in relation to these cultures and environments.

Offered: Spring.

AJS 212 Juvenile Justice Procedures

3 cr. hrs. 3 periods (3 lec.)

The course will examine the causes, responses and prevailing legal and social practices concerning delinquency in America. Includes issues pertaining to the family, schools, gang membership, drug use and youth victimization. Also includes the juvenile justice system including the history and philosophy of the juvenile court, court decision-making, sentencing practices, diversion, institutionalization, community supervision and how it interfaces with the administration of justice.

Offered: Fall, Spring.

AJS 225 Criminology

3 cr. hrs. 3 periods (3 lec.)

Survey of the nature, extent and control of crime and delinquency. Includes comparison of theoretical and practical approaches to causation, prevention, punishment and treatment, and current problems.

Offered: Fall, Spring.

AJS 246 Race and Ethnicity Issues in the Administration of Justice

3 cr. hrs. 3 periods (3 lec.)

The course examines the impact of cultural diversity on law enforcement to include a discussion of cultural awareness, bias, prejudice, training, recruitment and cross cultural communication. Police challenges in engaging with specific racial/ethnic groups are examined, to include Asian/Pacific Americans, African-Americans, Latino/Hispanic Americans, Arab Americans, Native Americans and others. Homeland security concerns, racial profiling and hate crimes are also addressed.

Offered: Fall.

AJS 260 Criminal Justice Management

3 cr. hrs. 3 periods (3 lec.)

A practical examination of the challenges of criminal justice management. Includes unique requirements for these agencies and departments, as differentiated from non-governmental organizations; management theories as applied to criminal justice agencies; effective communication, leadership styles, budgets, decision making, and model management practices. Also includes special problems such as managing difficult or unethical employees; use of force issues; sexual and gender harassment; and work force issues including recruitment, retention, diversity, and training.

Information: Consent of instructor required before enrolling in this course.

Offered: Spring.

AJS 280 Terrorism in the 21st Century

3 cr. hrs. 3 periods (3 lec.)

Exploration into the definition, history, cause, and goals of terrorism. Includes identification of terrorists and their motivations and examination of tactics used by terrorists in pursuit of their goals. Also includes methods used to combat terrorism including intelligence collection, security measures, diplomacy, legal and political responses.

Offered: Fall, Spring.

Agriculture

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

AGR 101 Introduction to Agriculture Science

3 cr. hrs. 3 periods (3 lec.)

Overview of topics, careers and practices in agriculture science. Includes food safety, biotechnology, and environmental and natural resources sciences. Also includes ethics, nutrition and disease as they relate to the agricultural sciences.

Offered: May not be offered this year, check class schedule.

AGR 102 Introduction to Plants, Soils and Crops

3 cr. hrs. 5 periods (2 lec., 3 lab)

Overview of plant systems. Includes taxonomy, anatomy and physiology, and reproduction. Also includes the history of agriculture, and principles of crop and pest management.

Offered: May not be offered this year, check class schedule.

AGR 185 Careers in Crop Production

1 cr. hrs. 1 periods (1 lec.)

Exploration of career opportunities in crop production. Includes exposure to a broad array of relevant careers working with field crops, permanent tree crop production, turf science, and a variety of horticultural crops grown throughout the western United States and other regions of the world. Also includes career management; and preparation of a resume, cover letter, and internship proposal.

Offered: Summer.

AGR 200IN Introduction to Soil Science

4 cr. hrs. 6 periods (3 lec., 3 lab)

Basic principles of soil as a component of terrestrial ecosystems. Includes the composition of soil and its operation within the overall biosphere. Also includes soil as a medium for plant growth in croplands, rangelands, and forest lands. Also includes the role of soils in environmental quality, health, water resources, erosion, recreation, and wildlife.

Prerequisite(s): CHM151IN

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall.

American Indian Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

AIS 101 Introduction to American Indian Studies I

3 cr. hrs. 3 periods (3 lec.)

Examination of the diversity of American Indian tribes. Includes origins and traditions, Native American cultures and geographic subsistence, women's roles and responsibilities, spirituality and world views, and values and value systems. Also includes early education, socialization, and importance of extended family, history of tribal sovereignty and governance, health and curing, and encounters and reactions with early Europeans.

Offered: Fall, Spring.

AIS 122 Tohono O'odham History and Culture

3 cr. hrs. 3 periods (3 lec.)

Survey of Tohono O'odham culture, historical development, and modern issues. Includes development of culture and world view, sources of Tohono O'odham history, role in economic and social development of Northwestern Mexico and Southwestern United States, and contemporary Tohono O'odham issues.

Information: Same as HIS 122.

Offered: Spring.

AIS 124 History and Culture of the Yaqui People

3 cr. hrs. 3 periods (3 lec.)

Survey of the cultural heritage of the Yaqui people and the history of their struggles to protect Yaqui land and customs. Includes Yaqui origins, pre-Columbian Yaqui society, oral traditions and world view, early Spanish contacts, Catholic influences, economic development; rebellions, resistance and leadership; and policies regarding Native Americans. Also includes the deportation and enslavement of the Yaqui from the 17th to the 20th centuries by the Spanish and American governments and the deportation of the Yaqui by the United States in the 1880's. Also examines acts of genocide and subjugation against the Yaqui in revolutionary Mexico, 20th century relocation and adaptation strategies of the Yaqui in the United States and the Yaqui culture of the 21st century.

Information: Same as HIS 124.

Offered: May not be offered this year, check class schedule.

AIS 148 History of Indians of North America

3 cr. hrs. 3 periods (3 lec.)

History of the cultural development of Native Americans of North America and the interrelations of cultures. Includes Native American origins, early economic and social development, Europeans, eras in Native American history, modern leadership, and research studies.

Information: Same as ANT/HIS 148.

Offered: Fall, Spring.

AIS 205 Introduction to Southwestern Prehistory

3 cr. hrs. 3 periods (3 lec.)

Study of the prehistory of the American Southwest from its earliest inhabitants to European contact. Includes anthropology and its subfields, basics of archaeology, the Southwest, Paleoindians, archaic peoples; Hohokam, Mogollon, Anasazi, and other Southwestern cultures; and late prehistoric and historic cultural change.

Information: Same as ANT/ARC 205.

Offered: Fall, Spring.

AIS 206 Contemporary Native Americans of the Southwest

3 cr. hrs. 3 periods (3 lec.)

Survey of Native American cultures with emphasis on peoples of the Southwestern United States and northern Mexico. Includes overview of Native groups in the Southwestern United States and northern Mexico, environmental zones and modes of production, cultural and linguistic diversity, cultural configurations, Pan- Native American issues, and frameworks for understanding Native American culture and experience.

Information: Same as ANT 206.

Offered: May not be offered this year, check class schedule.

American Sign Language

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ASL 050 Conversational Sign Language I

3 cr. hrs. 3 periods (3 lec.)

Introduction to conversational sign language skills. Includes basic sign vocabulary, d/Deaf culture, and an overview of communications systems.

Offered: May not be offered this year, check class schedule.

ASL 055 Conversational Sign Language II

3 cr. hrs. 3 periods (3 lec.)

Continuation of ASL 050. Includes intermediate sign vocabulary, d/Deaf culture, and a focus on developing intermediate skills in sign language.

Information: Completion of ASL 050 or consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

ASL 101 American Sign Language I

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to American Sign Language (ASL). Includes: parameters; syntax; sentence types; facial expressions and body language; pronominalization; nouns and verbs; modals; sign space; time line and time modulations; classifiers; pluralizations; and deaf history and culture. Also includes: fingerspelling numbers; lexicalized fingerspelling; conceptual accuracy; sign modulation; conversational regulators; basic compounds and contractions; and existence of regional dialects/sign and language variations. Because language and culture are inextricably linked, this course will also demonstrate how ASL conveys the values, beliefs, customs, and history of American Deaf culture.

Information: Students will be required to perform an additional 10 lab hours outside of the regular classroom schedule. This lab experience is designed to provide a "signing only" environment for students to practice classroom skills with Deaf tutors; expose students to communication in a Deaf environment; and provide students with real life exposure to the Deaf community.

Information: This class is conducted primarily without voice.

Offered: May not be offered this year, check class schedule.

ASL 102 American Sign Language II

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of ASL 101. Includes: parameters; syntax; sentence types; facial expression and body language; sign space; pronominalization; nouns/verbs; time line; classifiers; pluralizations; deaf culture; and fingerspelling numbers. Also includes conceptual accuracy, modulations, sight line, lexicalized fingerspelling, contractions, direct address, conjunctions, model stories, history of sign, language variations, sign continuum, and how people hear. Because language and culture are inextricably linked, this course will also demonstrate how ASL conveys the values, beliefs, customs, and history of American Deaf culture.

Prerequisite(s): ASL 101 with a grade of C or better.

Information: Students will be required to perform an additional 10 lab hours outside of the regular classroom schedule. This lab experience is designed to provide a "signing only" environment for students to practice classroom skills with Deaf tutors; expose students to communication in a Deaf environment; and provide students with real life exposure to the Deaf community.

Information: This class is conducted primarily without voice.

Offered: Fall, Spring, Summer.

ASL 105 Beginning Fingerspelling and Numbers

2 cr. hrs. 2 periods (2 lec.)

Enhancement of receptive and expressive sign language skills, methodology, theory, and application. Includes manual alphabet, numbers, basic monetary designations, basic mathematical functions, regional states, cities, and calendar designations. Also includes common acronyms, basic lexicalized fingerspelling, and history of fingerspelling.

Prerequisite(s): ASL 102.

Information: Additional lab hours are required outside of regularly scheduled class.

Offered: May not be offered this year, check class schedule.

ASL 200 Introduction to the Deaf Community

3 cr. hrs. 3 periods (3 lec.)

Macroscopic view of culture and microscopic view of the Deaf life experience through culture and language. Includes cross-cultural interactions between deaf and hearing people. Also includes the history of the Deaf community, Deaf education, Deaf technologies, Deaf employment, historical trends and Deaf services.

Prerequisite(s): ASL 201 with a grade of B or better.

Offered: Fall.

ASL 201 American Sign Language III

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of ASL 102. Includes sentence order, modulation/inflection, prosody, sign space usage, conceptual accuracy, sign vocabulary, and deaf culture and history. Because language and culture are inextricably linked, this course will also demonstrate how ASL conveys the values, beliefs, customs, and history of American Deaf culture.

Prerequisite(s): ASL 102 with a grade of C or better.

Information: Students will be required to perform an additional ten lab hours outside of regular classroom schedule. The lab experience is designed to provide a "signing only" environment for students to practice classroom skills with Deaf tutors; expose students to communication in a Deaf environment; provide students with real life exposure to the Deaf community.

Information: This class is conducted primarily without voice.

Offered: Fall, Spring.

ASL 202 American Sign Language IV

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of ASL 201. Includes: use of sign space; conceptual accuracy; directionality; mimetic description; dialects; numerical applications; American Sign Language (ASL) expansions; English words with no direct ASL translation; English passive voice to ASL active voice; rendering ASL and English passages; current cultural issues; and the field of interpreting. Because language and culture are inextricably linked, this course will also demonstrate how ASL conveys the values, beliefs, customs, and history of American Deaf culture.

Prerequisite(s): ASL 201 with a grade of C or better.

Information: Students will be required to perform an additional ten lab hours outside of regular classroom schedule. The lab experience is designed to provide a "signing only" environment for students to practice classroom skills with Deaf tutors; expose students to communication in a Deaf environment; provide students with real life exposure to the Deaf community.

Information: This class is conducted primarily without voice.

Offered: Spring.

ASL 203 Comparative Analysis of ASL and English

3 cr. hrs. 3 periods (3 lec.)

Enhanced study of the fundamental principles and cognitive processing of American Sign Language. Includes a further study of the Deaf community and Deaf culture.

Prerequisite(s): ASL 201 with a grade of B or better.

Information: This course is recommended for students who have finished ASL 202 or ASL departmental approval and desire further study and review. Students may be expected to attend outside events at their own expense.

Offered: Spring.

ASL 204 Discourse Features in ASL

3 cr. hrs. 3 periods (3 lec.)

This course is an overview of ASL discourse. Includes discourse structure, language, variation, genre, register, prosody, cohesion, take-turning, back-channeling and gendered communication. Also includes transcription conventions for noting language samples.

Prerequisite(s): ASL 202 with a grade of B or better

Offered: Fall, Spring.

ASL 205 Advanced Fingerspelling and Numbers

2 cr. hrs. 2 periods (2 lec.)

Advanced receptive and expressive fingerspelling and number skills. Includes lexicalized fingerspelling, related theories/methodologies, numbers, advanced monetary designations, basic and advanced mathematical functions, acronyms for deaf-related organizations and services, common abbreviations, commonly fingerspelled words, major cities, states, and proper nouns.

Prerequisite(s): ASL 105 and ASL 201.

Information: Additional lab hours are required outside of regularly scheduled class.

Offered: May not be offered this year, check class schedule.

ASL 215 ASL Literature: Narratives

3 cr. hrs. 3 periods (3 lec.)

This course is a continuation of the major grammatical features of American Sign Language (ASL) to develop communicative and interactive competencies in the culture and language of the Deaf. Includes a focus on ASL literature by introducing students to ASL storytelling techniques, film analysis, story analysis, and its techniques. Also includes ASL narratives, classifiers and perspectives.

Prerequisite(s): ASL 200 and 202 with a grade of B or better.

Information: This course is taught in ASL and utilizes receptive skills through ASL literature and media. Students are expected to experiment with ASL storytelling and the use of classifier techniques.

Information: Additional hours may be required outside of the regularly scheduled class.

Offered: Spring.

ASL 296 Independent Study in Sign Language

1-3 cr. hrs. 3-9 periods (3-9 lab)

Exploration of special interest areas in sign language and deaf cultures. Includes extensive practice of sign language skills and in depth study of deaf cultures involving literature, grammar, and special projects under the supervision of the instructor.

Prerequisite(s): ASL 102.

Information: Student must have consent of instructor.

Offered: Fall, Spring, Summer.

Animal Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ANS 102 Introduction to Animal Industry

3 cr. hrs. 5 periods (2 lec., 3 lab)

Overview of livestock and poultry industries and practices. Includes production, marketing and distribution. Also includes application of scientific principles to health, behavior, nutrition, reproduction and performance.

Offered: May not be offered this year, check class schedule.

ANS 196 Independent Study in Animal Science

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Introductory study of a particular Animal Science subject or subjects to hone skills while working in an independent format.

Information: Three credit hours of Animal Science and consent of instructor are required before enrolling in this course.

Information: Content of study and its manner of execution must be developed through mutual agreement between the student and the instructor prior to enrollment in the course.

Offered: May not be offered this year, check class schedule.

Anthropology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ANT 101 Human Origins and Prehistory

3 cr. hrs. 3 periods (3 lec.)

Survey of physical anthropology and archaeology. Includes anthropology and its subfields, the development of evolutionary theory, modern human variation, primates, paleoanthropology and archaeology, and the emergence of the human species from its origins.

Information: Same as ARC 101.

Offered: Fall, Spring.

ANT 102 Introduction to Cultural Anthropology and Linguistics

3 cr. hrs. 3 periods (3 lec.)

Survey of human societal structure. Includes sub-fields of anthropology, sub-disciplines and topics, historical origins, influences, key figures, theory and methods. Also includes an introduction to the comparative study of cultures.

Offered: Fall, Spring.

ANT 105 Humanity and the Environment

3 cr. hrs. 3 periods (3 lec.)

Technical, sociocultural, and political information on environmental science and technology for non-environmental majors. Includes ecosystems, population impacts, hydrological systems, air pollution, and environmental toxins. Also includes current topics such as the greenhouse effect, acid rain, drinking water contamination, toxic waste spills, governmental regulation and enforcement, and future environmental trends.

Corequisite(s): ANT 105LB

Information: Same as ENV 105.

Offered: Fall.

ANT 105LB Humanity and the Environment Discovery Laboratory

1 cr. hrs. 3 periods (3 lab)

Laboratory exercise and field trip experiences as applied to the relationship between humanity and the environment. Includes examining ecology and biodiversity, healthy- carrying capacity models, and waste by-product and their sources. Also includes designing pollution prevention and sustainable campus/town models, developing increased environmental ethics in relationships to the environment.

Corequisite(s): ANT 105

Information: This laboratory course satisfies the fourth credit hour of the Biological and Physical Science general education transfer credit if taken along with ANT 105.

Information: Same as ENV 105LB.

Offered: Fall.

ANT 109 Introduction to Global Studies

3 cr. hrs. 3 periods (3 lec.)

Survey of modern globalization. Includes the study of dimensions of globalization, global organizations, global politics, cultural globalization, the global economy, global environmental independence, and global social movements and counter movements. Also includes global interactions and their current effects on the restructuring of cultural, political, and economic institutions worldwide.

Information: Same as GLS 109 and SOC 109.

Offered: May not be offered this year, check class schedule.

ANT 110 Buried Cities and Lost Tribes

3 cr. hrs. 3 periods (3 lec.)

Exploration of the human past. Includes anthropology and its subfields, basics of archaeology, modern humans, origins of domestication, development of social complexity, ranked societies, and states around the world, and archaeology in the modern world.

Information: Same as ARC 110.

Offered: Fall, Spring.

ANT 112 Exploring Non-Western Cultures

3 cr. hrs. 3 periods (3 lec.)

Anthropological survey of non-Western cultures. Includes history and development of cultural anthropology, research methods, and relevant theories of the field. Also includes major cultural characteristics of pre-colonial, non-Western, subsistence cultures; making cross-cultural comparisons and contrasts with the post-colonial era; and considering a global context.

Information: Course meets the AGEC Special Requirements of "I" (Intensive Writing), "C" (Cultural Diversity) and "G" (Global Awareness). Students will have writing assignments that require college level skills, and writing quality will be graded.

Offered: Fall, Spring, Summer.

ANT 127 History and Culture of the Mexican-American in the Southwest

3 cr. hrs. 3 periods (3 lec.)

Historical survey of Mexicano(a)/Chicano(a) people from their indigenous origins in Meso-America and the Gran Chichimeca to the present in the United States. Includes historical writings, movements north under Spain and Mexico, repression and resistance. Also covers the political, economic, religious and social movements of the 19th, 20th and early 21st centuries.

Information: Same as HIS 127.

Offered: Fall, Spring.

ANT 136 Body and Art

3 cr. hrs. 3 periods (3 lec.)

A visual cultural exploration of how humans utilize the body as a vehicle for communicating and displaying personal and group identities. Includes anthropological and art historical study of types of permanent and temporary body decorations, masks, and performance and the ethical issues surrounding the study and use of imagery within and between cultures. Also includes the conceptual examination of global examples and an overview of practical projects to demonstrate the continued vitality of each mode of expression.

Information: Same as ART 136.

Offered: Spring.

ANT 148 History of Indians of North America

3 cr. hrs. 3 periods (3 lec.)

History of the cultural development of Native Americans of North America and the interrelations of cultures. Includes Native American origins, early economic and social development, Europeans, eras in Native American history, modern leadership, and research studies.

Information: Same as AIS/HIS 148.

Offered: Spring.

ANT 180 Artifact Identification: Tucson Basin

1 cr. hrs. 2 periods (.5 lec., 1.5 lab)

Introduction to the recognition, identification, and classification of the various types of artifacts recovered from local archaeological sites. Includes an overview of prehistoric ceramics in the Tucson Basin, flaked stone technology, ground stone tool identification, animal bone, marine shell artifacts and historical artifacts.

Information: Same as ARC 180.

Offered: Spring.

ANT 181 Global Positioning Systems Basics

1 cr. hrs. 1 periods (1 lec.)

Introduction to the use of Global Positioning Systems (GPS) receivers in a field setting for non-technical applications. Includes GPS vocabulary, operation, field data collection and data transfer. Also includes using equipment, resources and facilities of the Archaeology Centre.

Information: Same as ARC/GIS 181.

Offered: Fall.

ANT 202 Sexuality, Gender and Culture

3 cr. hrs. 3 periods (3 lec.)

Anthropological examination of gender identity, roles, relations, and variation. Includes theories and methods of the anthropology of sex and gender, historical origins and development of the sub-discipline, and sex, gender and sexuality in cross-cultural, ethnographic perspective. Also includes selected case studies and cross-cultural frameworks for analysis.

Information: Same as GWS 202.

Offered: Fall, Spring.

ANT 204IN Human Evolution: Ape Men, Cave Women and Missing Links

4 cr. hrs. 5 periods (3 lec., 2 lab)

Study of human evolution and variation. Includes fossil evidence, environmental and cultural change, primate anatomy and behavior, human genetics, human biology and biocultural interactions. Also includes the use of museum collections, equipment, resources, and facilities of the Archaeology Centre.

Information: Same as ARC 204IN.

Offered: Spring.

ANT 205 Introduction to Southwestern Prehistory

3 cr. hrs. 3 periods (3 lec.)

Study of the prehistory of the American Southwest from its earliest inhabitants to European contact. Includes anthropology and its subfields, basics of archaeology, the Southwest, Paleoindians, archaic peoples; Hohokam, Mogollon, Anasazi, and other Southwestern cultures; and late prehistoric and historic cultural change.

Information: Same as AIS/ARC 205.

Offered: Fall, Spring.

ANT 206 Contemporary Native Americans of the Southwest

3 cr. hrs. 3 periods (3 lec.)

Survey of Native American cultures with emphasis on peoples of the Southwestern United States and Northern Mexico. Includes overview of Native groups in the Southwestern United States and northern Mexico, environmental zones and modes of production, cultural and linguistic diversity, cultural configurations, Pan- Native American issues, and frameworks for understanding Native American culture and experience.

Information: Same as AIS 206.

Offered: May not be offered this year, check class schedule.

ANT 210 Cultural Anthropology

3 cr. hrs. 3 periods (3 lec.)

Exploration of the study of culture. Includes scientific and humanistic legacies of cultural anthropology, effects of paradigms on research focus and findings, survey of models for analysis, ethnographic studies, and evaluation of models and styles in anthropology.

Prerequisite(s): ANT 102.

Offered: May not be offered this year, check class schedule.

ANT 215 The Nature of Language

3 cr. hrs. 3 periods (3 lec.)

Introduction to anthropological linguistics. Includes the history of linguistics, descriptive linguistics, sociolinguistics, language and culture, and language and biology. Also includes language acquisition, language and education, and the history of language and writing.

Offered: Fall.

ANT 225 Principles of Archaeology

3 cr. hrs. 4 periods (2.5 lec., 1.5 lab)

Survey of the concepts and methods which archaeologists use to reconstruct human prehistory. Includes a history of archaeology; overview of theory in archaeological method and techniques of archaeological excavation; remote sensing, surveying, and mapping; dating methods; archaeological analysis and classification; interpretation of archaeological data; and the role of archaeology in cultural heritage protection and management. Also includes using museum collections, equipment, resources, and facilities of the Archaeology Centre.

Prerequisite(s): ANT/ARC 101 or 110 or 205.

Information: Prerequisite(s) may be waived with consent of instructor.

Information: Same as ARC 225.

Offered: Fall.

ANT 250 Archaeology Laboratory

4 cr. hrs. 6 periods (3 lec., 3 lab)

Laboratory experience in the curating, processing and analysis of artifacts recovered from archaeological sites. Includes human osteology, zooarchaeology, lithic analysis, prehistoric ceramics, shells, historic artifacts, and usage of the Archaeology Centre.

Prerequisite(s): ANT/ARC 101, 180.

Information: Same as ARC 250.

Information: Prerequisite(s) may be waived with consent of instructor.

Information: Same as ARC 250.

Offered: May not be offered this year, check class schedule.

ANT 253 Death and Dying Across Cultures

3 cr. hrs. 3 periods (3 lec.)

Introduction to death and dying in various cultures. Includes developmental aspects of death and grieving, world view, near-death experience, cultural views of the dying process, ethical issues in death across cultures, socio-political implications in the treatment of dead bodies, disposition of the corpse, and grieving and bereavement.

Offered: Fall, Spring.

ANT 265 Mapping Concepts

1 cr. hrs. 1 periods (1 lec.)

Introduction to the practical use of maps. Includes map basics and attributes, scales and measurements, direction, geographic coordinate systems, relief and contours, and aerial photography.

Information: Same as ARC/GEO/GIS 265.

Offered: Fall.

ANT 267 Introduction to Geographic Information Systems

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the technology of geographic information systems (GIS). Includes the evolution of the technology, applications, benefits and costs, characteristics of geographic data, data types, database concepts, and operations and functionality. Also includes hardware, software, implementation, legal issues, and the future of geographic information systems.

Prerequisite(s): ANT/ARC/GEO/GIS 265 or concurrent enrollment.

Information: Prerequisite may be waived with consent of instructor.

Information: Basic computer skills are required before enrolling in this course.

Information: Same as ARC/GEO/GIS 267.

Offered: Fall.

ANT 275 Archaeological Excavation I

4 cr. hrs. 8 periods (2 lec., 6 lab)

Introduction to the techniques of archaeological mapping, excavation and recording. Includes field experience in southern Arizona. Also includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

Information: Same as ARC 275.

Offered: Fall.

ANT 276 Archaeological Surveying I

4 cr. hrs. 8 periods (2 lec., 6 lab)

Techniques and methods for recognizing, locating and recording archaeological sites. Includes exploration methods, issues of cultural resource management, instrument skills, map use, and remote sensing applications. Also includes natural resources associated with archaeological sites, application of field techniques, and documentation.

Prerequisite(s): ANT/ARC 180 or concurrent enrollment.

Recommendation: Consult instructor for alternative prerequisites before enrolling in this course.

Information: Same as ARC 276.

Offered: Spring.

ANT 277 Archaeological Excavation II

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of ANT/ARC 275. Includes advanced excavation techniques, field crew supervision, and selected field projects. Also includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

Prerequisite(s): ANT/ARC 205 and ANT/ARC 265 or concurrent enrollment, ANT/ARC 275, and GLG 101.

Recommendation: Consult instructor for alternative prerequisites before enrolling in this course.

Information: Same as ARC 277.

Offered: Fall.

ANT 278 Archaeological Surveying II

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of ANT/ARC 276. Includes goals and objectives of archaeological exploration, archival investigation, planning field projects, and computer resources.

Prerequisite(s): ANT/ARC 205, 265 (or concurrent enrollment), 276 and GLG 101.

Information: Same as ARC 278. Consult instructor for alternative prerequisite(s).

Offered: Spring.

ANT 281 Global Positioning Systems

1 cr. hrs. 3 periods (3 lab)

Introduction to the technical use of Global Positioning Systems (GPS) receivers in a field setting. Includes review of GPS vocabulary and concepts, comprehensive initialization of handheld GPS receivers, data collection with handheld GPS, the use of mapping software with data from handheld GPS, concepts of differential GPS, operation of and field data collection with static and RTK precision GPS, use of software packages for differential correction and map production. Also includes using equipment, resources and facilities of the Archaeology Center.

Prerequisite(s): ANT/ARC/GIS 181.

Information: Prerequisite may be waived with equivalent experience or consent of instructor.

Information: Same as ARC/GIS 281.

Offered: Spring.

ANT 284 Computer Cartography and CAD

3 cr. hrs. 5 periods (2 lec., 3 lab)

Cartographic techniques and hardware for computer generation of maps. Includes an introduction to methods and techniques, and application projects.

Prerequisite(s): ANT/ARC/GEO/GIS 265 or concurrent enrollment.

Information: Same as ARC/GEO/GIS 284.

Offered: Spring.

ANT 286 Electronic and Digital Field Mapping

4 cr. hrs. 8 periods (2 lec., 6 lab)

Overview of the creation of electronic and digital maps in a field setting. Includes an introduction to instrument operation, field data, producing maps, and computer applications.

Prerequisite(s): ANT/ARC 265 and ANT/ARC/GIS 281.

Recommendation: Consult instructor for alternative prerequisite(s).

Information: Same as ARC/GIS 286.

Offered: May not be offered this year, check class schedule.

ANT 295 Field Projects

.5-4 cr. hrs. 1.5-12 periods (1.5-12 lab)

Participation in a field project in one of the subfields of anthropology.

Information: Same as ARC 295.

Information: Consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

ANT 296 Independent Studies in ANT/ARC

.5-4 cr. hrs. 1.5-12 periods (1.5-12 lab)

Students independently continue their studies in anthropology under the supervision of a faculty member.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Same as ARC 296.

Offered: May not be offered this year, check class schedule.

Arabic

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ARB 101 Elementary Modern Standard Arabic I

5 cr. hrs. 5 periods (5 lec.)

Introduction to modern standard Arabic language. Includes modern standard Arabic alphabet, grammatical structures, interpersonal transactions, and cultural contexts. Also includes speaking, listening, reading, and writing of Arabic.

Offered: Spring.

ARB 102 Elementary Modern Standard Arabic II

5 cr. hrs. 5 periods (5 lec.)

Continuation of ARB 101. Includes additional uses of Modern Standard Arabic alphabet, grammatical structures interpersonal transactions and protocols, and cultural contexts. Also includes additional speaking, listening, reading, and writing of Arabic.

Prerequisite(s): ARB 101.

Offered: Fall.

Archaeology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ARC 060 Artifacts and Sites of Tucson

.5 cr. hrs. .5 periods (.5 lec.)

Overview of the artifacts and archaeological sites of the Tucson Basin. Includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

Information: Field trip is part of the course.

Offered: Spring.

ARC 062 Stone Tool Making

.5 cr. hrs. .5 periods (.5 lec.)

Introduction to the production of chipped stone tools. Includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

Offered: Fall, Spring.

ARC 093 Archaeology Workshop

.5-3 cr. hrs. .5-3 periods (.5-3 lec.)

Workshop with an emphasis on field and lab techniques. Includes using museum collections, equipment, resources and facilities of the Archaeology Centre or equivalent.

Offered: Spring.

ARC 101 Human Origins and Prehistory

3 cr. hrs. 3 periods (3 lec.)

Survey of physical anthropology and archaeology. Includes anthropology and its subfields, the development of evolutionary theory, modern human variation, primates, paleoanthropology and archaeology, and the emergence of the human species from its origins.

Information: Same as ANT 101.

Offered: Fall, Spring.

ARC 110 Buried Cities and Lost Tribes

3 cr. hrs. 3 periods (3 lec.)

Exploration of the human past. Includes anthropology and its subfields, basics of archaeology, modern humans, origins of domestication, development of social complexity, ranked societies, and states around the world, and archaeology in the modern world.

Information: Same as ANT 110.

Offered: Fall, Spring.

ARC 180 Artifact Identification:Tucson

1 cr. hrs. 2 periods (.5 lec., 1.5 lab)

Artifact Identification: Tucson Basin Introduction to the recognition, identification, and classification of the various types of artifacts recovered from local archaeological sites. Includes an overview of prehistoric ceramics in the Tucson Basin, flaked stone technology, ground stone tool identification, animal bone, marine shell artifacts and historical artifacts.

Information: Same as ANT 180.

Offered: Spring.

ARC 181 Global Positioning Systems Basics

1 cr. hrs. 1 periods (1 lec.)

Introduction to the use of Global Positioning Systems (GPS) receivers in a field setting for non-technical applications. Includes GPS vocabulary, operation, field data collection and data transfer. Also includes using equipment, resources and facilities of the Archaeology Centre.

Information: Same as ANT/GIS 181.

Offered: Fall.

ARC 204IN Human Evolution: Ape Men, Cave Women and Missing Links

4 cr. hrs. 5 periods (3 lec., 2 lab)

Study of human evolution and variation. Includes fossil evidence, environmental and cultural change, primate anatomy and behavior, human genetics, human biology and biocultural interactions. Also includes the use of museum collections, equipment, resources, and facilities of the Archaeology Centre.

Information: Same as ANT 204IN.

Offered: Spring.

ARC 205 Introduction to Southwestern Prehistory

3 cr. hrs. 3 periods (3 lec.)

Study of the prehistory of the American Southwest from its earliest inhabitants to European contact. Includes anthropology and its subfields, basics of archaeology, the Southwest, Paleoindians, archaic peoples; Hohokam, Mogollon, Anasazi, and other Southwestern cultures; and late prehistoric and historic cultural change.

Information: Same as AIS/ANT 205.

Offered: Fall, Spring.

ARC 225 Principles of Archaeology

3 cr. hrs. 4 periods (2.5 lec., 1.5 lab)

Survey of the concepts and methods which archaeologists use to reconstruct human prehistory. Includes a history of archaeology; overview of theory in archaeological method and techniques of archaeological excavation; remote sensing, surveying, and mapping; dating methods; archaeological analysis and classification; interpretation of archaeological data; and the role of archaeology in cultural heritage protection and management. Also includes using museum collections, equipment, resources, and facilities of the Archaeology Centre.

Prerequisite(s): ANT/ARC 101 or 110 or 205.

Information: Prerequisite(s) may be waived with consent of instructor.

Information: Same as ANT 225.

Offered: Fall.

ARC 250 Archaeology Laboratory

4 cr. hrs. 6 periods (3 lec., 3 lab)

Laboratory experience in the curating, processing and analysis of artifacts recovered from archaeological sites. Includes human osteology, zooarchaeology, lithic analysis, prehistoric ceramics, shells, historic artifacts, and usage of the Archaeology Centre.

Prerequisite(s): ANT/ARC 101 and 180.

Information: Prerequisites may be waived with consent of instructor.

Information: Same as ANT 250.

Offered: May not be offered this year, check class schedule.

ARC 265 Mapping Concepts

1 cr. hrs. 1 periods (1 lec.)

Introduction to the practical use of maps. Includes map basics and attributes, scales and measurements, direction, geographic coordinate systems, relief and contours, and aerial photography.

Information: Same as ANT/GEO/GIS 265.

Offered: Fall.

ARC 267 Introduction to Geographic Information Systems

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the technology of geographic information systems (GIS). Includes the evolution of the technology, applications, benefits and costs, characteristics of geographic data, data types, database concepts, and operations and functionality. Also includes hardware, software, implementation, legal issues, and the future of geographic information systems.

Prerequisite(s): ANT/ARC/GEO/GIS 265 or concurrent enrollment.

Information: Prerequisite may be waived with consent of instructor. Basic computer skills are required before enrolling in this course.

Same as ANT/GEO/GIS 267.

Offered: Fall.

ARC 275 Archaeological Excavation I

4 cr. hrs. 8 periods (2 lec., 6 lab)

Introduction to the techniques of archaeological mapping, excavation and recording. Includes field experience in southern Arizona. Also includes using museum collections, equipment, resources and facilities of the Archaeological Centre.

Information: Same as ANT 275.

Offered: Fall.

ARC 276 Archaeological Surveying I

4 cr. hrs. 8 periods (2 lec., 6 lab)

Techniques and methods for recognizing, locating and recording archaeological sites. Includes exploration methods, issues of cultural resource management, instrument skills, map use, and remote sensing application. Also includes natural resources associated with archaeological sites, application of field techniques, and documentation.

Prerequisite(s): ANT/ARC 180 or concurrent enrollment.

Recommendation: Consult instructor for alternative prerequisites.

Information: Same as ANT 276.

Offered: Spring.

ARC 277 Archaeological Excavation II

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of ARC/ANT 275. Includes advanced excavation techniques, field crew supervision, and selected field projects. Also includes using museum collections, equipment, resources and facilities of the Archaeology Centre.

Prerequisite(s): ANT/ARC 205 and ANT/ARC 265 or concurrent enrollment, ANT/ARC 275 and GLG 101.

Recommendation: Consult instructor for alternative prerequisites before enrolling in this course.

Information: Same as ANT 277.

Offered: Fall.

ARC 278 Archaeological Surveying II

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of ARC/ANT 276. Includes goals and objectives of archaeological exploration, archival investigation, planning field projects, and computer resources.

Prerequisite(s): ANT/ARC 205, 265 (or concurrent enrollment), 276 and GLG 101.

Information: Same as ANT 278. Consult instructor for alternative prerequisite(s).

Offered: Spring.

ARC 281 Global Positioning Systems

1 cr. hrs. 3 periods (3 lab)

Introduction to the technical use of Global Positioning Systems (GPS) receivers in a field setting. Includes review of GPS vocabulary and concepts, comprehensive initialization of handheld GPS receivers, data collection with handheld GPS, the use of mapping software with data from handheld GPS, concepts of differential GPS, operation of and field data collection with static and RTK precision GPS, use of software packages for differential correction and map production. Also includes using equipment, resources and facilities of the Archaeology Center.

Prerequisite(s): ANT/ARC/GIS 181.

Information: Prerequisite(s) may be waived with equivalent experience or consent of instructor. Same as ANT/GIS 281.

Offered: May not be offered this year, check class schedule.

ARC 284 Computer Cartography and CAD

3 cr. hrs. 5 periods (2 lec., 3 lab)

Cartographic techniques and hardware for computer generation of maps. Includes an introduction to methods and techniques, and application projects.

Prerequisite(s): ANT/ARC/GEO/GIS 265 or concurrent enrollment.

Information: Same as ANT/GEO/GIS 284.

Offered: Spring.

ARC 286 Electronic and Digital Field Mapping

4 cr. hrs. 8 periods (2 lec., 6 lab)

Overview of the creation of electronic and digital maps in a field setting. Includes an introduction to instrument operation, field data, producing maps, and computer applications.

Prerequisite(s): ANT/ARC 265 and ANT/ARC/GIS 281.

Recommendation: Consult instructor for alternative prerequisite(s).

Information: Same as ANT/GIS 286.

Offered: May not be offered this year, check class schedule.

ARC 295 Field Projects

.5-4 cr. hrs. 1.5-12 periods (1.5-12 lab)

Participation in a field project in one of the subfields of anthropology.

Information: Same as ANT 295.

Information: Consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

ARC 296 Independent Studies in ANT/ARC

.5-4 cr. hrs. 1.5-12 periods (1.5-12 lab)

Students independently continue their studies in anthropology under the supervision of a faculty member.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Information: Same as ANT 296.

Offered: May not be offered this year, check class schedule.

Art

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ART 100 Basic Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the elements and principles of visual design. Includes identifying and interpreting creative problems; emphasizing art and design skills; writing reviews of gallery visits/museum visits/artist lectures; articulating and demonstrating progressive skills in their own work; participating in individual and group critiques; and relating their work on a conceptual, interpersonal and global level.

Offered: Fall, Spring, Summer.

ART 105 Exploring Art and Visual Culture

3 cr. hrs. 3 periods (3 lec.)

Exploration of historical and contemporary art and the visual image within the context of culture. Includes selective perception; formal analysis; materials and techniques; art in a historical framework; visual culture; meaning and value in art and visual culture; and high and low culture art. Also includes contemporary issues; traditional and contemporary themes in art; museums, galleries, and public spaces; and process, form, and content in making art.

Offered: Fall, Spring, Summer.

ART 106 Survey of Painting Materials and Techniques

3 cr. hrs. 5 periods (2 lec., 3 lab)

Technical and theoretical investigation of the most prominent painting methods from Ancient Greece to the present. Includes materials used in painting, the Fresco, Encaustic, Glair, Egg Tempera, the Indirect and Direct Oil, and Watercolor Techniques.

Offered: May not be offered this year, check class schedule.

ART 109 Watercolor Painting

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introductory course in watercolor painting that explores basic materials, techniques, and development of students' personal style. Includes compositional elements, materials and tools, mixing colors and properties of watercolor pigments, application methods, developing subject matter and genres, and critique and artistic development.

Offered: Fall, Spring.

ART 110 Drawing I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to drawing. Includes drawing and design problems, varied use of materials and techniques, perceptual skills, critique processes with critical thinking for personal growth, analysis of professional art events or galleries, and portfolio creation.

Offered: Fall, Spring, Summer.

ART 115 Color and Composition

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to recognizing color principles and relationships and analyzing duplicating colors. Includes value scale, color wheel, intensity, color relationships, transparency, dimension, luminosity, and creative projects.

Recommendation: Completion of ART 100 before enrolling in this course.

Offered: Fall, Spring.

ART 120 Sculptural Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to sculpture and three-dimensional design. Includes concepts and approaches, content development, visual literacy, critical analysis, art elements, exploration of a range of media and techniques, and basic sculptural design lab procedures.

Recommendation: Completion of ART 100 before enrolling in this course.

Offered: Fall, Spring.

ART 121 Figure Sculpture

3 cr. hrs. 5 periods (2 lec., 3 lab)

Beginning modeling techniques using clay and other media working partly from anatomical references and partly from the model. Includes visual literacy and critical analysis, range of media, approaches to figurative sculpture, technical understanding in working with human anatomy, content, and safety.

Recommendation: Completion of ART 120 and 213 before enrolling in this course.

Information: There may be additional supply costs in addition to course fees.

Offered: Spring.

ART 123 Lost Wax Sculpture Casting

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to metal casting of sculpture with emphasis on the ceramic shell method of moldmaking, historical and contemporary issues in cast sculpture, and individual artistic expression. Includes major techniques, health and safety issues, verbalization of visual perceptions, project variations, and content.

Recommendation: Completion of ART 100 before enrolling in this course.

Offered: Fall, Spring.

ART 128 Digital Photography I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to digital photography emphasizing the technical and aesthetic issues and how these qualities form image content. Includes Adobe Photoshop basics, history of still photography, applications of digital cameras, aspects of the digital medium, camera and computer equipment requirements, digital still camera, memory and file formats, digital still camera lenses, and proper exposure. Also includes light, color, and temperature; depth of field, shutter speed effects, proper use of digital photography, lighting for digital stills, elements of composition, photographic rendering and reality, outputting and publishing, portfolio preparation, and career options in digital photography.

Recommendation: Adobe Photoshop experience is highly recommended before enrolling in this course.

Information: Same as DAR 128. It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software. Professional photographic equipment, including cameras, are available for check out on a rotating basis. Professional quality computers, software, printers, lighting equipment, and studio will be provided for specific assignments. There will be additional supply costs beyond course fees.

Offered: Fall, Spring.

ART 130 Art and Culture: Prehistoric through Gothic

3 cr. hrs. 3 periods (3 lec.)

A survey of the development of art and architecture in Western Civilization from prehistoric through Gothic art with the inclusion of a global perspective. Includes identification and interpretation of cultural and stylistic characteristics, contextual functions and purposes of works of art, influences of cultural values on the production of art, art historical terminology, exemplars of non-Western culture, and critical methodologies.

Offered: Fall, Spring.

ART 131 Art and Culture: Late Gothic through Modern Periods

3 cr. hrs. 3 periods (3 lec.)

Continuation of ART 130. Includes western civilization's major contribution to the development of sculpture, painting, and architecture from the Renaissance into the twentieth century.

Offered: Fall, Spring, Summer.

ART 133 Art in America

3 cr. hrs. 3 periods (3 lec.)

Introductory survey of American art from the colonial period to the present as well as European and global influences. Includes characteristics of American art, cultural conditions surrounding historical periods, influences on art production, surrounding cultural production, unique contributions of diverse cultural groups, and critical methodologies.

Offered: May not be offered this year, check class schedule.

ART 135 Pre-Columbian Art

3 cr. hrs. 3 periods (3 lec.)

Anthropological and art historical survey of the indigenous cultures of the Americas from the earliest times to the period of the Spanish conquest. Includes non-Western art and Western gaze, humanity in the Americas, art and architecture of the Pre-Columbian Andes, art and architecture of Pre-Columbian Mesoamerica, and North American indigenous art and architecture.

Offered: May not be offered this year, check class schedule.

ART 136 Body and Art

3 cr. hrs. 3 periods (3 lec.)

A visual cultural exploration of how humans utilize the body as a vehicle for communicating and displaying personal and group identities. Includes anthropological and art historical study of types of permanent and temporary body decorations, masks, and performance; and the ethical issues surrounding the study and use of imagery within and between cultures. Also includes the conceptual examination of global examples and an overview of practical projects to demonstrate the continued vitality of each mode of expression.

Information: Same as ANT 136.

Offered: Spring.

ART 140 Photography I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to black and white photography as an art form with an emphasis on fundamental technique of the camera and wet darkroom. Includes manual camera competencies, manual film development, basic darkroom procedures, portfolio building, visual literacy and critical analysis, and the role of photography.

Recommendation: Completion of ART 100 before enrolling in this course.

Offered: Fall, Spring.

ART 141 Photography II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Principles and processes of intermediate black and white photography. Includes use of various types of camera formats, development of film, creating a series, individual darkroom space, advanced darkroom techniques, portfolio production, exhibition presentation, copy slide production, and verbalization of visual perceptions.

Prerequisite(s): ART 140.

Information: Student is required to submit a portfolio for review.

Offered: Spring.

ART 146 Lighting for Photography I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to creative professional lighting concepts and techniques for commercial and fine art photography. Includes lighting and studio equipment, light qualities, lighting for form, lighting for surface qualities, still-life photography, portrait photography, image composition, critical analysis, and portfolio.

Prerequisite(s): ART/DAR 128.

Information: Students are strongly recommended to own or have access to a digital camera with manual exposure control and a computer with image processing software. Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments.

Information: There may be additional supply costs in addition to course fees.

Information: Same as DAR 146.

Offered: Fall, Spring.

ART 147 Alternative Processes in Photography

3 cr. hrs. 5 periods (2 lec., 3 lab)

Designed for the advanced image maker interested in expanding knowledge of alternative photographic processes. Includes enlarging negatives for contact printing, nineteenth century processes, twentieth century processes, darkroom materials, and artwork presentation.

Prerequisite(s): ART 128 or 140.

Offered: Fall, Spring.

ART 160 Ceramics I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to ceramics. Includes beginning handbuilding techniques and methods of fabrication, wheel throwing and trimming, projects involving formal elements, beginning ceramic techniques, reduction firing, raku firing, ceramic artist research, discussion, and exploration topics.

Recommendation: Completion of ART 100 before enrolling in this course or concurrent enrollment.

Offered: Fall, Spring.

ART 170 Metalwork I: Jewelry

3 cr. hrs. 5 periods (2 lec., 3 lab)

Exploration of the basic techniques and design approaches used in the fabrication of jewelry and other metalwork. Includes information and background on historical and contemporary metalwork and jewelry, and techniques and processes of jewelry and metalwork.

Recommendation: Completion of ART 100 before enrolling in this course.

Offered: Fall, Spring.

ART 175 Ferrous Metalwork: Blacksmithing, Tool Making/Knife Making

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the materials, design, techniques, safety habits, and methods used in ferrous metalwork. Includes basic tools and techniques of blacksmithing, metals lab procedures, tool design, and metallurgical theory and metalworking practice.

Recommendation: Completion of ART 100 is recommended before enrolling in this course.

Offered: Fall, Spring.

ART 180 Weaving I: Four-Harness Loom

3 cr. hrs. 5 periods (2 lec., 3 lab)

Weaving on a four-harness loom. Includes projects involving color, texture, patterns, and the use of tabby, twill, tubular, textural, and tapestry weaves in the creation of fiber art and creative and functional objects.

Recommendation: Completion of ART 100 before enrolling in this course.

Offered: Spring.

ART 181 Mixed Media Fibers

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to fiber as an art medium. Includes fiber processes such as basketry, crochet, macrame, plaiting, surface design, and mixed media, which are used to create artistic compositions.

Recommendation: Completion of ART 100 before enrolling in this course.

Offered: Spring.

ART 210 Drawing II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 110. Includes strengthening of drawing and critical thinking skills. Also includes intermediate drawing and design problems; intermediate use of materials and techniques; perceptual skill and personal development; critique process; engagement and analysis of professional art events or galleries; and portfolio creation.

Prerequisite(s): ART 110.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: Fall, Spring.

ART 212 Printmaking I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to basic aesthetics and techniques of printmaking. Includes intaglio etching, relief printing, and monotypes.

Offered: Fall, Spring.

ART 213 Life Drawing I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Drawing of human figures using the two-dimension concept as a graphic vehicle of expression. Includes gesture and contour drawing, varied time length poses, drawing problems, variety of materials, and individual and group critiques of work.

Recommendation: Completion of ART 110 before enrolling in this course.

Offered: Fall, Spring.

ART 214 Printmaking II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 212. Includes advanced problems in aesthetics and techniques of intaglio etching, relief printing, monotype techniques, and alternative and non-traditional approaches to printmaking.

Offered: Fall, Spring.

ART 215 Painting I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the fundamentals of oil painting. Includes basic painting techniques and processes, manipulation of compositional elements and formal and contemporary pictorial organization in various genres, surface preparation, personal direction and artistic expression, and health and safety in the painting studio.

Recommendation: Completion of ART 115 before enrolling in this course.

Offered: Fall, Spring.

ART 216 Screenprinting I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to screenprinting using water base and inks. Includes screen construction, direct stencil techniques, photographic techniques, one-color printing, multicolor printing and registration, overview of the types of printing papers, and final presentation.

Offered: Fall, Spring.

ART 217 Painting II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 215. Includes intermediate development and reinforcement of basic oil painting techniques and processes, development of compositional elements and formal pictorial organization, manipulation of pictorial elements, artistic expression, and health and safety in the painting studio.

Prerequisite(s): ART 215.

Recommendation: Completion of ART 115 before enrolling in this course.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: Fall, Spring.

ART 218 Screenprinting II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 216. Includes equipment orientation, advanced stencil-making techniques, printing, and types of printing papers.

Prerequisite(s): ART 216.

Information: Students may select areas of interest for concentration and refinement of skills.

Offered: Fall, Spring.

ART 219 Printmaking III

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 214. Includes experimentation with intaglio, multi-color possibilities with non-traditional compositions, relief and intaglio multi-processes, monoprint with multiple plates, and critical analysis.

Prerequisite(s): ART 214.

Offered: Spring.

ART 220 Sculpture

3 cr. hrs. 6 periods (3 lec., 3 lab)

Exploration of methods, materials, and content used in sculpture. Includes art elements, art principles, media and technique, sculpture lab procedures, content issues, projects, and visual literacy and critical analysis.

Information: ART 120 or consent of instructor is required before enrolling in this course.

Offered: Fall, Spring.

ART 223 Life Drawing II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced drawing of human figures using the two-dimension concept as a graphic vehicle of expression. Includes proportional sight strategies, varied time-length poses, drawing problems and materials, figure as expression, and individual and group critiques of work.

Prerequisite(s): ART 213.

Recommendation: Completion of ART 110 and/or 210 before enrolling in this course.

Offered: Fall, Spring.

ART 227 Painting III

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of Painting II. Intermediate to advanced development of painting techniques and processes, balancing compositional elements and formal pictorial organization. Includes emphasis on establishing personal artistic expression for presentation of work. Also includes employ procedures for prolonged health and safety in a painting studio.

Prerequisite(s): ART 217.

Recommendation: Completion of ART 115 before enrolling in this course.

Information: Prerequisite may be waived with consent of instructor.

Offered: Fall, Spring.

ART 230 History of Photography

3 cr. hrs. 3 periods (3 lec.)

Introduction to the history of photography from 1839 to contemporary schools. Includes development of the technical aspects of photography, styles, movements and its relationship to artistic and cultural heritage.

Offered: May not be offered this year, check class schedule.

ART 232 Digital Photography II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of ART/DAR 128. Includes intermediate digital cameras with manual functions, intermediate digital darkroom and digital output, quality of light, intermediate image composition, multiple images, intermediate portfolio development, and critical analysis. Also includes the intermediate use of state-of-the-art professional quality computers and image processing software, professional digital cameras, printers, and a lighting studio with professional lighting equipment.

Prerequisite(s): ART/DAR 128.

Recommendation: Completion of DAR 221 before enrolling in this course.

Information: Same as DAR 232. The prerequisite may be waived with consent of the instructor. It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software. Professional photographic equipment, including cameras, are available for check out on a rotating basis. Professional quality computers, software, printers, lighting equipment, and studio will be provided for specific assignments.

Information: There will be additional supply costs beyond course fees.

Offered: Spring.

ART 246 Lighting for Photography II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of ART/DAR 146. Includes lighting and equipment for studio and location, advanced lighting qualities and techniques, photographing with mixed light sources, lighting for mood and environment, set design and construction, photographing individuals and groups of people, photographing on location, photographing for montage images, advanced image composition, critical analysis, business practices, and portfolios.

Prerequisite(s): ART/DAR 146.

Information: Students are strongly recommended to own or have access to a digital camera with manual exposure control and a computer with image processing software. Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments.

Information: There may be additional supply costs in addition to course fees.

Information: Same as DAR 246.

Offered: Fall, Spring.

ART 248 Individual Projects in Photography

3 cr. hrs. 5 periods (2 lec., 3 lab)

Individual projects in photography at the advanced level. Includes defining a body of work, applying visual presentation formats, editioning a print, and equipment and technical photographic skills.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

ART 249 Artists' Books

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the basics of the various styles of bookmaking. Includes historical and contemporary practices, bookbinding techniques, book styles, materials, text and image, unique and multiple edition book runs, and critique of artists' books.

Recommendation: Completion of ART 100 before enrolling in this course.

Offered: Spring.

ART 250 Gallery and Museum Practices

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to practices and procedures of galleries and museums. Includes management of student gallery spaces on campus. Also includes community involvement with local business.

Recommendation: Completion of ART 100 before enrolling in this course. Prerequisite(s): ART 100. Consult instructor for alternative prerequisites.

Offered: Fall, Spring.

ART 260 Ceramics II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 160. Includes intermediate handbuilding techniques and methods of fabrication, wheel throwing and trimming, projects involving formal elements, intermediate ceramic techniques, reduction firing, raku firing, plaster press mold, ceramic artist research, and discussion and exploration topics.

Prerequisite(s): ART 160.

Offered: Fall, Spring.

ART 261 Ceramics III

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 260. Includes intermediate and advanced handbuilding techniques and methods of fabrication, wheel throwing and trimming, projects involving formal elements, intermediate and advanced ceramic techniques, reduction firing, raku firing, plaster press mold, ceramic artist research, and discussion and exploration topics.

Prerequisite(s): ART 260.

Offered: Fall, Spring.

ART 262 Ceramics IV

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 261. Includes advanced handbuilding techniques and methods of fabrication, wheel throwing and trimming, projects involving formal elements, advanced ceramic techniques, reduction firing, raku firing, plaster press mold, ceramic artist research, and discussion and exploration topics.

Prerequisite(s): ART 261.

Offered: Fall, Spring.

ART 265 Furnace Glassblowing I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the elements, tools, and basic principles of furnace glassblowing. Includes the glassblowing studio and cold working shop orientation, paperweights and solid glass forms, the blowpipe, cold working glass, a final project, and visual literacy and critical analysis.

Recommendation: Completion of ART 100 before enrolling in this course.

Information: Consent of instructor is required before enrolling in this course. This course requires a substantial special fee through Sonoran Glass Art Academy. Please contact the Arts, Communications and Humanities Division at the West Campus (206-6974) for further information.

Offered: Fall, Spring.

ART 266 Furnace Glassblowing II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 265. Includes a review of the glassblowing studio and cold working shop orientation, advanced techniques with hollow and solid glass forms, continued development of blowpipe skills, refinement of cold working glass methods, final project, and visual literacy and critical analysis.

Prerequisite(s): ART 265.

Information: Consent of instructor is required before enrolling in this course. This course requires a substantial special fee through Sonoran Glass Art Academy. Please contact the Arts, Communications and Humanities Division at the West Campus (206-6974) for further information.

Offered: Spring.

ART 270 Metalwork II: Jewelry

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 170. Includes design approaches to jewelry making, review of various intermediate techniques, functional considerations involved in jewelry design, and safety and health issues.

Prerequisite(s): ART 170.

Offered: Spring.

ART 271 Metalwork II: Smithing and Casting

3 cr. hrs. 5 periods (2 lec., 3 lab)

Design and production of jewelry and metal objects. Includes design approaches to metalwork, review or various intermediate techniques, functional considerations involved in smithing and casting, and safety and health issues.

Prerequisite(s): ART 170.

Offered: May not be offered this year, check class schedule.

ART 280 Weaving II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of ART 180. Includes study and exercises using four-eight harness pattern weaves and advanced creative projects. Students may select areas of interest for in-depth exploration.

Prerequisite(s): ART 180.

Recommendation: Completion of ART 100 is recommended before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

ART 288 Portfolio Preparation

3 cr. hrs. 5 periods (2 lec., 3 lab)

Overview of the development and marketing of a professional portfolio. Includes definition and evaluation of coherent bodies of work, documentation of work, preparation of portfolio production, production of a portfolio, parts of a portfolio, and marketing.

Recommendation: For advanced students who have completed coursework in their specific areas.

Information: Portfolio concentrations will be determined in a conference between student and instructor.

Information: Same as FDC 288.

Offered: Fall, Spring.

ART 29611 Independent Study in ART: Art History

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in art history. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

ART 29612 Independent Study in ART: Ceramics

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in ceramics. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

ART 29613 Independent Study in ART: Metals

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in metals. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

ART 29614 Independent Study in ART: Painting, Drawing, and Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in painting, drawing, and design. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

ART 29615 Independent Study in ART: Photography

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in photography. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

ART 29616 Independent Study in ART: Printmaking

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in printmaking. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

ART 29617 Independent Study in ART: Sculpture

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in sculpture. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

ART 29618 Independent Study in ART: Fibers

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in fibers. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

ART 29619 Independent Study in ART: Glass

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced projects in glass. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated see a financial aid advisor or Veterans Affairs advisor to determine funding eligibility.

Information: This course requires a substantial special fee through Sonoran Glass Art Academy. Please contact the Arts, Communications and Humanities Division at the West Campus (206-6974) for further information.

Offered: May not be offered this year, check class schedule.

Art For Personal Development

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

APD 050 Photography

2 cr. hrs. 4 periods (1 lec., 3 lab)

Introduction to film and digital photography for the hobbyist/enthusiast. Includes history of still photography, introduction to the camera: digital or film, principles of exposure, manipulating light, and darkroom orientation.

Information: Students will supply their own camera and necessary materials. There are no additional course fees.

Offered: May not be offered this year, check class schedule.

APD 062 Acrylic and Oil Painting

2 cr. hrs. 4 periods (1 lec., 3 lab)

Introduction to oil and acrylic painting. Includes painting preparation, composing and building paintings, and developing a personal vision.

Offered: May not be offered this year, check class schedule.

APD 065 Watercolor

2 cr. hrs. 4 periods (1 lec., 3 lab)

Introduction to watercolor painting for personal use. Includes watercolor materials, properties of watercolor pigments, and watercolor application methods.

Offered: May not be offered this year, check class schedule.

Astronomy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

AST 101IN Solar System

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the science of the nature and origin of the solar system: the sun and its family of planets, along with comets and asteroids. Includes the history of astronomy and special topics regarding the space program. Also includes scientific thinking as an application of critical and quantitative thinking, and science in contrast to pseudoscience. Also includes in-class measurement and mathematical exercises, outside observation projects, independent studies, and self-initiated trips to local astronomy facilities.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

AST 102IN Stars, Galaxies, Universe

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the universe beyond the solar system. Includes the nature of light, how astronomers and telescopes work, and the possibilities of alien life in the universe. Also includes the lifetime of stars, exotic objects such as quasars, pulsars and black holes; and the origin, nature, and future of the universe. Also includes scientific thinking as an application of critical and quantitative thinking and science in contrast to pseudoscience. Also includes in-class measurement and mathematical exercises, outside observation projects, independent studies, and self-initiated field trips to local astronomy facilities.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

AST 105IN Life in the Universe

4 cr. hrs. 6 periods (3 lec., 3 lab)

The science of astronomy focusing on the formation of the universe, the solar system, and life. Includes Earth's location in space and time, nature of life, light and the spectrum, origin of the universe, galaxies and stars, origin of the solar system, planetary atmospheres, origin of life on Earth, life on other solar system planets, and life around other stars. Also includes observations, experiments, image analysis, scientific and photogeology laboratory exercise, group telescopic observation projects, and personal observation projects.

Prerequisite(s): MAT 086 with a grade of C or better, or placement into MAT 092, or completion of Module 22 in MAT 089.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

AST 296LB Independent Study in Astronomy

1-4 cr. hrs. 3-12 periods (3-12 lab)

Experience in astronomical research, projects, or topical studies. Specific content to be determined by student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Automotive Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

AUT 100 Small Engine Troublesht&Repair

3 cr. hrs. 5 periods (1 lec., 4 lab)

Small Engine Troubleshooting and Repair Principles and procedures for overhauling, troubleshooting and repairing small engines. Includes safety and hazardous materials handling, engine types and identification, engine operation and maintenance, disassembly and inspection, engine reconditioning and assembly, fuel and ignition system assembly, mechanical operation and testing, multicylinder engines, and overhead valve (OHV) engines.

Offered: Fall, Spring, Summer.

AUT 101 Automotive Maintenance

3 cr. hrs. 7 periods (1 lec., 6 lab)

Automotive Maintenance Techniques of routine vehicle maintenance. Includes customer vehicle identification and handling, new vehicle pre-delivery inspection and preparation, safety inspection, lubrication tasks, light line tasks, and fluid flushing.

Offered: Fall, Spring, Summer.

AUT 105 Light Line Maintenance

3 cr. hrs. 5 periods (1 lec., 4 lab)

Principles and procedures for light line service. Includes safety, transmission and driveline systems, air conditioning/heating systems, electrical systems, suspension/steering systems, engine performance, and tools and equipment.

Offered: Fall, Spring, Summer.

AUT 120 Engine Diagnosis and Repair

3 cr. hrs. 7 periods (1 lec., 6 lab)

Techniques for light line engine service. Includes personal and environmental safety, general engine diagnosis, lubrication system diagnosis and repair, cooling system diagnosis and repair, cylinder head diagnosis and repair, and engine block diagnosis and repair.

Offered: Fall, Spring, Summer.

AUT 122 Engine Remove and Install

3 cr. hrs. 7 periods (1 lec., 6 lab)

Techniques for heavy-line engine exchange. Includes personal and environmental safety, front wheel drive engine removal and installation, and rear wheel drive engine removal and installation.

Offered: Fall, Spring, Summer.

AUT 124 Automotive Diesel Engine Tune-Up

3 cr. hrs. 7 periods (1 lec., 6 lab)

Diagnosis, repair, and maintenance of mechanical and electronic diesel engine systems. Includes personal and environmental safety, general engine controls, computerized engine controls, electronic diesel injection, air and fuel induction systems, emissions control systems and electronic communication systems.

Offered: Fall, Spring, Summer.

AUT 126 Engine Performance and Driveability Troubleshooting

3 cr. hrs. 7 periods (1 lec., 6 lab)

Diagnosis and repair of On-board Diagnostics Generation One (OBDI) and Two (OBDII) systems. Includes personal and environmental safety, general engine, computerized engine controls, ignition system, fuel, air induction, and exhaust systems, emissions control systems, and engine related service.

Offered: Fall, Spring, Summer.

AUT 128 Automotive Electrical Fundamentals and Applications

3 cr. hrs. 7 periods (1 lec., 6 lab)

Principles and procedures of electrical diagnosis and repair. Includes electrical fundamentals and test equipment, electrical system, battery, starting system, charging system, lighting systems, instrumentation, horn and wiper/ washer, integrated circuits, and computerized control systems.

Offered: Fall, Spring, Summer.

AUT 129 Automotive Electrical Accessories

3 cr. hrs. 7 periods (1 lec., 6 lab)

Electrical circuit diagnosis, repair, and replacement. Includes electrical fundamentals and test equipment, accessory diagnosis and repair, tilt steering column repair, and electrical connectors and terminal replacement.

Offered: Fall, Spring, Summer.

AUT 132 Automotive Drivetrain Removal and Replacement

3 cr. hrs. 7 periods (1 lec., 6 lab)

Principles and procedures for automotive driveline component exchange. Includes personal and environmental safety, general drivetrain diagnosis, and diagnosis and repair of the clutch, automatic and manual transmissions and transaxle, drive axle and differential, and four-wheel drive components.

Offered: Fall, Spring.

AUT 133 Automatic Transmission/Transaxle Service and Rebuilding

3 cr. hrs. 7 periods (1 lec., 6 lab)

Principles and procedures for front- and rear-wheel drive automatic transmission overhaul. Includes personal and environmental safety, automatic transmission diagnosis and service, and transmission in-vehicle and off-vehicle repair.

Offered: Fall, Spring.

AUT 136 Automotive Manual Transmission and Driveline Service

3 cr. hrs. 7 periods (1 lec., 6 lab)

Principles and procedures for automotive driveline component overhaul. Includes personal and environmental safety, general drivetrain diagnosis, and diagnosis and repair of manual transmission and transaxle, drive shaft and half-shaft, universal and constant-velocity (CV) joint, drive axle and differential, limited slip differential, and four-wheel drive.

Offered: Fall, Spring, Summer.

AUT 138 Automotive Suspension Systems

3 cr. hrs. 7 periods (1 lec., 6 lab)

Principles and procedures for automotive suspension system service. Includes safety, adjustment and repair of front and rear suspension systems, and related suspension component service.

Offered: Fall, Spring, Summer.

AUT 139 Automotive Steering and Alignment Systems

3 cr. hrs. 7 periods (1 lec., 6 lab)

Principles and procedures for automotive steering and alignment systems service. Includes safety, manual and power steering systems, wheel alignment diagnosis, adjustment, and repair. Also includes wheel and tire diagnosis and repair.

Offered: Fall, Spring, Summer.

AUT 140 Automotive Brakes Diagnosis and Repair

3 cr. hrs. 7 periods (1 lec., 6 lab)

Diagnosis and repair of automotive hydraulic brake systems. Includes personal and environmental safety, hydraulic system diagnosis and repair, drum and disc brake diagnosis and repair, power assist units diagnosis and repair, wheel bearings, park brake, and brake electrical diagnosis and repair, and anti-lock brake systems (ABS) components and operation.

Offered: Fall, Spring, Summer.

AUT 142 Automotive Heating, Ventilation, and Air Conditioning

3 cr. hrs. 7 periods (1 lec., 6 lab)

Diagnosis and repair of automotive heating, ventilation, and air conditioning (HVAC) systems. Includes personal and environmental safety, HVAC systems components, air conditioning (AC) diagnosis and repair, refrigeration system component diagnosis and repair, heating and engine cooling systems diagnosis and repair, operating systems and controls diagnosis and repair, and refrigerant recovery, recycling, and handling.

Offered: Fall, Spring, Summer.

AUT 185 Automotive Shop Skills Application

.5-3 cr. hrs. 1.5-9 periods (1.5-9 lab)

Light line diagnosis and repair of daily use vehicles. Includes preparing repair orders, complaint procedures, researching service data, vehicle service and repair tasks, and shop maintenance. Also includes the industry standard of complaint, cause, and correction.

Information: Completion of an AUT prefix course in the same specialty area and approval of automotive department chair or instructor is required before enrolling in this course.

Offered: Fall, Spring.

Aviation Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

AVM 100 Aircraft Maintenance Fundamentals

6 cr. hrs. 12 periods (2 lec., 10 lab)

Introduction to the fundamental knowledge and skill requirements of an Airframe and Powerplant mechanic. Includes fasteners, safety and rigging, aircraft maintenance tools, aircraft types and construction, aircraft materials, theory of flight, and aircraft structures. Also includes powerplant types, aircraft assembly, engine theory, aircraft repair, aircraft reciprocating engine overhaul/repair, aircraft maintenance, aircraft systems and components, rigging flight controls, and jacking aircraft.

Information: AVM 100A and 100B together constitute AVM 100.

Offered: May not be offered this year, check class schedule.

AVM 100A Aircraft Maintenance Fundamentals: Module A

3 cr. hrs. 6 periods (1 lec., 5 lab)

Introduction to the fundamental knowledge and skill requirements of an Airframe and Powerplant mechanic. Includes fasteners, safety and rigging, aircraft maintenance tools, aircraft types and construction, aircraft materials, theory of flight, and aircraft structures.

Information: Constitutes approximately the first one-half of AVM 100. AVM 100A and 100B together constitute AVM 100.

Offered: Fall.

AVM 100B Aircraft Maintenance Fundamentals: Module B

3 cr. hrs. 6 periods (1 lec., 5 lab)

Introduction to the fundamental knowledge and skill requirements of an airframe and powerplant mechanic. Includes powerplant types, aircraft assembly, engine theory, aircraft repair, aircraft reciprocating engine overhaul/repair, aircraft maintenance, aircraft systems and components, rigging flight controls, and jacking aircraft.

Prerequisite(s): AVM 100A.

Information: Constitutes approximately the second one-half of AVM 100. AVM 100A and 100B together constitute AVM 100.

Offered: Spring.

AVM 101 Structural Repair I

4 cr. hrs. 8 periods (2 lec., 6 lab)

Structural repair of fuselage, wings and empennage groups. Includes safety, hand and machine cutting, and measuring tools. Also includes layout methods and structural repair processes.

Recommendation: Completion of mathematics assessment above MAT 082 before enrolling in this course.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall.

AVM 102 Structural Repair II

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of AVM 101. Includes safety, bend allowance, layout, fasteners, machine usage, patching techniques and structural repair techniques.

Prerequisite(s): AVM 101.

Offered: Fall.

AVM 105 Aircraft Sheetmetal Repair

5 cr. hrs. 8 periods (2 lec., 6 lab)

Principles and procedures for fuselage, wing, and empennage sheetmetal repair. Includes safety, hand tools, layout methods, materials, fasteners, repair techniques, parts fabrication, and corrosion prevention and control.

Offered: Fall.

AVM 110 Aircraft Blueprint Reading

3 cr. hrs. 3 periods (3 lec.)

Theory and application of aircraft blueprint reading. Includes types of aircraft drawings, measuring tools, drawing and layout equipment, types of views, projections, reference lines, drawing format, title block, manufacturing codes, symbology for fasteners, hardware, and materials. Also includes production of aircraft drawing, sketches, usage of aircraft schematics, graphs, charts, detail, assembly and exploded diagrams.

Offered: Fall, Spring.

AVM 114 Regulatory Requirements

3 cr. hrs. 3 periods (3 lec.)

Federal Aviation Administration (FAA) regulatory requirements. Includes certification of aircraft and components, FAA regulations for aircraft maintenance, FAA publications, manufacturing standards, inspection requirements, maintenance, mechanic certification, maintenance publications and forms, and aircraft logs.

Offered: Fall, Spring.

AVM 130 Aircraft Composite Repair

5 cr. hrs. 8 periods (2 lec., 6 lab)

Construction and repair processes using advanced composite materials. Includes reinforcing fibers, matrix and core materials, manufacturing of components, composite safety, curing wet layup and prepreg repairs, tools and equipment, and inspection and damage assessment.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall.

AVM 150 Structural Repair III

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of AVM 102. Includes repair publications, materials handling, cable fabrication, machining processes, protective coatings, hand forming and structural repair processes.

Prerequisite(s): AVM 102.

Offered: May not be offered this year, check class schedule.

AVM 151 Structural Repair IV

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of AVM 150. Includes locking fasteners, damage classifications, and structural repair processes.

Prerequisite(s): AVM 150.

Offered: May not be offered this year, check class schedule.

AVM 165 Aircraft Hardware and Fasteners

3 cr. hrs. 3 periods (3 lec.)

Aircraft structural repair hardware and fasteners. Includes specifications and standards, types, control linkages, tubing, hose and packings.

Offered: May not be offered this year, check class schedule.

AVM 180 General CFR 14 Part 65 Maintenance Review

7.75 cr. hrs. 8.75 periods (6.75 lec., 2 lab)

Review of the General CFR 14 Part 65 testing topics required for licensure attainment. Includes nine interrelated module topics covering basic electricity, aircraft drawings, weight and balance, fluid lines and fittings, materials and processes, ground operation and servicing, mathematics, maintenance forms and records, and basic physics. Also includes cleaning and corrosion control, maintenance publications, and mechanic privileges and limitations. Each module has key areas of concentration for general aviation mechanics.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. This course has an option to test out of any individual module by scoring eighty percent or greater.

Offered: Fall, Spring, Summer.

AVM 180A General CFR 14 Part 65 - Basic Electricity

1.5 cr. hrs. 1.7 periods (1.3 lec., .4 lab)

Review basic electricity associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes basic electricity, electron theory, direct and alternating currents, and measuring equipment. Also includes circuitry, antennas, and avionic suites and instruments.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 180B General CFR 14 Part 65 - Aircraft Drawings

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review aircraft drawings associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft drawings, manufactures' codes for hardware, fasteners, symbology, terms, and basic materials used in aircraft construction. Also includes aircraft reference points, blueprints, schematics, and graphs and charts.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 180C General CFR 14 Part 65 - Weight and Balance

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review weight and balance associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft weight and balance, documentation requirements, terminology, and variations in category. Also includes extremes, jacking, leveling, and calculating range and limitations.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 180D General CFR 14 Part 65 - Fluid Lines and Fittings

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review fluid lines and fittings associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes identification, MS and AN lines and fittings. Also includes rigid or flexible lines, high and low pressure applications, and temperature range.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 180E General CFR 14 Part 65 - Materials and Processes

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review materials and processes associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes materials and processes, cleaning and corrosion control, heat treatment, and non-destructive testing. Also includes manufacturing of aircraft using wood, aluminum, steel, and composites.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 180F General CFR 14 Part 65 - Ground Operations/Serviceing

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review ground operations and servicing associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes ground operations and servicing, human factors, aircraft towing, electrical, hangar, and fire safety. Also includes servicing aircraft, aircraft taxiing, hand signals, airport signs and meanings, and tower light gun signals.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 180G General CFR 14 Part 65 - Mathematics

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review mathematics associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes mathematical functions, whole numbers, fractions, decimals, percentages, and ratios. Also includes area and volumes, and algebraic equations.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 180H General CFR 14 Part 65 - Maintenance Forms/Records

1 cr. hrs. 1.1 periods (.9 lec., .2 lab)

Review maintenance forms and records associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes maintenance forms, records and publications, aviation mechanic privileges, and limitations. Also includes federal requirements for aircraft and maintenance personnel.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 180I General CFR 14 Part 65 Basic Physics

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review basic physics associated with General CFR 14 Part 65 testing topics for licensure attainment. Includes matter, energy, sound, fluid, heat, and atmospheric considerations. Also includes mechanical advantages, simple machines, aerodynamics and structural identification.

Information: AVM 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, and 180I comprise AVM 180. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 181 Airframe CFR 14 Part 65 Maintenance Review

7.75 cr. hrs. 8.75 periods (6.75 lec., 2 lab)

Review of the Airframe CFR 14 Part 65 testing topics required for licensure attainment. Includes ten module topics covering wood structure, aircraft covering and finishes, sheet metal and non-metallic structures (composites), assembly and rigging, airframe inspection, hydraulic and pneumatic power systems, cabin atmosphere control systems, aircraft fuel and electrical systems, and ice and rain control systems. Also includes fire protection systems, welding, aircraft instrument systems, communication and navigation systems, and position and warning systems. Each module has key areas of concentration for airframe aviation mechanics.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. This course has an option to test out of any individual module by scoring eighty percent or greater.

Offered: Fall, Spring, Summer.

AVM 181A Airframe CFR 14 Part 65 - Aircraft Coverings

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review wood structure and aircraft coverings associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft finishes, welding types and techniques, strength requirements, and wooden structure defects. Also includes fabric coverings and application, aircraft paint compatibilities, and chemicals used in the covering process.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. Offered; Fall, Spring, Summer.

AVM 181B Airframe CFR 14 Part 65 - Sheet Metal

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review sheet metal and non-metallic structures associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes rivet type, size and installation, layout fastener edge distance, and finishing materials for base. Also includes dimensional inspection of composite materials, drill size, and machining operations.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 181C Airframe CFR 14 Part 65 - Assembly and Rigging

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review assembly and rigging associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft landing gear systems, flight control balancing, and jacking and leveling. Also includes torqueing and safetying of hardware.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 181D Airframe CFR 14 Part 65 - Airframe Inspection

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review airframe inspection associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes parts conformity, continued airworthiness, and log books and records. Also includes technical publications, service manuals, and type certificate data sheets.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. Offered; Fall, Spring, Summer.

AVM 181E Airframe CFR 14 Part 65 - Hydraulic/Pneumatic System

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review hydraulic and pneumatic power systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes fluid lines and fitting identification, rigid and flexible line fabrication, pump and valve types, along with trouble shoot and repair. Also includes selection and use of MS and AN fittings, and fluid identification by use of labels color coding and symbologies.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 181F Airframe CFR 14 Part 65 - Cabin Atmosphere Control

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review cabin atmosphere control systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes flight physiology, oxygen systems, pressurization, and conditioning of passenger and crew environments. Also includes trouble shooting and repair.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 181G Airframe CFR 14 Part 65 - Aircraft Fuel Systems

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review aircraft fuel systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes fuel system types, fuel jettison, transfer, and indicating systems. Also includes trouble shooting and repair.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 181H Airframe CFR 14 Part 65 - Aircraft Electrical System

1 cr. hrs. 1.1 periods (.9 lec., .2 lab)

Review aircraft electrical systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes aircraft electrical, instrument, communication and navigation, and position and warning systems. Also includes power distribution, wire sizing and runs, and antennas, and indications.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 181I Airframe CFR 14 Part 65 - Ice and Rain Control

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review ice and rain control systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes environmental components for icing and rain systems detection, suppression, and removal.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 181J Airframe CFR 14 Part 65 - Fire Protection System

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review fire protection systems associated with Airframe CFR 14 Part 65 testing topics for licensure attainment. Includes components of detection and suppression systems, fire detection, and fire suspension. Also includes components of fire necessary for fire to be environmentally sustained.

Information: AVM 181A, 181B, 181C, 181D, 181E, 181F, 181G, 181H, 181I, and 181J comprise AVM 181. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 182 Powerplant CFR 14 Part 65 Maintenance Review

7.75 cr. hrs. 8.75 periods (6.75 lec., 2 lab)

Review of the Powerplant CFR 14 Part 65 testing topics required for licensure attainment. Includes eight interrelated module topics covering reciprocating engines, lubrication systems, turbine engines, engine inspection, engine instrument and electrical systems, ignition and starting systems, fuel metering systems, induction and engine airflow systems, engine cooling systems, and propellers. Also includes turbine powered auxiliary power units, engine exhaust and reverser systems, turbine engine lubrication systems, engine fire protection systems and engine fuel systems. Each module has key areas of concentration for powerplant aviation mechanics.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification. This course has an option to test out of any individual module by scoring eighty percent or greater.

Offered: Fall, Spring, Summer.

AVM 182A Powerplant CFR 14 Part 65 - Reciprocating Engines

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review reciprocating engines and lubrication systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes engine component identification and position indication, engine dimensional inspection and engine firing order by published technical data. Also includes engine designs and their applications.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 182B Powerplant CFR 14 Part 65 - Turbine Engines

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review turbine engines associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes turbine engines, turbine powered auxiliary power units, engine exhaust, and reverser systems. Also includes turbine engine lubrication systems and component identification and location.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 182C Powerplant CFR 14 Part 65 - Engine Inspection

.75 cr. hrs. .85 periods (.65 lec., .2 lab)

Review engine inspection associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes Non-Destructive Inspection (NDI), technical data, and conditional inspections.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 182D Powerplant CFR 14 Part 65 - Engine Instrument System

1 cr. hrs. 1.1 periods (.9 lec., .2 lab)

Review engine instrument and fire protection systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes inspection, check service and repair of aircraft reciprocating powerplant installations. Also includes engine fire detection and suppression systems.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 182E Powerplant CFR 14 Part 65 - Engine Electrical System

1.5 cr. hrs. 1.7 periods (1.3 lec., .4 lab)

Review engine electrical, ignition, and starting systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes magneto, starting and ignitions systems, and engine electrical instrumentation transmission. Also includes inspection criterion and duty cycles.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 182F Powerplant CFR 14 Part 65 - Fuel Metering System

1 cr. hrs. 1.1 periods (.9 lec., .2 lab)

Review fuel metering and engine fuel systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes fuel injection, fuel pumps, and stoichiometric ratio. Also includes carburetor types and functions.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 182G Powerplant CFR 14 Part 65 - Induction and Engine Airflow

1 cr. hrs. 1.1 periods (.9 lec., .2 lab)

Review induction and engine airflow systems associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes engine cooling system, inspection and maintenance, and cooling fins, hydraulics, and lubricants.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 182H Powerplant CFR 14 Part 65 - Propellers

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Review propellers associated with Powerplant CFR 14 Part 65 testing topics for licensure attainment. Includes fixed and constant speed propellers and hub components. Also includes inspection and maintenance.

Information: AVM 182A, 182B, 182C, 182D, 182E, 182F, 182G, and 182H, comprise AVM 182. Course is designed to enhance and promote accelerated learning in deficient materials pertinent to aviation maintenance. Taking this course does not supplement the experience or knowledge requirements set forth in CFR 14 subpart 65 requirements for airmen other than flight crew. Completion of course does not imply that the student will pass their independent written, oral, or practical tests required for certification.

Offered: Fall, Spring, Summer.

AVM 202 Aviation Safety

3 cr. hrs. 5 periods (1 lec., 4 lab)

Introduction to aviation safety procedures. Includes personal safety issues, human factors, accident avoidance, facility fire protection, hazardous materials safety and handling procedures, ramp procedures for movement, and securing and servicing of aircraft and ramp support equipment. Also includes forklift and scissor lift training.

Offered: Fall, Spring.

AVM 203 Structural Repair V

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation AVM 151. Includes jiggging, shoring and alignment, corrosion and heat treatment and structural repair processes.

Prerequisite(s): AVM 151.

Offered: May not be offered this year, check class schedule.

AVM 204 Structural Repair VI

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of AVM 203. Includes sealants and sealant applications, heat treatment, plastics and plastic repairs and structural repair processes.

Prerequisite(s): AVM 203.

Offered: May not be offered this year, check class schedule.

AVM 205 Motion Dynamics

3 cr. hrs. 5 periods (1 lec., 4 lab)

Principles of hydraulic power. Includes basic physics, basic mechanics, heat and fluid dynamics, fabrication and installation of fluid lines and fittings, laws of motion, basic aerodynamics, and aircraft nomenclature.

Offered: Fall, Spring.

AVM 206 Materials and Processes

3 cr. hrs. 5 periods (1 lec., 4 lab)

Introduction to non-metallic and metallic structural materials for comparison of their structural properties. Includes structural materials, metal processing, heat treatment, heat treatment of alloys or limited use metals, non-destructive testing/inspection, corrosion, corrosion types and factors, corrosion-prone areas, corrosion control: steel, aluminum, and limited use metals, processes and materials for corrosion control, aircraft cleaning, and aircraft cleaning agents.

Offered: Spring.

AVM 207 Weight and Balance

3 cr. hrs. 5 periods (1 lec., 4 lab)

Preparation of aircraft for weight and balance. Includes service and maintenance manuals, type certificate data sheets, standard weight and balance practices, weighing an aircraft, calculating center of gravity, and correction of out of balance conditions. Also includes addition and subtraction of equipment, equipment lists, flight manual updates, control surface balancing, identification and selection of standard hardware, installation and assembly of specialty hardware, and use of precision measuring equipment. Prerequisite: GTM 105V.

Offered: Spring.

AVM 208 Basic Electricity

5 cr. hrs. 8 periods (2 lec., 6 lab)

Introduction to basic aircraft electricity. Includes the study of matter, electron theory, current/electron flow, direct and alternating current, Ohm's Law, Kirchoff's laws, circuit elements, use of testing equipment, and electrical calculation and measurements. Also includes interpretation of schematics and other wiring diagrams, battery theory and maintenance, aircraft electrical systems, and introduction to communication and navigation radio systems.

Prerequisite: GTM 105V.

Offered: Fall, Spring.

AVM 209 Intermediate Electricity

5 cr. hrs. 8 periods (2 lec., 6 lab)

Intermediate electricity includes the study of aircraft airframe electrical components as well as airframe and powerplant electrical systems. Includes electric motors, generators and generator controls, alternators, inverters and related controls, power distribution systems, design and maintenance of aircraft electrical systems, digital electronics, analog electronics, communication and navigation systems, communications, weather warning systems, and electric instruments and autoflight systems.

Prerequisite(s): AVM 208.

Offered: Fall, Spring.

AVM 210 Advanced Composite Aircraft Repair I

4 cr. hrs. 4 periods (4 lec.)

Theory and application of composite materials utilized in aircraft construction. Includes material types, handling and storage, manufacturing techniques, design criteria, safety, tool and equipment usage, damage and repair assessment, repair techniques, fastening systems, and documentation. Also includes a heavy emphasis on repair performance utilizing the Structural Repair Manuals for composite monolithic and sandwich core structures.

Corequisite(s): AVM 210LB

Offered: May not be offered this year, check class schedule.

AVM 210LB Advanced Composite Aircraft Repair I Lab

1 cr. hrs. 3 periods (3 lab)

Laboratory for AVM 210. Includes theory and application of composite materials utilized in aircraft construction. Also includes material types, handling and storage, manufacturing techniques, design criteria, safety, tool and equipment usage, damage and repair assessment, repair techniques, fastening systems, and documentation. Also includes a heavy emphasis on repair performance utilizing the Structural Repair Manuals for composite monolithic and sandwich core structures.

Corequisite(s): AVM 210

Offered: May not be offered this year, check class schedule.

AVM 211 Alternate Structures

5 cr. hrs. 8 periods (2 lec., 6 lab)

Aircraft structural fabrication using wood, tube steel and fabric processes and techniques. Includes structural types, wood and welded tube steel fabrication methods, welding of typical metals used in aircraft construction, fabric covering processes, inspection and maintenance typical repair procedures, and aircraft finishings.

Offered: Fall, Spring.

AVM 218 Airframe Rigging and Landing Gear Systems

3 cr. hrs. 5 periods (1 lec., 4 lab)

Identification, assembly, alignment, balancing and rigging of aircraft rigging and landing gear systems. Includes aircraft nomenclature, characteristics of flight, flight control system, airframe assembly, rigging, structural alignments, control surface balancing, landing gear, shock struts, landing gear retraction, wheel alignment and steering, brake system servicing, brake assemblies, wheels, tires, warning systems, and anti-skid system.

Offered: Fall, Spring.

AVM 219 Airframe Inspections

3 cr. hrs. 5 periods (1 lec., 4 lab)

Conformity Inspections of airframes. Includes inspections of incoming spare parts and stock items, airframe and equipment conformity inspections, airframe and systems airworthiness and conformity inspections, conformity inspections of installed equipment, annual and 100-hour inspections of small aircraft, including research of all pertinent inspection documents, service or maintenance manuals, type certificate data sheets, airworthiness directives, service bulletins and additional instructions for continued airworthiness, inspection procedures for large aircraft work orders, non-routine job cards used by local aviation maintenance companies.

Prerequisite(s): AVM 114.

Offered: Spring.

AVM 223 Hydraulic and Pneumatic Power

3 cr. hrs. 5 periods (1 lec., 4 lab)

Hydraulic and pneumatic system components. Includes system operating principles, fluids, pressures, hydraulic powered flight controls, landing gear, braking and accessory power systems, pneumatically powered or assisted accessories, and system and component inspection servicing and repairs.

Offered: Fall, Spring.

AVM 224 Atmospheric Controls

3 cr. hrs. 5 periods (1 lec., 4 lab)

Atmospheric controls and its elements that are of concern to flight. Includes ice and rain detection and control systems, types of operations and maintenance, physiological requirements for flight crews and passengers and the human support systems, oxygen systems, cabin pressurization system and their operations, and safety and maintenance requirements.

Offered: Spring.

AVM 225 Fire, Ice, Rain, and Fuel Systems

3 cr. hrs. 5 periods (1 lec., 4 lab)

Theory and application of fire, ice, rain and fuel systems. Includes fire detection terms, extinguishing and protection systems, smoke detection, fire warning, fire extinguishing system components used, how systems function, inspection testing and maintenance, ice and rain protection terms, formation and conditions for icing of aircraft, ice and rain detection, protection systems components, functions, inspection and maintenance, fuel system terms, safety system requirements, fuel tank types and construction, indicating, fueling, and defueling inspection and maintenance.

Offered: Fall, Spring.

AVM 226 Engine Electrical

5 cr. hrs. 8 periods (2 lec., 6 lab)

Inspection, repair, and modification of engine electrical systems. Includes magneto(s) (components, tooling, wiring, and drives), ignition switches, ignition harness, ignition booster system, spark plugs, engine ignition analyzers, turbine engine (ignition transformers and igniter plugs), engine electrical controls (switches, fuses and circuit breaker, circuits, wiring, installation, and engine bulkhead), and technical data manuals and catalogs.

Prerequisite(s): AVM 208.

Offered: Fall, Spring.

AVM 227 Engine Air Flow Systems

3 cr. hrs. 5 periods (1 lec., 4 lab)

Fundamentals of engine air flow systems. Includes reciprocating engine induction systems, alternate induction air systems, induction systems maintenance, superchargers, turbochargers, turbo compound systems, reciprocating engine exhaust systems, exhaust subsystems, exhaust system maintenance, reciprocating engine cooling, turbine engine induction systems, turbine engine cooling, turbine engine exhaust systems, turbine engine exhaust systems maintenance, and turbine engine airflow subsystems.

Offered: Fall, Spring.

AVM 228 Aircraft Propellers

3 cr. hrs. 5 periods (1 lec., 4 lab)

Basics of aircraft propellers. Includes propeller theory, nomenclature, types, construction, and installation and maintenance. Also includes constant speed systems, feathering systems, reversing systems, icing systems, synchronizing systems, and unducted fans.

Offered: Spring.

AVM 229 Engine Support Systems

3 cr. hrs. 5 periods (1 lec., 4 lab)

Theory and application of support systems for gas turbine engines. Includes fire protection, fire detection systems, fire extinguishing agents and systems, and fire detection and extinguishing system maintenance. Also includes turbine engine pneumatic systems, pneumatic starting systems, thrust reversers, auxiliary power units, turbine engine removal and installation, and engine storage and transport.

Offered: Spring.

AVM 231 Engine Principles, Monitoring and Inspection

5 cr. hrs. 8 periods (2 lec., 6 lab)

Principles, monitoring, and inspection of engines. Includes theory and construction of powerplants, requirements, types of engines, reciprocating engine design and construction, radial engine design and construction, reciprocating engine operating principles, engine power and efficiencies, turbine engine construction, turbine engine sub-assemblies, turbo prop engines, turbine engine operation principles, engine instrumentation, instrument principles of operation, maintenance of instruments and systems, and engine inspection requirements.

Offered: Fall, Spring.

AVM 232 Reciprocating Engine Overhaul

5 cr. hrs. 8 periods (2 lec., 6 lab)

Basic aircraft reciprocating engine overhaul. Includes engine components, wrist pins, connection rods, crankshafts, case, cam shafts, lifters, valves, push rods and tubes, rocker assemblies, accessories, lubrication, overhaul options overhaul credentials, overhaul procedures, reassembly after overhaul, engine installations, engine break-in, and test cell procedures.

Offered: Spring.

AVM 233 Turbine Engines

5 cr. hrs. 8 periods (2 lec., 6 lab)

Basic gas turbine engine and turbo propeller component makeup and repair. Includes inspection, servicing, and repairs performed on engine components: compressor, diffuser, combustion, accessory drive, and lubricating system. Also includes a reassembly overhaul.

Offered: Spring.

AVM 234 Engine Fuel Metering and Operation

5 cr. hrs. 8 periods (2 lec., 6 lab)

Fundamentals of aircraft fuel systems. Includes fuel metering theory and requirements, aviation fuels, float type carburetion, float carburetor maintenance and installation, and pressure carburetor maintenance and installation. Also includes fuel injection systems, Bendix fuel injection and maintenance, and Teledyne Continental Motors (TCM) fuel injection and maintenance. Also includes fuel metering system components and maintenance, turbine engine fuel systems components and maintenance, jet fuel controls; and reciprocating, turbine, and turbo propeller engine operations.

Offered: May not be offered this year, check class schedule.

AVM 260 Advanced Composite Aircraft Repair II

1 cr. hrs. 1 periods (1 lec.)

Theory and application of composite and bonded metal structures utilized in aircraft construction. Includes repair methods selection, source documents, repair methods and design criteria, bonded metal repairs, tank and non-tank processing, priming, and environmental considerations. Also includes a heavy emphasis on repair performance utilizing the Structural Repair Manuals for composite monolithic and sandwich core, and bonded metal structures.

Prerequisite(s): AVM 210/210LB.

Corequisite(s): AVM 260LB

Offered: May not be offered this year, check class schedule.

AVM 260LB Advanced Composite Aircraft Repair II Lab

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of AVM 260.

Prerequisite(s): AVM 210/210LB.

Corequisite(s): AVM 260

Offered: May not be offered this year, check class schedule.

Avionics Technician Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ATT 100 Basic Electricity for Avionics

3 cr. hrs. 3 periods (3 lec.)

Basic electricity for Avionics. Includes the study of matter, electron theory, current/electron flow, direct and alternating current, Ohm's Law, Kirchoff's laws, circuit elements, use of testing equipment, and electrical calculation and measurements. Also includes interpretation of schematics and other wiring diagrams, battery theory and maintenance, aircraft electrical systems, and introduction of solid state components.

Prerequisite(s): GTM 105V.

Offered: Fall.

ATT 101 Avionics Familiarization

3 cr. hrs. 3 periods (3 lec.)

Overview of the evolution of modern avionics. Includes the role and responsibilities of the avionics technician; the classification and requirements of airports, airspace, and atmospheric environments; and types of avionics equipment used today. Also includes instrument layouts, crew cabin layouts, and advisory circulars and regulations pertaining to operation and management.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: Fall.

ATT 102 Aircraft Electrical Systems

3 cr. hrs. 3 periods (3 lec.)

Overview of aircraft electrical systems, including AC and DC power generation and distribution for small general aviation (GA), corporate, and commercial airline transport aircraft. Includes electrical schematics, manuals, and diagrams. Also includes aircraft system power requirements for avionics; fuel and flight management; cabin atmospheric control; landing gear and flight controls; load; warning systems; cabin lighting; and entertainment systems.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: Fall.

ATT 103 Basics of Avionics Installation

3 cr. hrs. 4 periods (2 lec., 2 lab)

Concepts, techniques, and skills used to install electronic and avionics equipment. Includes avionics support structure installation and fabrication; instrument mounting; terminal installation; cutting, sizing, marking, bundling, and anchoring techniques and practices; handling precautions for sensitive devices; and selecting proper equipment and tools. Also includes a review of electrical equipment bays, wiring diagrams, installation drawings, circuit protection devices, lighting processes, and regulatory requirements.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: Spring.

ATT 104 Operating Systems I, Communication and Navigation

4 cr. hrs. 5 periods (3 lec., 2 lab)

Topical discussion on communication and navigation systems, schematic usage, special tooling and equipment, switching, circuit protection, and instrument panel features. Includes standard wiring practices of single and multiple flight instrumentation sources, location reporting equipment, and essential standard avionics flight devices.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: Spring.

ATT 201 Operating Systems II, GPS Navigation and Auto Pilot

3 cr. hrs. 3 periods (3 lec.)

Principles of Global Positioning Systems (GPS) and autopilot systems operation and use by flight crews. Includes installation planning for electrical system requirements, typical mounting, wiring methods, connectors, and antenna installation. Also includes pre- and post-installation verification of system integration, functional testing, and troubleshooting on GPS and autopilot systems.

Prerequisite(s): ATT 104.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: May not be offered this year, check class schedule.

ATT 202 GPS Navigation and Auto Pilot Installation

5 cr. hrs. 7 periods (3 lec., 4 lab)

Principles of Global Positioning Systems (GPS) and autopilot systems installation. Includes substantial application of systems, processes, and installations introduced in ATT201, such as installation planning for electrical system requirements, typical mounting, wiring methods, connectors, antenna installation, and operations and use by flight crews. Also includes pre- and post-installation verification of system integration, functional testing, and troubleshooting on GPS and autopilot systems. Also includes an introduction to the installation of engine indicating instruments and their relationship to the instrument console.

Prerequisite(s): ATT 104 and 201.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: May not be offered this year, check class schedule.

ATT 203 Avionics Test Equipment

4 cr. hrs. 6 periods (2 lec., 4 lab)

Overview of the evolution of modern avionics systems, test equipment, and operation of and training on test equipment. Includes functional testing of pitot static, transponder and altitude reporting units, Very High Frequency Omni-directional Range (VOR), Global Positioning Systems (GPS), and compass navigation devices installed in aircraft or functioning mockups. Also includes special tooling and test apparatuses, the handling of aircraft, and safety for personnel and equipment undergoing testing.

Prerequisite(s): ATT 104.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: May not be offered this year, check class schedule.

ATT 204 Glass Cockpit Installer

5 cr. hrs. 7 periods (3 lec., 4 lab)

Installation of glass cockpit systems. Includes panel installation, functional checks, troubleshooting, installation and handling practices for Multifunction Display Units (MFD), Primary Flight Displays (PFD), and Engine Indicating and Crew Alerting Systems (EICAS). Also includes glass cockpit upgrade training, to include the removal of older "steam" gauges and various other indication instruments and replacement with modern glass cockpit indicating systems.

Prerequisite(s): ATT 103 and 104.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: May not be offered this year, check class schedule.

ATT 205 Operating Systems III, Infrared and Weather Radar

3 cr. hrs. 3 periods (3 lec.)

Principles of infrared and weather radar systems operation and use by flight crews. Includes installation planning, electrical system requirements, typical mounting, wiring methods, connectors, and antenna installation. Also includes system integration, functional testing of Enhanced Vision Systems (EVS), Weather (Wx) Radar, and radio altimeter systems. Also includes safety training and the operation, installation, and troubleshooting of EVS systems.

Prerequisite(s): ATT 101 and 102.

Information: Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: May not be offered this year, check class schedule.

ATT 206 Infrared and Weather Radar Installation

5 cr. hrs. 7 periods (3 lec., 4 lab)

Installation of weather radar systems, radio altimeter systems, and Enhanced Vision Systems (EVS). Includes schematic use, special tooling and equipment, switching, circuit protection, and instrument panel features for modification for installation. Also includes standard wiring and installation of stand-alone and integrated avionic devices and multifunctional display equipment. Also includes a mandatory requirement that all installed equipment be tested for functionality after installation.

Prerequisite(s): ATT 103 and 205.

Information: Includes an emphasis on system operation, testing, and troubleshooting techniques demonstrated by technicians trained on the aircraft systems. Additional self-paced independent course study materials are required for non-certified Airframe and Powerplant students.

Offered: Fall.

Behavioral Health Services

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

BHS 132 Communication Skills in Behavioral Health Services

3 cr. hrs. 3 periods (3 lec.)

Development of communication skills important in establishing and maintaining effective helping relationships. Includes an emphasis on building rapport, improving effective listening skills, establishing trust, and delivering and receiving appropriate feedback. Also includes an overview of the helping process and the professional and physical environments in which counseling occurs.

Offered: May not be offered this year, check class schedule.

BHS 154 Behavioral Health Lab and Safety Protocol

3 cr. hrs. 4 periods (2.5 lec., 1.5 lab)

Introduction to the basic clinical procedures and safety precautions performed by a behavioral health specialist on site in a behavioral health setting. Includes facility, environmental, and patient safety; clinical and observational procedures such as taking vital signs and blood glucose monitoring (point of care testing); and observation and documentation of patients' behavior and physical condition. Also includes personal patient comfort and care, as well as basic medical terminology used in a behavioral healthcare clinical setting.

Prerequisite(s): SSE 128.

Offered: May not be offered this year, check class schedule.

BHS 172 Clinical Behaviors

3 cr. hrs. 3 periods (3 lec.)

Clinical Behaviors Overview of primary clinical behaviors encountered by behavioral health professionals, including substance use, violence and abuse, and grief and bereavement. Includes the spectrum of substance use issues, such as classification of drugs, theories of addiction, cultural perspectives, and treatment interventions. Also includes historical and contemporary causes of domestic violence, community resources, treatment centers and support groups, cultural awareness, and special populations at risk. Also includes techniques, strategies and treatment modalities for working with the bereaved and those affected by traumatic loss.

Offered: May not be offered this year, check class schedule.

BHS 189LC Behavioral Health Clinical - Basic

1 cr. hrs. 2 periods (.75 lec., 1.25 lab)

Provides students with hands on experience at a behavioral health organization. Includes an orientation to working in the behavioral health field; observation of professionals working directly with individuals receiving behavioral health care; professionalism in the behavioral health field; and application of the principles of care giving through hands on experience. Also includes direction in case management; patient relations; case documentation; and safety, clinical, and regulatory protocol.

Prerequisite(s): SSE 128.

Offered: May not be offered this year, check class schedule.

BHS 250 Case Documentation

2 cr. hrs. 2 periods (2 lec.)

Observation and documentation techniques necessary to maintain clinical records in a variety of community behavioral health settings. Includes appropriate terminology, technical forms, and the application of legal issues in case reports. Also includes an introduction to the types of clinical cases that behavioral health professionals encounter during the continuum of care, such as substance use and mental health issues.

Prerequisite(s): CSA 100, SSE 128, BHS 132 and 154.

Offered: May not be offered this year, check class schedule.

Biology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

BIO 056IN Introductory Biology for Pima Nursing

3 cr. hrs. 7 periods (2 lec., 5 lab)

Introduction to biology for nursing students. Includes specific strategies for biology success, scientific method, scientific measurement, light microscopy, categories of biomolecules, cell membranes and organelles, cellular metabolism, cellular reproduction, basic genetics, and human tissues.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Information: This course is designed for students who need to improve strategies to increase their success in college science courses and for students who require extensive development in the vocabulary and basic principles of science and biology.

Information: This course is only for students pursuing a Pima Nursing degree (please check with a nursing advisor.)

Offered: Fall, Spring.

BIO 100HC Biology Concepts: Honors

4 cr. hrs. 6 periods (3 lec., 3 lab)

Basic principles and concepts of biology. Includes methods of scientific inquiry, cell structure, chemistry, metabolism, reproduction, genetics, molecular biology, evolution, ecology, and current issues in biology. Also includes additional Honors content.

Information: IN designates an integrated lecture/lab combination.

Information: Must qualify for Honors program and obtain instructor or advisor/counselor approval to register for this course.

Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; a publishable quality, peer reviewed paper or project in a format appropriate for the discipline; presentation of research, in class or to a wider audience.

Offered: Fall, Spring, Summer.

BIO 100IN Biology Concepts

4 cr. hrs. 6 periods (3 lec., 3 lab)

Basic principles and concepts of biology. Includes methods of scientific inquiry, cell structure and chemistry, metabolism, reproduction, genetics, molecular biology evolution, and ecology and current issues in biology.

Information: IN designates an integrated lecture/lab combination.

Offered: Fall, Spring, Summer.

BIO 104IN Animal Sexual Behavior

4 cr. hrs. 6 periods (3 lec., 3 lab)

Exploration of animal mating patterns via behavioral research. Includes animal behavior, evolutionary concepts, genetics of behavior, maximizing reproduction, and student research projects.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: May not be offered this year, check class schedule.

BIO 105HC Environmental Biology: Honors

4 cr. hrs. 6 periods (3 lec., 3 lab)

Fundamentals of ecology and their relevance to human impact on natural ecosystems. Includes ecosystem structure and function, population dynamics, and human impacts on air, water, land, and biodiversity. Also includes additional Honors content.

Information: IN designates an integrated lecture/lab combination.

Information: Must qualify for Honors program and obtain instructor or advisor/counselor approval to register for this course.

Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; a publishable quality, peer reviewed paper or project in a format appropriate for the discipline: presentation of research, in class or to a wider audience.

Offered: May not be offered this year, check class schedule.

BIO 105IN Environmental Biology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Fundamentals of ecology and their relevance to human impact on natural ecosystems. Includes ecosystem structure and function, population dynamics, and human impacts on air, water, land, and biodiversity.

Information: IN designates an integrated lecture/lab combination.

Offered: Fall, Spring, Summer.

BIO 108IN Plants, People and Society

4 cr. hrs. 6 periods (3 lec., 3 lab)

Past, present and future roles of plants in our lives. Includes basic principles of botany, modern, historical and regional perspectives on human use of plants, and present and future practices in plant cultivation.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

BIO 109IN Natural History of the Southwest

4 cr. hrs. 6 periods (3 lec., 3 lab)

Study of the common plants and animals of the Southwest. Includes their identification, adaptation, behavior and ecology. Also includes physical geography and geological principles of the region.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

BIO 110 Techniques and Mathematics for the Laboratory

2 cr. hrs. 2 periods (2 lec.)

Introduction to the use of proper techniques and mathematical calculations in a laboratory setting. Includes safety, laboratory mathematics, and ancillary equipment and instruments.

Prerequisite(s): MAT 092 (or required score on assessment test), and CHM 080 or 130 (or placement into CHM 151).

Information: Prerequisite(s) may be waived with consent of instructor.

Information: Same as MLT 110.

Offered: May not be offered this year, check class schedule.

BIO 112 Bioscience Laboratory Fundamentals

3 cr. hrs. 7 periods (1 lec., 6 lab)

Preparation of students to become lab technicians by introduction of fundamental skills, knowledge, and attitudes essential to any lab professional. Includes lab safety, documentation, quality control, lab math, validation and verification of results. Also includes understanding government regulations, biological solution preparation, assays, biological separations, and growing cells.

Prerequisite(s): MAT 092 (or required score on assessment test), and CHM 130IN (or placement into CHM 151).

Information: Successful completion of High School Chemistry with a grade of C or higher may waive the Chemistry prerequisite for this course; see faculty or advisor for information.

Offered: Fall.

BIO 115IN Wildlife of North America

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the mammals, birds, fish, reptiles, amphibians, and selected invertebrates of North America. Includes habitats, wildlife interrelationships, population dynamics, and discussion of national, state, and private wildlife agencies. Also includes a laboratory emphasis on native Arizona species.

Information: IN is the integrated version of the course with lecture and lab taught simultaneously.

Offered: Fall, Spring.

BIO 121IN Current Issues in Human Biology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Fundamental principles of human biology emphasizing the evolutionary processes that create human morphological and behavioral diversity. Includes an in-depth study of biological differences existing within and between human populations, focusing on genetic mechanisms and adaptive strategies. Topics of instructor and student interest will be examined through the lens of human evolutionary biology.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: May not be offered this year, check class schedule.

BIO 127HC Human Nutrition and Biology: Honors

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles of nutrition presented in the context of human biology. Includes chemistry, digestion, absorption, and metabolism of nutrients. Also includes biological and nutritional perspectives on various health issues such as cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis, including genetic and epigenetic effects. Also covers analysis of scientific studies relating to nutrition. Also includes additional Honors content.

Information: Same as FSN 127HC.

Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

Honors Content: Intensive research using the highest standards and best practices for the discipline; a significant number/variety of readings of both primary and secondary sources; a "publishable quality"; peer reviewed paper or project in format appropriate for this discipline; and presentation of research, in class or to a wider audience.

Offered: Fall, Spring.

BIO 127IN Human Nutrition and Biology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles of nutrition presented in the context of human biology. Includes chemistry, digestion, absorption, and metabolism of nutrients. Also includes biological and nutritional perspectives on various health issues such as cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis, including genetic and epigenetic effects. Also covers analysis of scientific studies relating to nutrition.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously. Same as FSN 127IN.

Offered: Fall, Spring, Summer.

BIO 135IN Genetics, Biotechnology and Human Affairs

4 cr. hrs. 6 periods (3 lec., 3 lab)

An introduction to human genetics and biotechnology including career exploration, history and applications of recombinant DNA technology, the human genome project, and laboratory safe practices. Includes introduction to biotechnology, fundamentals of cell biology and genetics, applications of biotechnology, bioethics, careers in biotechnology, and laboratory techniques.

Recommendation: Completion of high school chemistry and high school biology before enrolling in this course.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: May not be offered this year, check class schedule.

BIO 156IN Intro Biology Allied Health

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introductory Biology for Allied Health Introduction to biology for the health professions. Includes principles of science, scientific measurement and laboratory techniques, chemistry of life, cell anatomy and physiology, cellular reproduction, patterns of inheritances and human tissues.

Recommendation: Completion of CHM 130 before enrolling in this course.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

BIO 157 Basic Histology for Anatomy and Physiology

1 cr. hrs. 1 periods (1 lec.)

Structure and function of tissues found in the human body. Includes epithelial, connective, muscle, and nerve tissues.

Recommendation: Prior completion of or concurrent enrollment in BIO 181IN is recommended.

Information: Completion of this course and BIO 181IN with grades of C or better will enable a student to enroll in BIO 201IN.

Offered: Fall, Spring, Summer.

BIO 160IN Introduction to Human Anatomy and Physiology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Structure and dynamics of the human body. Includes foundations such as chemical, cellular and tissue levels of organization. Also includes major structures and functions of the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

BIO 181HC General Biology I (Majors): Honors

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles of structure and function of living things at the molecular and cellular levels of organization. Includes introduction to the scientific process, scientific measurements and laboratory techniques, chemistry of cells, organization of cells, metabolism, cell communication, patterns of cell division, patterns of inheritance, nucleic acids, gene expression, and biotechnology. Also includes additional Honors content.

Prerequisite(s): With a grade of C or better: CHM 151, REA 112 (or assessment above this level) and WRT 090 or 096 (or assessment into WRT 101).

Recommendation: BIO 100IN or BIO 156IN is recommended for students who did not complete one year of general high school biology with a grade of B or better.

Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

Honors Content: Intensive research using the highest standards and best practices for the discipline; a significant number/variety of readings of both primary and secondary sources; a "publishable quality"; peer reviewed paper or project in format appropriate for this discipline; and presentation of research, in class or to a wider audience.

Offered: Fall, Spring.

BIO 181IN General Biology I: (Majors)

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles of structure and function of living things at the molecular and cellular levels of organization. Includes introduction to the scientific process, scientific measurements and laboratory techniques, chemistry of cells, organization of cells, metabolism, cell communication, patterns of cell division, patterns of inheritance, nucleic acids, gene expression, and biotechnology.

Prerequisite(s): With a grade of C or better: CHM 151

Recommendation: WRT 090 or 096 or assessment into WRT 101.

Recommendation: BIO 100IN or BIO 156IN is recommended for students who did not complete one year of general high school biology with a grade of B or better.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

BIO 182HC General Biology II (Majors): Honors

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles of living things at the levels of organism, population, community, and ecosystem. Includes evolution of life, classification of organisms, survival strategies, interactions between organisms and with their environment, ecosystem structure, and human impacts upon the biosphere. Also includes additional Honors content.

Recommendation: Completion of BIO 181 before enrolling in this course.

Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

Honors Content: Intensive research using the highest standards and best practices for the discipline; a significant number/variety of readings of both primary and secondary sources; a "publishable quality"; peer reviewed paper or project in format appropriate for this discipline; and presentation of research, in class or to a wider audience.

Offered: Fall, Spring.

BIO 182IN General Biology II: (Majors)

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles of living things at the levels of organism, population, community, and ecosystem. Includes evolution of life, classification of organisms, survival strategies, interactions between organisms and with their environment, ecosystem structure, and human impacts upon the biosphere.

Recommendation: Completion of BIO 181IN before enrolling in this course.

Information: IN designates an integrated lecture/lab combination.

Offered: Fall, Spring, Summer.

BIO 183IN Marine Biology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Survey of marine environments and their biotic communities. Includes scientific measurements and laboratory techniques, principles of marine science, life in the marine environment, structure and function of marine ecosystems, and humans and the sea. Also includes an emphasis on the natural history of marine organisms.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

BIO 184IN Plant Biology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Study of principles and processes in plant biology with emphasis on vascular plants. Includes plant structure, plant physiology and development, genetics, and evolution, and ecology.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall.

BIO 201IH Human Anatomy, Physiology and Histology

5 cr. hrs. 7 periods (4 lec., 3 lab)

Structure and function of the body. Includes introduction to the scientific process, scientific measurements, laboratory techniques such as microscope use, levels of organization, chemistry as applied to physiology, cell biology, gene regulation, homeostasis, anatomical terms, integumentary system, skeletal system and articulations, muscular and nervous systems, and special senses, as well as histology of these systems.

Prerequisite(s): REA 091 with a C or better or placement into REA 112 or higher or consent of instructor.

Information: The IH suffix designates an integrated version of the course with the lecture and lab taught simultaneously. This course combines elements from BIO 156IN and meets the prerequisite for BIO 202IN.

Offered: Fall, Spring, Summer.

BIO 201IN Human Anatomy and Physiology I

4 cr. hrs. 6 periods (3 lec., 3 lab)

Structure and function of the body. Includes levels of organization, homeostasis and disease, anatomical terms, integumentary system, skeletal system and articulations, muscular and nervous systems, autonomic nervous system, and special senses.

Prerequisite(s): Each with a grade of C or better: BIO 156IN, or 056IN, or BIO 157 and BIO 181IN, or completion of a 200 level (or higher) Human Anatomy and Physiology course; or a passing grade on the Biology Assessment Exam.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

BIO 202IN Human Anatomy and Physiology II

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of BIO 201IN/IH. Includes the structure and function of the endocrine cardiovascular, lymphatic/immune, respiratory, digestive, urinary, and reproductive systems.

Prerequisite(s): BIO 201IN or 201IH with a C or better.

Information: IN designates an integrated lecture/lab combination. Offer: Fall, Spring, Summer.

BIO 203 Anatomy and Physiology Review for Health Related Professions

1.25 cr. hrs. 1.25 periods (1.25 lec.)

Review of human body systems which includes clinical application of human anatomy and physiology. Includes the integumentary, skeletal, muscular, nervous, endocrine, circulatory, immune, respiratory, digestive, urinary/renal, and reproductive systems.

Prerequisite(s): BIO 201IN and 202IN with a C or better.

Recommendation: For students who are preparing to take board exams in the health related professions, or those who wish to review anatomy and physiology.

Information: May be taken 3 times for a maximum of 3.75 credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

BIO 205IN Microbiology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Overview of the microbial world (bacteria, protozoa, fungi, and viruses). Includes microbial cell structure and function; diversity of microorganisms; growth; metabolism; microbial genetics; the identification of microorganisms; and the role of microorganisms in disease and immunity. Also includes principles of microbial control; antibiotic resistance; epidemiology; and pathogenesis; as well as laboratory exercises to provide firsthand experience with the organisms and processes discussed in lecture.

Prerequisite(s): BIO 156IN or 181IN or 201IH or required score on the Biology assessment test.

Recommendation: Completion of CHM 130 or equivalent.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

BIO 206 Biotechnology Instrumentation I

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles and methodologies of recombinant DNA technology. Includes preparation of solutions and growth media in a laboratory setting, and genetic analyses.

Offered: Fall.

BIO 207 Biotechnology Instrumentation II

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles and methodologies of protein expression, isolation, identification and purification. Includes immunological and cell culture techniques.

Information: Consent of instructor required before enrolling in this course.

Offered: Spring.

BIO 218 Human Pathophysiology

4 cr. hrs. 4 periods (4 lec.)

Pathophysiological processes in humans and the development of clinical reasoning skills that distinguish between normal physiology and the physiology of disease or injury. Includes the etiology, clinical presentation, and appropriate treatment of selected disease processes. Also includes the pathophysiology of the hematological, cardiovascular, pulmonary, renal, endocrine, gastrointestinal, pancreatic, neurologic, musculoskeletal and reproductive systems.

Prerequisite(s): BIO 201IN, 202IN, and 205IN with a grade of C or better.

Information: This course is a prerequisite for the concurrent Associate Degree/Baccalaureate Degree Nursing program through Pima Community College and Northern Arizona University.

Offered: Spring.

BIO 250 Biomedical Ethics

3 cr. hrs. 3 periods (3 lec.)

Introduction to the nature and scope of decision making in public health, medicine and health care, as it relates to bioethical issues. Includes overview of dilemmas in bioethics, legal, social and ethical issues in human genetics, the beginning of life, and the end of life. Also includes life and death decisions, human organ transplantation, and regulations of human research.

Offered: May not be offered this year, check class schedule.

BIO 295LB Independent Research in Biology

1-4 cr. hrs. 3-12 periods (3-12 lab)

Experience in scientific laboratory or field research. Specific content to be determined by student and instructor.

Information: One semester of biology and consent of instructor are required before enrolling in this course.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

BIO 296 Special Projects in Biology

1-4 cr. hrs. 3-12 periods (3-12 lab)

Exploration of special interest areas. Content to be determined by student and facilitator/instructor.

Information: One year of biology is required before enrolling in this course.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

BIO 299 Co-op: Biotechnology

1 cr. hrs. 1 periods (1 lec.)

Principles of job success. Includes biotechnology workplace skills; communication; time and energy management; stress and its management; careers; placing yourself on the job market; principles, techniques, and practices in the career field; and problems in the work situation.

Prerequisite(s): BIO 206 and 207 with a grade of B or better.

Corequisite(s): BIO 299WK

Recommendation: Completion of CHM 236 before enrolling in this course.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

BIO 299WK Co-op Work: Biotechnology

3 cr. hrs. 15 periods (15 lab)

A supervised cooperative work program for students in the biotechnology industry or academic research. Includes teacher-coordinators working with students and their supervisors in industry or research. Also includes developing competency and improved self-confidence in the biotechnology workplace.

Prerequisite(s): BIO 206 and 207 with a grade of B or better.

Corequisite(s): BIO 299

Recommendation: Completion of CHM 236 before enrolling in this course.

Information: Consent of instructor is required before enrolling in this course.

Information: This may be paid or unpaid experience.

Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

Building and Construction Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

BCT 100 Professionalism in Service for BCT

1 cr. hrs. 1 periods (1 lec.)

Procedures in business and customer service. Includes an introduction to professionalism, self-evaluation, service routine, addressing dissatisfied customers, and problem situations.

Offered: Fall, Spring, Summer.

BCT 101 Principles of Construction

3 cr. hrs. 3 periods (3 lec.)

Introduction to the principles of construction. Includes the building delivery process, government constraints, green building and sustainable design, calculating loads and resistance factors, and composition, closing process, codes, and Green Building Certification and Award.

Offered: Fall, Spring.

BCT 102 Building Materials

3 cr. hrs. 3 periods (3 lec.)

Construction standards and specific types of building materials used in commercial, industrial, residential and private construction projects. Includes beginning construction standards, site work, concrete, masonry, metals, wood and wood products, thermal and moisture protection, doors and windows, finishes, specialties, equipment, furnishings, special construction, conveying systems, mechanical systems, and electrical systems.

Offered: Fall, Spring.

BCT 104 Introduction to Equipment Maintenance

4 cr. hrs. 6 periods (2 lec., 4 lab)

Procedures and concepts for maintaining buildings in a commercial/industrial setting. Includes preventative maintenance requirements, maintenance terminology, industrial tool use, electrical equipment maintenance, electrical feed, bearing applications, sheaves applications, flexible drives and V-belts, centrifugal pump maintenance, vacuum pump maintenance, fire suppressant system maintenance and repair, metal fabrication, steel pipe plumbing, as-built print reading, lubricants, and interior wall frame/ construction.

Prerequisite(s): BCT 132 or concurrent enrollment.

Offered: Fall, Spring, Summer.

BCT 105 Professionalism in Service, Construction Math, Basic Rigging

3 cr. hrs. 3 periods (3 lec.)

Concepts, procedures and techniques in service, construction math, and rigging. Includes an introduction to professionalism, self-evaluation, service routine, addressing dissatisfied customers, and problem situations. Includes basic mathematics concepts and employability in the construction industry. Also includes how to safely handle and use rigging equipment.

Information: Same as BCT 100, BCT 112, and BCT 115.

Offered: May not be offered this year, check class schedule.

BCT 106 Soldering and Brazing for BCT

4 cr. hrs. 6 periods (2 lec., 4 lab)

Principles and technologies of joining different types of alloys by braze welding and soldering. Includes safety and health, procedures and design, pre-cleaning and surface preparation, filler metals, fluxes and atmospheres, torch brazing, pipe and tube, copper, and cast iron.

Prerequisite(s): BCT 105 and 107 or concurrent enrollment.

Information: BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

Offered: Fall, Spring, Summer.

BCT 107 Basic Safety, Hand and Power Tools, Blueprint Reading

3 cr. hrs. 3 periods (3 lec.)

Introduction to federal safety standards, tools, and blueprint reading in the construction industry. Includes employer responsibility-employee right to know, personal protective equipment, material handling, hand and power tools, electrical hazards, hazards communication standards, fire safety, scaffolds, and fall protection. Also includes basic concepts in blueprint reading terminology, components, lines, locations, dimensions, production techniques, parts, and locations.

Information: Same as BCT 111, BCT 113, and BCT 114.

Offered: May not be offered this year, check class schedule.

BCT 109 NCCER Core Introductory Craft Skills

5.75 cr. hrs. 6.65 periods (4.85 lec., 1.8 lab)

National Center for Construction Education and Research (NCCER) core introduction to craft skills. Includes basic safety, basic construction math, introduction to hand tools, introduction to power tools, basic construction drawings, basic communications skills, basic employability skills, and introduction to material handling. Also includes as an elective an introduction to basic rigging.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G, BCT 109H, and BCT 109I comprise BCT 109.

These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 109A NCCER Core Basic Craft Safety

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) Core basic craft safety. Includes safety and hazard recognition, elevated work and fall protection, struck-by and caught-in-between hazards, energy release hazards, personal protective equipment (PPE), and job-site hazards.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 109B NCCER Core Basic Construction Math

.75 cr. hrs. .75 periods (.75 lec.)

National Center for Construction Education and Research (NCCER) Core basic construction math. Includes whole numbers, fractions, the decimal system, measuring length, converting between the imperial and metric systems, and basic angles and geometric shapes.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 109C NCCER Core Introduction to Hand Tools

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) Core introduction to hand tools. Includes types of hand tools, measurement and layout tools, cutting and shaping tools, and common hand tools used by skilled craft workers.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications. offered: Fall, Spring, Summer.

BCT 109D NCCER Core Introduction to Power Tools

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) Core introduction to power tools. Includes power drills, impact wrenches, power saws, grinders and their associated attachments, and miscellaneous power tools commonly used by skilled craft workers.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 109E NCCER Core Basic Construction Drawings

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) Core basic construction drawings. Includes types of construction drawings, drawing components, drawing elements, dimensions and measuring scales.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 109F NCCER Core Basic Communications Skills

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

National Center for Construction Education and Research (NCCER) Core basic communications skills. Includes basic verbal communications, active listening, basic reading and basic writing skills employed by skilled craft workers.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 109G NCCER Core Basic Employability Skills

.5 cr. hrs. .5 periods (.5 lec.)

National Center for Construction Education and Research (NCCER) Core basic employability skills. Includes opportunities in the construction industry, critical thinking and problem solving, and relationship and social skills.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 109H NCCER Core Introduction to Materials Handling

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

National Center for Construction Education and Research (NCCER) Core introduction to materials handling. Includes principles of materials handling and materials handling equipment.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 109I NCCER Core Introduction to Basic Rigging

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

National Center for Construction Education and Research (NCCER) Core introduction to basic rigging. Includes basic rigging hardware and emergency communications.

Information: BCT 109A, BCT 109B, BCT 109C, BCT 109D, BCT 109E, BCT 109F, BCT 109G and BCT 109H, and BCT 109I comprise BCT 109. These courses are equivalent to the NCCER Core Introduction to Craft Skills (Fifth Edition). BCT 109A through BCT 109H, NCCER Core Introduction to Craft Skills, are prerequisites for students wishing to earn additional NCCER certifications.

Offered: Fall, Spring, Summer.

BCT 111 Basic Safety for the Building Trades

1 cr. hrs. 1 periods (1 lec.)

Introduction to federal safety training standards. Includes employer responsibility-employee right to know, personal protective equipment, material handling, hand and power tools, electrical hazards, hazards communication standards, fire safety, scaffolds, fall protection, cranes, and stairways and ladders.

Information: Successful completion of this course qualifies the student for the 10 hour safety training card.

Offered: Fall.

BCT 112 Construction Mathematics, Communication and Employability

1 cr. hrs. 1 periods (1 lec.)

Introduction to basic mathematics concepts and employability in the construction industry. Includes whole numbers, measurements, fractions, decimals, conversion process, metric system, construction geometry, reading, writing, listening and speaking skills, employability in the construction business, critical thinking and computer skills, relationship skills, and workplace issues.

Information: Mathematics assessment test is required before enrolling in this course.

Offered: Fall.

BCT 113 Hand and Power Tools

1 cr. hrs. 1 periods (1 lec.)

Selection and safety procedures. Includes trades terms, hand tool, and power tool use to specific jobs in the construction industry.

Offered: Fall.

BCT 114 Blueprint Reading

1 cr. hrs. 1 periods (1 lec.)

Basic concepts of blueprints. Including terms and symbols, components, measuring tools, line types and symbols, abbreviations, grid lines, plan locations, and dimensions, production techniques, and blueprint reading parts and locations.

Offered: Fall.

BCT 115 Basic Rigging

1 cr. hrs. 1 periods (1 lec.)

Rigging hardware and equipment. Includes safety, rigging equipment, inspection, crane hand signals, estimating an object, common rope knots, types of derricks and cranes, rigging and moving equipment use, and handling hazardous material.

Offered: Fall.

BCT 120 Blueprint Reading for Construction

3 cr. hrs. 3 periods (3 lec.)

Residential and light commercial blueprint reading. Includes blueprint symbols and terminology, construction materials, applications and specifications for commercial buildings, light frame and brick veneer construction, and appropriate mathematics.

Recommendation: Completion of BCT 107 before enrolling in this course.

Information: BCT 111, 113, and 114 substitute for BCT 107.

Offered: May not be offered this year, check class schedule.

BCT 123 Concrete/Masonry

3 cr. hrs. 5 periods (1 lec., 4 lab)

Basic concepts and materials for concrete construction, finishing, and masonry work. Includes trade terminology, composition and characteristics of concrete, uses of concrete as a building material, effects of craftsmanship on finished concrete, concrete construction process, site operations and work set-up, history of masonry, and modern masonry materials and methods.

Offered: Fall, Spring.

BCT 130 EPA Clean Air Act: Section 608

1 cr. hrs. 1 periods (1 lec.)

Freon certification preparation. Includes basics of refrigerant bearing equipment, ozone depletion and the new legislation, technician categories covered on the certification examination, and certification testing.

Offered: Fall, Spring, Summer.

BCT 132 Residential and Industrial HVAC I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to materials and procedures for heating, ventilating, and air conditioning (HVAC). Includes trade mathematics, copper and plastic piping practices, soldering and brazing, ferrous metal piping practices, basic electricity, introduction to cooling and heating, and air distribution systems.

Prerequisite(s): BCT 105 and 107.

Information: BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

Offered: Fall, Spring, Summer.

BCT 133 Residential and Industrial HVAC II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to commercial airside systems. Includes chimneys, vents, flues, hydronic systems, air quality equipment, leak detection, evacuation, recovery, charging, alternating current, and basic electronics.

Prerequisite(s): BCT 132.

Offered: Fall, Spring, Summer.

BCT 134 Residential and Industrial HVAC III

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to the principles of heat transfer, humidity, filtering, and energy saving devices used in HVAC systems. Includes accessories and optional equipment, metering devices, compressors, heat pumps, leak detection, evacuation, recovery, and charging.

Prerequisite(s): BCT 133.

Offered: Fall, Spring, Summer.

BCT 135 National Electrical Code Residential Wiring Applications

4 cr. hrs. 6 periods (2 lec., 4 lab)

Electrical wiring and installation conforming to National Electrical Code requirements. Includes grounded systems, requirements for over-current protection of conductors, ampacity criteria, installing over-current protection of conductors, installing services, installing motors and transformers, remote control and signaling circuits, and installing structured wiring in homes and offices.

Prerequisite(s): BCT 172.

Offered: Fall, Spring, Summer.

BCT 145 Carpentry I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Theories and concepts for carpentry. Includes orientation to the trade, wood building materials, fasteners and adhesive, hand and power tools, floor systems, wall, ceiling, and roof framing, and windows and exterior doors.

Prerequisite(s): BCT 105 and 107 or concurrent enrollment.

Information: BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

Offered: Fall, Spring, Summer.

BCT 146 Woodworking I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Concepts and procedures for working with hardwoods. Includes introduction to hardwoods, measuring hardwoods, use of hardwoods, pressure treated wood, hardwood preparation, ripping wood, miter cuts, cross cuts, job site safety, gluing and clamping, veneers, curves and circles, dados and rabbets, and smoothing wood.

Offered: Fall.

BCT 147 Woodworking II

3 cr. hrs. 5 periods (2 lec., 3 lab)

A continuation of BCT 146. Advanced topics in woodworking. Includes safety practices; designing and planning; measuring and cutting; planeing, chiseling, and sanding; butt, biscuit and dowel joints; rabbit joints; dado joints; lap joints; miter joints; mortise-and-tenon joint; veneers; using fasteners, dovetail joints and case casework; and applying stains and clear finishes.

Prerequisite(s): BCT 146.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: Spring.

BCT 148 Cabinetmaking I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Concepts and procedures for fine woodworking practices. Includes introduction to cabinetmaking, cabinetry styles, human factors, working drawings, lumber and millwork, manufactured panel products, veneers and plastic overlays, hardware, health and safety, measuring and laying out materials, stationary power machines, hand and portable power tools, surfacing and shaping, and building a basic cabinet.

Prerequisite(s): BCT 147.

Offered: Fall.

BCT 149 Cabinetmaking II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of BCT 148. Includes turning, joint making, abrasives and sanding machines, gluing and clamping, bending and laminating wood, overlaying and inlaying veneer, installing plastic laminates, advanced case construction, doors, drawers, applying finishing materials, kitchen cabinets, industrial production cabinetmaking, and employment in cabinetmaking.

Prerequisite(s): BCT 148.

Information: Prerequisite may be waived with appropriate carpentry/cabinetmaking skills. See an instructor or department chair for information.

Offered: Spring.

BCT 150 Plumbing Basics

4 cr. hrs. 6 periods (2 lec., 4 lab)

Theories and concepts for plumbing and pipe fitting. Includes physics for plumbers, plumbing materials, water supplies, drainage, sewage disposal, pipe joint connections, pipe fittings, rough-in, valves and faucets, and fixtures.

Prerequisite(s): BCT 111.

Offered: Fall, Spring, Summer.

BCT 153 Finishing Techniques in Cabinet and Furniture Making

3 cr. hrs. 5 periods (2 lec., 3 lab)

Wood finishing techniques for cabinet and furniture making. Includes safe and effective use of a variety of wood finishes and finishing equipment, reasons for finishing wood, tools for applying finishes, oil finishes, wood stains, pore fillers, introduction to film finishes, shellac, lacquer, varnish, water-based finishes, conversion finishes, choosing a finish, finishing the finish, caring for wood finishes, repairing finishes, finishing different woods, and strippers.

Recommendation: Woodworking and cabinetmaking experience helpful. See a BCT faculty member for assistance.

Offered: May not be offered this year, check class schedule.

BCT 159 Furniture Design and Construction

3 cr. hrs. 5 periods (2 lec., 3 lab)

Wood furniture-making techniques for hobbyists and professionals. Includes basic material; tools and equipment safety and use; basic techniques and joint construction; advanced areas of furniture construction; metal fittings/fasteners and their application; advanced techniques in furniture making; drafting and workshop geometry; furniture designs and construction details; and restoration, repairs, and wood finishing.

Prerequisite(s): BCT 147.

Offered: Spring.

BCT 160 Roof Mounting for Solar Installations

4 cr. hrs. 4 periods (4 lec.)

Techniques and skills for Photovoltaic (PV) installers to size, design, and install solar panels. Includes an introduction to different types of mounting systems. Also includes site location of panels, orientation to house, shading at the site, weather, roof materials, soil and load bearing capacity.

Offered: May not be offered this year, check class schedule.

BCT 172 Electrical I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Concepts and procedures for building and construction electrical training. Includes safety, conduit bending, electrical theory, test equipment, National Electric Code, aceways, boxes, and fittings, print reading, and wiring applications.

Prerequisite(s): BCT 105 and 107 or concurrent enrollment.

Information: BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

Offered: Fall, Spring, Summer.

BCT 173 Electrical II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 172. Includes alternating current, motor installation, grounding of structures and equipment, conduit bending, electrical boxes and fittings, and conductor installations.

Prerequisite(s): BCT 172.

Offered: Fall, Spring, Summer.

BCT 174 Electrical III

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 173. Includes conductor installation, cable tray, conductor termination and splices, electric service installation, circuit breakers and fuses, contactors and relays, and electrical lighting.

Prerequisite(s): BCT 173.

Offered: Fall, Spring, Summer.

BCT 181 Residential and Industrial Plumbing I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to common types of piping, their proper fitting, fixtures, and distribution systems. Includes introduction to the plumbing trade and drawings; plastic, copper, cast-iron, and carbon steel piping; fixtures and faucets; introduction to drainage, waste, and vent (DWV) systems; and water distribution systems.

Prerequisite(s): BCT 105 and 107.

Information: BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

Offered: Fall, Spring, Summer.

BCT 182 Residential and Industrial Plumbing II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Concepts and practices for plumbing. Includes offsets around obstructions, reading commercial drawings, installing and testing drainage, waste, and vent (DWV) piping system, installing roof, floor and area drains, and servicing various types of valves.

Prerequisite(s): BCT 181.

Offered: Fall, Spring, Summer.

BCT 183 Residential and Industrial Plumbing III

4 cr. hrs. 6 periods (2 lec., 4 lab)

Concepts and installation procedures for water service, fixtures, and appliances. Includes installing and testing water supply piping, fixtures, valves, and faucets; electrical applications; water heaters; fuel gas systems; and servicing of fixtures, valves, and faucets.

Prerequisite(s): BCT 182.

Offered: Fall, Spring, Summer.

BCT 184 National Electrical Code I

3 cr. hrs. 3 periods (3 lec.)

Requirements for the installation of electrical conductors, equipment, raceways, cables, and special occupancies. Includes introduction to the National Electrical Code, wiring and protection, wiring methods and materials, and equipment for general use.

Prerequisite(s): BCT 172.

Information: BCT 184 and 284 together provide preparation for the National Electrical Code certification exam.

Offered: Fall, Spring, Summer.

BCT 190 Fieldwork for Construction

1-8 cr. hrs. 5-40 periods (5-40 lab)

Supervised fieldwork experience on a specific construction project at the project site.

Prerequisite(s): BCT 105 and 107.

Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: BCT course work or field experience will be necessary for success in this course. See a BCT instructor or department chair for more information.

Information: BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

Offered: Fall, Spring, Summer.

BCT 202 Construction Business Management

3 cr. hrs. 3 periods (3 lec.)

Overview of construction business and project management. Includes planning and organizing, risk management, project management, estimating, scheduling, environmental and safety laws, employer obligations, financial management, contract law, and Arizona state requirements for contractors.

Offered: Fall, Spring.

BCT 204 Construction Surveying

3 cr. hrs. 5 periods (2 lec., 3 lab)

Principles and techniques of construction surveying. Includes taping, leveling, transit, contour and topographic mapping, and construction surveying.

Prerequisite(s): GTM 105 or MAT 086 or required score on the Mathematics assessment test.

Recommendation: Completion of BCT 120 before enrolling in this course.

Offered: Fall, Spring.

BCT 231 Residential and Industrial HVAC IV

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 134. Includes refrigerants and oil, compressors, metering devices, retail refrigeration systems, commercial hydronic systems, and steam systems.

Prerequisite(s): BCT 134.

Offered: Fall, Spring, Summer.

BCT 232 Residential and Industrial HVAC V

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 231. Includes planned maintenance, water treatment, troubleshooting electronic controls, troubleshooting oil heating, troubleshooting heat pumps, and troubleshooting accessories.

Prerequisite(s): BCT 231.

Offered: Fall, Spring, Summer.

BCT 233 Residential and Industrial HVAC VI

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 232. Includes construction drawings and specifications, indoor air quality, energy conservation equipment, and building management systems.

Prerequisite(s): BCT 232.

Offered: Fall, Spring, Summer.

BCT 234 Residential and Industrial HVAC VII

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 233. Includes water treatment, system startup and shutdown, heating and cooling system design, and commercial and industrial refrigeration systems.

Prerequisite(s): BCT 233.

Offered: Fall, Spring, Summer.

BCT 235 National Electric Code Commercial Wiring Applications

4 cr. hrs. 6 periods (2 lec., 4 lab)

Commercial electrical wiring and installation practices conforming to the National Electric Code. Includes commercial building plans, specifications, and drawings, electrical loads and branch circuits, switches and receptacles, branch circuit installations, motor and appliance circuits, feeders, special systems and circuits, panelboard selection and installation, electric service equipment, lamps and luminaries, emergency and standby power systems, and overcurrent protection.

Prerequisite(s): BCT 135.

Offered: Fall, Spring, Summer.

BCT 236 Residential and Industrial Plumbing IV

4 cr. hrs. 6 periods (2 lec., 4 lab)

Concepts that apply to plumbing installations. Includes applied math, sizing water supply piping, potable water treatment, and backflow preventers.

Prerequisite(s): BCT 183.

Offered: Fall, Spring, Summer.

BCT 237 Residential and Industrial Plumbing V

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 236. Includes types of venting; sizing DWV and storm systems; sewage pumps and sump pumps; corrosive resistant waste piping; and compressed air.

Prerequisite(s): BCT 236.

Offered: Fall, Spring, Summer.

BCT 238 Residential and Industrial Plumbing VI

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 237. Includes concepts and practices essential to competitive and successful plumbing businesses. Also includes business principles for plumbers, introductory skills for the crew leader, water pressure booster and recirculation systems, indirect and special waste, and hydronic and solar heating systems.

Prerequisite(s): BCT 237.

Offered: Fall, Spring, Summer.

BCT 239 Residential and Industrial Plumbing VII

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 238. Includes codes; servicing piping systems, fixtures, and appliances; private water supply well systems; private waste disposal systems; swimming pools and hot tubs; and plumbing for mobile homes and travel trailers.

Prerequisite(s): BCT 238.

Information: BCT coursework or field experience will be necessary for success in this course. See a BCT instructor or department chair for more information.

Offered: Fall, Spring, Summer.

BCT 245 Carpentry II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 145. Includes techniques for reading construction drawings and specifications, site layout, measurement, and leveling, concrete materials and concrete reinforcement materials, construction of forms for footings and on-grade slabs, and concrete forms.

Prerequisite(s): BCT 145.

Offered: Fall, Spring.

BCT 265 Sustainability for Building Trades

3 cr. hrs. 3 periods (3 lec.)

Fundamentals of sustainable design. Includes green building practices and implementation. Also includes green building concepts, site and building planning and development, materials, strategies, cost benefit analysis, and practical applications in the current construction business environment.

Offered: Fall, Spring.

BCT 271 Electrical IV

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 174. Includes load calculations-branch and feeder circuits, conductor selection and calculations, practical applications of lighting, hazardous locations, and overcurrent protection.

Prerequisite(s): BCT 174.

Offered: Fall, Spring, Summer.

BCT 272 Electrical V

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 271. Includes distribution equipment, transformers, commercial electrical services, motor calculations, voice, data, and video, and motor controls.

Prerequisite(s): BCT 271.

Offered: Fall, Spring, Summer.

BCT 273 Electrical VI

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 272. Includes load calculations-feeders and services, health care facilities, standby and emergency systems, basic electronic theory, fire alarm systems, and specialty transformers.

Prerequisite(s): BCT 272.

Offered: Fall, Spring, Summer.

BCT 274 Electrical VII

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of BCT 273. Includes advanced controls, signaling systems, specialty transformers, standby and emergency systems, welding machines, HVAC controls, and heat tracing and freeze protection.

Prerequisite(s): BCT 273.

Offered: Fall, Spring, Summer.

BCT 284 National Electrical Code II

3 cr. hrs. 3 periods (3 lec.)

Continuation of BCT 184. Includes introduction to the National Electrical Code, special occupancies, special equipment, special conditions, and communication systems.

Prerequisite(s): BCT 184.

Information: BCT 184 and BCT 284 together provide preparation for the National Electrical Code certification exam.

Offered: Fall, Spring, Summer.

BCT 286 International Residential Code (IRC) I

3 cr. hrs. 3 periods (3 lec.)

Requirements of the major systems of residential building construction (other than commercial). Includes administration, definitions, building planning, foundations, floors, wall construction, wall covering, roof-ceiling construction, roof assemblies, chimneys and fireplaces.

Recommendation: Completion of general construction field experience before enrolling in this course.

Offered: Fall, Spring.

BCT 287 International Residential Code (IRC) II

3 cr. hrs. 3 periods (3 lec.)

Continuation of BCT 286. Includes energy efficiency, mechanical systems, plumbing systems, electrical systems, and referenced standards.

Prerequisite(s): BCT 286.

Offered: Fall, Spring.

Business

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

BUS 100 Introduction to Business

3 cr. hrs. 3 periods (3 lec.)

Introduction to Business Principles of business operations in the private enterprise system. Includes contemporary business and its environment, structure of American business, management principles of the organization, people, and production, marketing management, information systems and accounting, and financing the enterprise.

Offered: Fall, Spring, Summer.

BUS 125 eCommerce

3 cr. hrs. 3 periods (3 lec.)

Introduction to conducting business on the Internet. Includes electronic commerce terminology, locating information, business applications, legal issues and security, and web site components and connectivity. Also includes marketing on the Internet, career opportunities, future developments, and building and operating a successful e-commerce store.

Offered: Fall, Spring, Summer.

BUS 148 Ethics in the Workplace

3 cr. hrs. 3 periods (3 lec.)

Ethical principles in decision making applied to the business and industry workplace. Includes ethical issues in decision making, ethical frameworks for decisions, personal values and ethical priorities, ethics in business and industry, ethical standards in the workplace, ethical choices, application of ethical principles, social and cultural values applied to decisions, and workplace culture.

Offered: Fall, Spring, Summer.

BUS 151 Mathematics of Business

3 cr. hrs. 3 periods (3 lec.)

Applying mathematical procedures, using algebraic techniques, critical thinking, and problem-solving methods for practical utility in the business environment. Includes math review; bank records; payroll; trade and cash discounts; markup and markdown; simple and compound interest; present and future value; annuities and sinking funds; consumer credit; depreciation; inventory, overhead, and turnover; financial statements; insurance; taxes; and stocks and bonds.

Prerequisite(s): MAT 086 or completion of Module 22 in MAT 089 or satisfactory score on the Mathematics assessment test.

Offered: Fall, Spring, Summer.

BUS 205 Statistical Methods in Economics and Business

3 cr. hrs. 3 periods (3 lec.)

Introduction to statistical concepts and methods of business. Includes statistics, data, and statistical thinking; methods for describing sets of data, probability, sampling distributions, inferences based on single sample and two samples; estimation with confidence intervals and tests of hypothesis; correlation and regression; time series; design of experiments; analysis of variance (ANOVA), and categorical data analysis.

Prerequisite(s): MAT 212 or 220.

Information: MAT 172 or 173 may be accepted as the prerequisite if taken prior to Fall 2013. Basic Excel knowledge is required before enrolling in this course.

Offered: Fall, Spring, Summer.

BUS 210 International Business

3 cr. hrs. 3 periods (3 lec.)

Introduction to international business, focusing on the importance of cultural, economic, legal, political, sociological, and strategic complexities that emerge when business activities transcend international borders. Includes the terminology of international business and the basic do's and don'ts within the various foreign business societies.

Recommendation: Completion of BUS 100 before enrolling in this course.

Offered: May not be offered this year, check class schedule.

BUS 220 Legal Environment of Business

3 cr. hrs. 3 periods (3 lec.)

Overview of the impact of law, ethics and corporate responsibility in business. Includes basic concepts of law, structure, characteristics, the administration thereof, and continues through the many facets of business and the law including without limitation, formation, operation, ethics, corporate responsibility, agency, contracts, and government regulation.

Offered: Fall, Spring, Summer.

BUS 250 Entrepreneurship

3 cr. hrs. 3 periods (3 lec.)

Overview of entrepreneurship, providing a sound base for understanding and application of entrepreneurial activity. Includes the entrepreneurial process, accompanied by the skills necessary for success, including without limitation, idea generation, planning, ownership and control, financing, marketing, technology, and management.

Prerequisite(s): BUS 100.

Information: BUS 100 may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

BUS 277 Analytical Methods in Business

4 cr. hrs. 4 periods (4 lec.)

Business statistic topics and applications. Includes descriptive measures and continuous probability distributions; sampling distributions, hypothesis testing, statistical inference, analysis of variance, correlation and regression with an emphasis placed on application to business cases using data rich case analysis. Also includes Excel and SPSS workshops for statistical analyses on business and economic cases accompanied by sample reports incorporating test results, its conclusions and the communication of such conclusions.

Prerequisite(s): MAT 212 and BUS 205

Recommendation: CIS 120

Information: Basic Excel knowledge is required before enrolling in this course. CIS 120 meets this requirement.

Offered: Fall, Spring.

BUS 296 Independent Study in Business

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Independent study projects or special interest areas in business under the supervision of a faculty member.

Prerequisite(s): BUS 100.

Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

BUS 299 Co-op: Business

1 cr. hrs. 1 periods (1 lec.)

Principles of job success. Preparation of job-related objectives, individual progress and advancement on the job, labor relations, role of management, and evaluation of student work experience. Emphasis on attitude adjustment.

Corequisite(s): BUS 299WK

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

BUS 299WK Co-op Work: Business

1-8 cr. hrs. 5-40 periods (5-40 lab)

A supervised cooperative work program for students in an occupation related area. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

Corequisite(s): BUS 299

Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Chemistry

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CHM 121IN Chemistry and Society

4 cr. hrs. 6 periods (3 lec., 3 lab)

Basic chemistry and its relationship to everyday experiences. Includes classification and structure of matter; radioactivity; compound formation from elements; and electron transfer. Also includes acids, bases, salts, the liquid state, the gas state, and special topics.

Information: Designed for non-science majors, education majors, and the general public.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

CHM 125IN Consumer Chemistry

4 cr. hrs. 6 periods (3 lec., 3 lab)

An overview of the chemistry of everyday products and processes for the non-science major. Includes the chemistry of toothpaste, deodorants, cosmetics, soaps, detergents, food, toys, paints, plastics, and other products commonly found in the kitchen, laundry, bathroom, bedroom, and workshop. Also includes the process of science and the scientific method.

Information: No previous chemistry background is required.

Offered: May not be offered this year, check class schedule.

CHM 128IN Forensic Chemistry

4 cr. hrs. 6 periods (3 lec., 3 lab)

Evolution, practice, and trends in the use of chemistry, physics and biology in forensic studies. Includes the study of scientific methods, applications of molecular biology in DNA analysis, crime scene evidence analysis; i.e., drugs, ballistics, and terrorism. Also includes the discussion of implications and effects these applications have on the law, courts, and society.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Information: Previous knowledge of math, biology, chemistry is advantageous.

Offered: May not be offered this year, check class schedule.

CHM 130IN Fundamental Chemistry

5 cr. hrs. 7 periods (4 lec., 3 lab)

Inorganic Chemistry as a basis for the study of some life processes. Includes the classification, structure and general chemical behavior of inorganic matter.

Prerequisite(s): MAT 092 with a C or better, or Module 31 in MAT 089, or required score on mathematics assessment test.

Information: Adapted to the needs of students in allied health programs. IN is the integrated version of the course and lab taught simultaneously.

Offered: Fall, Spring, Summer.

CHM 140IN Fundamental Organic and Biochemistry

5 cr. hrs. 7 periods (4 lec., 3 lab)

Continuation of CHM 130. Organic chemistry as the basis for the study of some important life processes. Includes the classification, structure, and general chemical behavior of organic and biochemical systems.

Prerequisite(s): A grade of C or better in CHM 130/130LB or CHM 130IN.

Information: Adapted to the needs of students in nursing and other health professions. IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

CHM 151IN General Chemistry I

5 cr. hrs. 7 periods (4 lec., 3 lab)

Introduction to the foundations of chemistry for upper-level sciences and engineering. Includes atomic structure, chemical bonding, reaction stoichiometry, behavior of gases, and reactions in solutions. Also includes an introduction to thermochemistry.

Prerequisite(s): With a grade of C or better: MAT 122 and either CHM 080 or CHM 130/130LB or CHM 130IN or placement into CHM 151 on the Chemistry assessment test.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

CHM 152IN General Chemistry II

5 cr. hrs. 7 periods (4 lec., 3 lab)

Continuation of CHM 151. Includes emphasis on certain chemical concepts such as chemical kinetics, equilibrium, acids and bases, thermodynamics, and electrochemistry.

Prerequisite(s): With a grade of C or better: MAT 151 or higher and either CHM 151/151LB or 151IN.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

CHM 195 Introduction to Research in Chemistry

4 cr. hrs. 4 periods (4 lec.)

Introduction to the methods of research in chemistry. Includes scientific laboratory procedures, experimental design, scientific writing, scientific ethics, and current research in working laboratories.

Information: Consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

CHM 196LB Independent Studies in Chemistry

1-4 cr. hrs. 3-12 periods (3-12 lab)

Laboratory projects varying with students' interests and reasons for enrolling.

Offered: May not be offered this year, check class schedule.

CHM 235IN General Organic Chemistry I

5 cr. hrs. 7 periods (4 lec., 3 lab)

Fundamentals of organic chemistry. Includes classification, occurrence, synthesis, analysis, Stereochemistry, and reaction mechanisms of important classes of organic compounds; namely alkanes, cycloalkanes, alkenes, alkynes, and alkyl halides. Also includes application of the organic chemistry concepts addressed, using a wide range of laboratory apparatus and procedures. Also focuses on laboratory safety skills and computer software applications related to chemistry.

Prerequisite(s): CHM 152/152LB or CHM 152IN with a grade of C or better.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

CHM 236IN General Organic Chemistry II

5 cr. hrs. 7 periods (4 lec., 3 lab)

Continuation of CHM 235. Includes remaining classes of organic compounds, specifically dienes, alcohols, ethers and epoxides, aldehydes, ketones, acids, acid derivatives, aromatics, and nitrogen containing compounds and an introduction to biomolecules and/or polymers. Also includes an emphasis on synthesis and use of chemical and instrumental methods as means of identification while using a wide range of laboratory apparatus and procedures. Also focuses on laboratory safety skills and computer software applications related to chemistry.

Prerequisite(s): CHM 235/235LB or CHM 235IN with a grade of C or better.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

CHM 290 Chemistry Internship

1-4 cr. hrs. 1-4 periods (1-4 lec.)

Internship and work experience in a science field or laboratory. Includes setting, achieving, and evaluating goals for hands-on learning experiences in sciences. Also includes development of skills and knowledge needed to work in a science field or laboratory.

Information: Consent of Internship instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

CHM 295LB Independent Research in Chemistry

1-4 cr. hrs. 3-12 periods (3-12 lab)

Experience in scientific laboratory research. Specific content to be determined by student and instructor.

Information: One semester of chemistry and consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

Child Development Associate

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CDA 102 The Child's Total Learning Environment

1 cr. hrs. 1 periods (1 lec.)

Analysis of the total learning environment for children birth through age 8. Includes establishing an educational learning environment, value of a child-centered learning environment, the indoor and outdoor environment, developmentally appropriate learning centers, and play materials. Also includes the teacher's role and responsibility within the learning environment, and utilizing the community as an integral part of the child's total learning environment.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 103 Curriculum Planning and Schedule Development

1 cr. hrs. 1 periods (1 lec.)

Strategies for the creation of lesson plans and schedules for use in the classroom. Includes preparation of group and individualized lesson plans and schedules based on children's abilities, planning as a cooperative effort, foundations of events and activities, balancing variety in the classroom, individual center's philosophy in the planning process, flexibility in planning, and assessment and evaluation.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 112 Guidance Principles for Encouraging Self-Discipline

1 cr. hrs. 1 periods (1 lec.)

Development of guidelines for using positive discipline techniques in the classroom. Includes role modeling, social development and appropriate actions, program influences on children's behaviors and relationships, rules and limits, and difference between discipline and punishment.

Information: All CDA courses require college-level reading and writing.

Offered: Spring.

CDA 114 Collecting, Organizing and Using Teaching Aids

1 cr. hrs. 1 periods (1 lec.)

Survey of several different types of teaching aids used in the early care and education environment for children birth through age eight. Includes identifying what belongs in a developmentally appropriate learning environment for children, how to sort and organize teaching aids according to types, how to incorporate those teaching aids into the various curricula areas of the program and sharing with families through reciprocal relationships. Also includes various types of teaching aids such as individual children's portfolios, activity card file collection, picture and poster file, media resources, reference materials, professional literature, and community resources.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring.

CDA 121 Techniques for Observing Children

1 cr. hrs. 1 periods (1 lec.)

Development of techniques for observing, recording, and interpreting behavior in children. Includes purpose of observation, observation and collecting information, observation and assessment techniques, interpreting observations, individual documentation, observation-based curriculum planning, behavioral and developmental milestones, and sharing observations and assessments professionally.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 126 Literature for Preschool Children

2 cr. hrs. 2 periods (2 lec.)

Survey of materials and techniques for the selection and evaluation of children's literature. Includes the importance of literature for children, creating a developmentally appropriate environment for young readers, general categories of books, importance of pictures/illustrations and storytelling, reading aloud to children, creating a story with children and the teacher's role.

Information: All CDA courses require college-level reading and writing. all CDA classes.

Offered: Spring, Summer.

CDA 138 Building Parent and Classroom Connections

3 cr. hrs. 3 periods (3 lec.)

Analysis of the specific attitudes, philosophies and practical techniques in building relationships with families for teachers. Includes families today, overview of family involvement, benefits of and barriers to teacher family partnerships, at the beginning with parents and children, informal communications with families, parent teacher conferences, home visits, families in the classroom, community involvement, working with families from diverse backgrounds and families in particular circumstances, resolving troublesome attitudes and behaviors, and parent involvement programs that work.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 155 Understanding How Children Learn and Develop

1 cr. hrs. 1 periods (1 lec.)

Exploration of the cognitive learning progression of children birth through age 8. Includes introduction of various theorists, ways children learn, and the family and community influences and support toward a child's learning and the teacher's role.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 161 Principles of Social Competence

1 cr. hrs. 1 periods (1 lec.)

Analysis of self-concept in children. Includes self concept/self-image, primary factors, uniqueness of each child, environment, accepting and expressing feelings appropriately, observation, expressing emotions, activities for expression of feelings, and exploration of feelings.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 170 Ages and Stages of Young Children: Prenatal through Toddler

2 cr. hrs. 2 periods (2 lec.)

Examination of the developmental stages pre-birth to age three years. Includes general principles and theories of development, biological and environmental factors, conception to birth, infant developmental, toddler developmental milestones, issues in infant care, and toddler care issues.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 173 Ages and Stages of Young Children: The Preschool Years

1 cr. hrs. 1 periods (1 lec.)

Examination of the developmental stages of preschool children ages 3 to 5 years. Includes general principles and theories of development, physical characteristics, pattern of motor skill development, cognitive development, socio-emotional development, developmental concerns and challenges and family involvement.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 211 Small and Large Muscle Development

2 cr. hrs. 2 periods (2 lec.)

Examination of small and large muscle development and its relationship to cognitive learning. Includes overview of small/large muscle development, specific sequence, orderly process, practice, characteristics of the large and small muscle, activities and environment to promote muscle development, supervision and guidance, and observation and assessment. Also includes a variety of spontaneous and planned activities.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring.

CDA 222 Elements of Children's Culture

1 cr. hrs. 1 periods (1 lec.)

Examination of the ways culture affects children's learning. Includes an overview of multiculturalism, cross-cultural competence, responsive learning environments, and family and community involvement.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 224 Learning Theories and Cognitive Development Applications

2 cr. hrs. 2 periods (2 lec.)

Analysis of how young children grow and learn. Includes egocentrism, cognitive and memory development, concept formation and problem solving skills, and sharing resource with parents.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring.

CDA 229 Child Development Associate Assessment Preparation

3 cr. hrs. 3 periods (3 lec.)

Strategies for completion of the CDA Assessment. Includes documentation requirements, resource file, direct assessment application form, and verification visit requirements.

Information: All CDA courses require college-level reading and writing.

Offered: Spring.

CDA 257 Record Keeping for the Family Child Care Provider

1 cr. hrs. 1 periods (1 lec.)

Strategies for the development of a record keeping system to use in child care. Includes operating a small business, and organizing records. Also includes income tax forms, special tax liabilities and responsibilities, and important records to retain.

Information: All CDA courses require college-level reading and writing.

Offered: Summer.

CDA 258 Family Child Care as a Small Business

1 cr. hrs. 1 periods (1 lec.)

Examination of the aspects of family child care as a small business. Includes the role of the family child care provider, licensing and certification, insurance requirements, development of a business plan, and agreements between parents and providers.

Information: All CDA courses require college-level reading and writing.

Offered: Summer.

CDA 259 Balancing Work and Family in a Family Child Care Setting

1 cr. hrs. 1 periods (1 lec.)

Strategies for reaching a balance between work and family in the child care setting. Includes establishing an appropriate setting, planning the daily schedule, setting boundaries, keeping a balance in your own life, and communicating with parents. Also includes your role as a liaison between family, child, and parent.

Information: All CDA courses require college-level reading and writing.

Offered: Summer.

CDA 271 Professionalism in Childcare

1 cr. hrs. 1 periods (1 lec.)

Analysis of the history and ethics of early childhood professionals. Includes defining professionalism; examining the past, present and future; exploring professional values and ethics; continuing professional growth/education; and becoming an advocate for children and their families.

Information: All CDA courses require college-level reading and writing.

Offered: Fall, Spring, Summer.

CDA 273 Ages and Stages: The Middle Childhood Years

1 cr. hrs. 1 periods (1 lec.)

Examination of the stages of growth and development during the middle childhood years (ages 6 to 8). Includes physical growth, motor development, logical thinking and language skills, and social and emotional growth. Also includes examining developmental concerns and challenges and parental involvement.

Information: All CDA courses require college-level reading and writing.

Offered: Summer.

CDA 275 Transitions

1 cr. hrs. 1 periods (1 lec.)

Examination of the nature of transitions in the classroom. Includes introduction to transitions, selection of transitional activities, and transitions as part of the curriculum.

Information: All CDA courses require college-level reading and writing.

Offered: Summer.

CDA 276 Preparing a NAEYC Classroom Portfolio

3 cr. hrs. 3 periods (3 lec.)

Facilitation of the process of NAEYC Classroom Portfolio preparation. Includes the types of documentation that provide evidence that the classroom implementation meets the NAEYC Accreditation criteria. This is part of the NAEYC Self-Study and Self-Assessment process leading to NAEYC Accreditation.

Information: All CDA courses require college-level reading and writing.

Offered: May not be offered this year, check class schedule.

Chinese

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CHI 101 Elementary Chinese (Mandarin) I

5 cr. hrs. 5 periods (5 lec.)

Introduction to the Mandarin Chinese language. Includes basic phonetic system of the Chinese language, basic Chinese grammar structures, reading simple texts, basic Chinese writing and Chinese culture. Also includes a foundation in listening, speaking, reading, writing, and cultural awareness.

Offered: May not be offered this year, check class schedule.

CHI 102 Elementary Chinese (Mandarin) II

5 cr. hrs. 5 periods (5 lec.)

Continuation of CHI 101. Includes additional phonetic system of Chinese language, additional selection of grammar structures, additional reading Chinese, additional writing Chinese, and additional Chinese culture. Also includes an additional level of listening, speaking, reading, writing, and cultural awareness.

Prerequisite(s): CHI 101.

Offered: May not be offered this year, check class schedule.

CHI 201 Intermediate Chinese I

5 cr. hrs. 5 periods (5 lec.)

Continuation of CHI 102. Includes intermediate selection of grammar structures, oral and aural transactions, political, economic, and social vocabulary in readings and writings, intermediate literary works, and norms, values, and beliefs.

Prerequisite(s): CHI 102.

Offered: May not be offered this year, check class schedule.

CHI 202 Intermediate Chinese II

5 cr. hrs. 5 periods (5 lec.)

Continuation of CHI 201. Includes additional intermediate selection of grammar structures, intermediate oral, aural, and written transactions, response to complex topics, additional norms, values, and beliefs, and Chinese history and cultural aspects.

Prerequisite(s): CHI 201.

Offered: May not be offered this year, check class schedule.

Clinical Research Coordinator

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CRC 101 Foundations of Clinical Research

3 cr. hrs. 3 periods (3 lec.)

A comprehensive introduction to the clinical research process and practice. Includes history and evolution of clinical research, phases of clinical trials, protection of human subjects, clinical research team personnel and their roles, and the responsibilities of clinical research organizations. Also includes medical, clinical research, and standard pharmaceutical/pharmacological terms commonly used in clinical research; and issues of sensitivity, diversity, and ethics as applied to clinical research.

Information: Introductory class for program core.

Offered: Fall.

CRC 110 Clinical Research Common Terminology

3 cr. hrs. 3 periods (3 lec.)

Study of common terminology used in clinical research profession in order to properly report adverse events in universally understood terminology. Includes research specific terminology and medical terminology used in order to collect a thorough medical history, during an Adverse Event report, and throughout a clinical trial. Also includes common and medical terminology used in clinical research and other health care professions. In addition, the Medical Dictionary for Regulatory Activities (MedDRA) and the Common Terminology Criteria for Adverse Events (CTCAE) will be explored.

Prerequisite(s): BIO 160IN or concurrent enrollment.

Offered: Fall.

CRC 201 Clinical Research Regulatory Compliance

3 cr. hrs. 3 periods (3 lec.)

Introduction to the Food and Drug Administration (FDA) regulatory process and regulatory requirements for clinical research. Includes an overview of the role and function of the FDA, the drug development process, preparation and maintenance of an Investigational New Drug (IND), regulatory documentation, safety reporting, and Good Clinical Practices (GCPs).

Recommendation: Completion of CRC 101, or concurrent enrollment in the course.

Offered: Fall.

CRC 230 Introduction to Clinical Research Study Protocol

2 cr. hrs. 2 periods (2 lec.)

Introduction to the scientific development of research protocols and related regulatory requirements. Includes differentiations among research design types, rules for writing protocols, and ethical considerations relative to research protocols.

Prerequisite(s): CRC 101.

Recommendation: Completion of or concurrent enrollment in CRC 201.

Offered: Fall.

CRC 240 Pharmacology for Clinical Trials

4 cr. hrs. 4 periods (4 lec.)

Essential drug knowledge and facts and their application in clinical research. Includes common medical diagnoses and their related drug treatments (brand name and generic); what constitutes a drug; the effects and modes of action of drugs upon the body (pharmacodynamics); method and rate of excretion and duration of the effect of drugs (pharmacokinetics); drug side effects; drug-drug interactions; and how to find and interpret drug-related information from primary literature. Also includes an overview of the drug development process from bench through post-approval marketing.

Prerequisite(s): CRC 101.

Offered: Spring.

CRC 250 Clinical Research Site Coordination and Management

3 cr. hrs. 3 periods (3 lec.)

Introduction to the elements involved in implementing and managing a clinical trial from the perspective of the research site staff/team. Includes the identification and evaluation of sites and investigators, on-site budget management, and the coordination of subject participation.

Prerequisite(s): CRC 101, 201, 230.

Offered: Spring.

CRC 260IN Lab Skills and Professional Practice

3 cr. hrs. 5 periods (2 lec., 3 lab)

Clinical skills training to prepare for clinical research coordinator internship, with emphasis on applying clinical research project coordination concepts and practices in a simulated research setting. Includes research subject communication techniques, medical history review, adverse events, vital signs, EKG procedures, blood collection and specimen processing, storage and shipping. Also includes application of clinical research project coordination practices related to a protocol; research and medical terminology; recruitment, enrollment and retention practices; informed consent; detection of errors within study reports and casework; documentation of medications, adverse events and serious adverse events; review of study subject's file data for completeness and accuracy; and regulatory and legal mandates related to clinical trials.

Prerequisite(s): CRC 101, 201, 230, 240 and 250.

Offered: Spring.

CRC 270 Research Management for Sponsors and CRO's

3 cr. hrs. 3 periods (3 lec.)

Introduction to the elements involved in implementing, monitoring and managing a clinical study from the perspective of the Sponsor or Contract Research Organization (CRO). Includes overall project planning, development of study goals, preparation of budget and contracts, implementation of monitoring visits, and effective management of research sites.

Prerequisite(s): CRC 250.

Offered: Spring.

CRC 291 Clinical Research Coordinator Internship

1-3 cr. hrs. 3-9 periods (3-9 lab)

Supervised work experience in a clinical research setting. Includes emphasis on the observation and enhancement of professional and management skills team communication and interaction, and the application of research principles, procedures, protocols, and regulations in the workplace. Student will rotate through a variety of research sites agreed upon by the instructor and student.

Prerequisite(s): CRC 101, 201, 230, 240, 250 and 260IN.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

CRC 296 Clinical Research Independent Study: Clinical Project

1-6 cr. hrs. 4-24 periods (4-24 lab)

Students independently continue their development in Clinical Research under the mentorship of a faculty member. Content will be determined by instructor and student.

Information: Students must obtain lead faculty approval before enrolling in this course.

Information: Course content and performance objectives will be kept on file in the campus curriculum coordinator's program file.

Offered: Fall, Spring, Summer.

Communication

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CMN 102 Introduction to Speech Communication

3 cr. hrs. 3 periods (3 lec.)

Introduction to the function, basic concepts and skills of oral communication in interpersonal and public address situations. Includes foundations of communication, perception of self and others, intercultural communication, interpersonal communication and relationships, public speaking, and group communication.

Offered: Fall, Spring, Summer.

CMN 110 Public Speaking

3 cr. hrs. 3 periods (3 lec.)

Study and training in public speaking that takes an audience-centered approach. Includes the responsibilities of the public speaker and the listener, managing nervousness and causes of public speaking anxiety, topic selection, audience analysis, organizing the speech, presenting the speech, and types of public speaking.

Offered: Fall, Spring, Summer.

CMN 120 Business and Professional Communications

3 cr. hrs. 3 periods (3 lec.)

Study and training in organizational communication within a multicultural and global environment. Includes communication in a multicultural and global business environment, interpersonal communication skills in a culturally diverse workforce; researching, organizing, and delivering informative, instructional, and persuasive presentations; principles of interviewing, group process in business, listening techniques, and types of business presentations.

Offered: Fall, Spring, Summer.

CMN 130 Small Group Discussion

3 cr. hrs. 3 periods (3 lec.)

Study and training in a group communication and decision-making process. Includes the nature and functions of groups, preparation for group work, the group communication process, interpersonal relationships, problem solving and decision-making in small groups, leadership approaches, and designing and delivering small group presentations.

Offered: May not be offered this year, check class schedule.

Computer-Aided Design/Drafting

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CAD 101 Computer-Aided Drafting

4 cr. hrs. 6 periods (3 lec., 3 lab)

Two-dimensional Computer-Aided drafting (CAD) concepts and techniques. Includes CAD methods, electronic file management, freehand sketching, visualization, dimensioning, and copy production.

Information: For individuals with no computer and/or drafting experience.

Offered: Fall.

CAD 104 Integrated Circuit Layout Fundamentals

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles and concepts of integrated circuit layout using Cadence design software. Includes basic electronics, fundamentals of integrated circuits, circuit design, circuit floorplanning, electronic file management, schematic diagram, and physical layout overview.

Recommendation: CAD 114 and TEC 100.

Offered: Fall.

CAD 114 Electronic Manufacturing Processes

2 cr. hrs. 2 periods (2 lec.)

Principles and concepts of integrated circuit manufacturing processes. Includes integrated circuit device physics, semiconductor fabrication, failure mechanisms, resistors, capacitors, diodes, and metal-oxide semiconductor (MOS) transistors.

Offered: Spring.

CAD 117 Print Reading with CAD for Manufacturing

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles and concepts of print reading, technical freehand sketching, and CAD drawing. Includes common print and manufacturing terms, print fundamentals and standards, and freehand sketching. and CAD applications, and print analysis. Also includes an introduction to SolidWorks solid modeling and detail drawing production.

Offered: Fall.

CAD 127 Introduction to MicroStation

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to MicroStation basic concepts and techniques. Includes Computer-Aided drafting procedure and methods in the areas of architectural and civil design, electronic file management, software drawing setup, 2D and 3D fundamental elements creation and manipulating elements, annotation, industry standards, scale, dimensioning, hard copy production, and final project.

Offered: Fall.

CAD 142 Introduction to Parametric Modeling: SolidWorks

4 cr. hrs. 6 periods (3 lec., 3 lab)

Beginning level parametric modeling mechanical concepts, techniques, and problems using SolidWorks software. Includes parametric modeling, working drawings and assemblies.

Offered: Fall.

CAD 151 Computer-Aided Drafting for Construction

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to principles of design. Uses software, such as SketchUp, to explore design at various scales. Includes an overview of modern design, culture creation, human perception, design investigation strategies, and elements and principles of design. Also includes a comprehensive review of 3D modeling methods and presentation techniques.

Offered: Fall.

CAD 152 Technical Drafting

4 cr. hrs. 6 periods (3 lec., 3 lab)

Concepts, techniques, and applications for mechanical design which includes Computer-Aided Drafting (CAD) standards, documentation, hardware, tolerancing methods and Geometric Dimensioning and Tolerancing (GD&T).

Prerequisite(s): CAD 142.

Offered: Spring.

CAD 153 Electro-Mechanical Drafting and Design

4 cr. hrs. 6 periods (3 lec., 3 lab)

Electronic drafting fundamentals and standards, electronic component and schematic applications, and electronics concepts. Includes Computer-Aided Drafting (CAD) techniques and file management procedures.

Prerequisite(s): CAD 101.

Offered: Spring.

CAD 154 Integrated Circuit Layout Design I

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles and concepts of mixed signal integrated circuit layout using Cadence design software. Includes design process, circuit floorplanning, analog layout design, digital layout design, ESD (electro-static discharge) design and padding layout, device matching, DRC (design rule check) verification techniques, and LVS (layout versus schematic) verification techniques.

Prerequisite(s): CAD 104.

Offered: Spring.

CAD 155 Residential Computer-Aided Design

4 cr. hrs. 6 periods (3 lec., 3 lab)

Residential Computer-Aided Design Beginning level Computer-Aided Design (CAD) of single family detached dwellings. Includes residential CAD skills, site, foundation, floor and roof framing, mechanical, plumbing, and electrical plans, building and wall sections, building elevations, and working drawing coordination.

Prerequisite(s): CAD 101.

Offered: Spring.

CAD 157 Introduction to Site Development Drafting and Design

4 cr. hrs. 6 periods (3 lec., 3 lab)

Overview of site planning and design. Includes introduction to site development, applications of CAD drafting, mapping, location and direction, legal descriptions and plot plans, contour lines, details and drawings, and Geographic Information Systems.

Prerequisite(s): CAD 101.

Offered: Spring.

CAD 166 Introduction to Revit

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to Building Information Modeling (BIM) for architectural applications using Revit. Includes the basics of 3D parametric software: how to access tools, develop model, build levels and views, create drawing sheets, and plot drawings. Also includes how to integrate knowledge of building systems: site, floor plan, roof plan, building elevations, building and wall sections, and schedules.

Information: For individuals with no BIM experience.

Offered: Fall.

CAD 172 Geometric Dimensioning and Tolerancing

3 cr. hrs. 3 periods (3 lec.)

Establishing controls on sizes and allowances of mechanical parts. Includes definitions and rules, form tolerances, datums, orientation controls, location controls, runout, and profile.

Prerequisite(s): CAD 117 or 142.

Information: Prerequisites may be waived if equivalent mechanical drawing experience is documented. See CAD instructor or advisor/counselor.

Offered: Spring.

CAD 196 Independent Study in Computer-Aided Design: 100 Level

1-4 cr. hrs. 3-12 periods (3-12 lab)

Independent work at the 100 level on a special project not included in regular courses. The student is required to obtain a sponsoring CAD instructor and establish objectives, a procedural method, and a method of evaluation.

Prerequisite(s): CAD 101.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of eight credits. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

CAD 199 Co-op: Computer-Aided Drafting

1 cr. hrs. 1 periods (1 lec.)

Introduction to Cooperative Education for first-year students (instruction which provides for success in securing and retaining a training job related to subject area). Social and psychological reasons for working, methods of securing employment, preparation of career and job-related objectives and evaluation of student work experience.

Corequisite(s): CAD 199WK

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

CAD 199WK Co-op Work: Computer-Aided Design

1-8 cr. hrs. 5-40 periods (5-40 lab)

A supervised cooperative work program for students in related occupation area. Teacher- coordinators work with students and their supervisors. Variable credit is available by special arrangement.

Corequisite(s): CAD 199

Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

CAD 203 Advanced Electro-Mechanical Design

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of CAD 153. Includes standards for packaging, fastener library, 3D sheet-metal enclosures, production drawing sheets, materials and fastening systems for enclosures, and hard copy techniques and procedures.

Prerequisite(s): CAD 153

Offered: Fall.

CAD 204 Integrated Circuit Layout Design II

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of CAD 154. Includes intermediate design process, intermediate circuit floorplanning, intermediate analog layout design, intermediate digital layout design, intermediate ESD (electro-static discharge) design and padding layout, intermediate device matching, intermediate DRC (design rule check) verification techniques, and intermediate LVS (layout versus schematic) verification techniques.

Prerequisite(s): CAD 154.

Offered: Fall.

CAD 206 Commercial Design: Revit

4 cr. hrs. 6 periods (3 lec., 3 lab)

Computer-Aided Design (CAD) of a commercial building at the intermediate level using Revit. Includes intermediate commercial CAD skills, site, foundation, floor, roof framing, reflected ceiling, mechanical, plumbing, and electrical plans, building and wall sections, building elevations, working drawing coordination, special construction applications, and 3D modeling.

Prerequisite(s): CAD 166.

Offered: Spring.

CAD 207 Drafting and Design for Land Development: Civil 3D

4 cr. hrs. 6 periods (3 lec., 3 lab)

Computer-Aided Drafting (CAD) specific to sites for construction of buildings, roads, and utilities at the intermediate level. Includes intermediate civil drafting technology, intermediate surveying, intermediate location and direction, intermediate mapping, intermediate legal descriptions and plot plans, intermediate contour lines, intermediate profiles, intermediate road layout, intermediate earthwork, intermediate Geographic Information Systems (GIS).

Prerequisite(s): CAD 157.

Offered: Fall.

CAD 222 Introduction to Parametric Modeling: Inventor

4 cr. hrs. 6 periods (3 lec., 3 lab)

Beginning level parametric modeling mechanical concepts, techniques, and problems using Inventor software. Includes parametric modeling, working drawings, assemblies, animation, and plotting techniques.

Prerequisite(s): CAD 152.

Offered: Spring.

CAD 232 Advanced Parametric Modeling: Inventor

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of CAD 222. Includes advanced parametric modeling mechanical concepts, techniques, and problems using Inventor software. Also includes full assembly set, including detail drawings, sub-assemblies, and revision tracking.

Prerequisite(s): CAD 172 and 222.

Offered: Fall.

CAD 242 Advanced Parametric Modeling: SolidWorks

4 cr. hrs. 6 periods (3 lec., 3 lab)

Advanced parametric modeling and complex geometry creation techniques, advanced drawing and detailing, drawing revision, reverse engineering methods, advanced model diagnostics, and model data exchange using SolidWorks. Course includes a final design project.

Prerequisite(s): CAD 152 and 172.

Offered: Spring.

CAD 247 Transportation Design: MicroStation

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of CAD 127. Includes advanced civil drafting technology incorporating surveying and mapping data using MicroStation. Also includes the creation of digital terrain model, horizontal alignment, profiles, vertical alignment, model roadway, creation of cross sections, earthwork quantities, annotation, reports and use viewing tools to review final roadway project.

Prerequisite(s): CAD 127, 157.

Offered: Spring.

CAD 252 Introduction to Parametric Modeling: Creo

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to parametric modeling with Creo. Includes parametric modeling techniques.

Offered: Spring.

CAD 254 Integrated Circuit Layout Design III

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of CAD 204. Includes advanced design process, advanced circuit floorplanning, advanced analog layout design, advanced digital layout design, advanced ESD (electro-static discharge) design and padding layout, advanced device matching, advanced DRC (design rule check) verification techniques, and advanced LVS (layout versus schematic) verification techniques.

Prerequisite(s): CAD 204.

Offered: Spring.

CAD 256 Advanced Commerical Design: Revit

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of CAD 206 at the advanced level using Revit MEP. Includes advanced level CAD skills, advanced level commercial project programming, advanced level site, foundation, floor, roof framing, mechanical, plumbing, and electrical plans, building and wall sections, building elevations, working drawing coordination, special construction applications, model energy code, and 3D modeling.

Prerequisite(s): CAD 206.

Offered: Fall.

CAD 257 Advanced Land Development Design: Civil 3D

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of CAD 207 at the advanced level using Civil 3D. Includes advanced civil design technology, advanced surveying, advanced location and direction, advanced mapping, advanced legal descriptions and plot plans, advanced contour lines, advanced profiles, advanced road layout, advanced earthwork, and advanced Geographic Information Systems (GIS).

Prerequisite(s): CAD 207.

Offered: Fall.

CAD 265 Design and Drafting for Sustainability

4 cr. hrs. 6 periods (3 lec., 3 lab)

Computer-Aided Design and Drafting (CADD) applications specific to site and building sustainability. Includes green building fundamentals, Geographic Information Systems (GIS), introduction to 3D modeling for analysis, and detailing systems.

Prerequisite(s): CAD 155, 157 and 166.

Offered: Fall.

CAD 266 Mechanical, Electrical, Plumbing Drafting and Design:Revit MEP

4 cr. hrs. 6 periods (3 lec., 3 lab)

3D modeling of commercial mechanical, electrical, and plumbing systems. Includes integration with architectural and structural systems, and production of construction documents.

Prerequisite(s): CAD 206.

Offered: Fall.

CAD 270 Integrated Mechanical/Electro-Mechanical Design

4 cr. hrs. 6 periods (3 lec., 3 lab)

Computer-Aided design project-based learning with relevant design-rule study in preparation for project design which includes planning for prototype design, hands-on fabrication, assembly, testing, and final report assessment.

Prerequisite(s): CAD 242.

Offered: Fall, Spring.

CAD 280 Computer-Aided Design Portfolio

1 cr. hrs. 1 periods (1 lec.)

Development of materials for employment. Includes portfolio contents, resume, cover letter, practice interview, portfolio, and presentation.

Prerequisite(s): CAD 142 or 204 or 206 or 207 or 222 or 252.

Offered: Spring.

CAD 282 Advanced Parametric Modeling: Creo

4 cr. hrs. 6 periods (3 lec., 3 lab)

Advanced parametric modeling using Creo. Includes modeling advanced- level assemblies, creating detail drawings, creating assembly drawings, and project-based learning. Also includes hard copy techniques and procedures.

Offered: Spring.

CAD 296 Independent Study in Computer-Aided Design: 200-Level

1-4 cr. hrs. 3-12 periods (3-12 lab)

Independent work at the 200-level on a special project not included in regular courses. The student is required to obtain a sponsoring CAD instructor, and establish objectives, a procedural method, and a method of evaluation.

Prerequisite(s): CAD 101.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of eight credits. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Computer Information Systems

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CIS 103 Microsoft Windows Operating System

4 cr. hrs. 4 periods (4 lec.)

Professional Administration Fundamental skills necessary to perform day-to-day administration tasks in a Microsoft Windows operating system. Includes windows network administration, windows operating system, user and group accounts, network resource security, print server administration, resource and event audits, and resource monitoring.

Information: Preparation for Microsoft certification examination.

Offered: Fall, Spring, Summer.

CIS 104 Computer Fundamentals

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to computer information systems. Includes hardware, system software, networks, and threats posed by malicious software and web sites. Also includes the social and economic effects of information, using the Internet to do research, and productivity application software.

Recommendation: Completion of CSA 089 or basic computer and keyboard skills, completion of REA 091 or satisfactory score on the reading assessment test before enrolling in this course.

Information: Same as CSA 104.

Offered: Fall, Spring, Summer.

CIS 119 Network Essentials

3 cr. hrs. 3 periods (3 lec.)

Comprehensive introduction to computer networks and data communications. Includes computer networks and services, transmission media and connections, network models, popular protocol suites, other network issues, and network operating systems.

Recommendation: Completion of CIS 103 before enrolling in this course.

Offered: Fall, Spring, Summer.

CIS 120 Computer Applications for Business

4 cr. hrs. 5 periods (3 lec., 2 lab)

Introduction to computer information systems and applications with an emphasis on Microsoft applications, especially Microsoft Excel. Students will develop an awareness of the critical thinking, quantitative analysis and qualitative assessment skills that serve as the foundation for the effective and ethical use of information as part of an informed business or personal decision.

Prerequisite(s): Within the last three years: C or better in MAT 092 or satisfactory score on the mathematics assessment exam.

Offered: Fall, Spring, Summer.

CIS 121 Web Publishing

3 cr. hrs. 3 periods (3 lec.)

Introduction to website design using the most current versions of Hypertext Markup Language (HTML), JavaScript and Cascading Style Sheet (CSS). Includes PHP programming language, database access, JQuery, asynchronous JavaScript and XML (AJAX), web forms, HTML standards, web design, sessions and cookies.

Offered: Fall, Spring.

CIS 129 Programming and Problem Solving I

5 cr. hrs. 5 periods (5 lec.)

Introduction to personal and business computer systems. Includes components of a computer system; advantages and disadvantages of programming languages; traditional languages, native code and object-oriented concepts; source code versus executable code; and data structures and data representation. Also includes language statements; expressions components; control structures; problem solving techniques; program test data, debugging, and termination; and solving simple problems and creating programs using C# or Java.

Prerequisite(s): MAT 097 or concurrent enrollment.

Offered: Fall, Spring, Summer.

CIS 131 Programming and Problem Solving II

5 cr. hrs. 5 periods (5 lec.)

Continuation of CIS 129. Includes data structures and data representation, complex problem solving, procedural abstraction, and complex arrays with structured elements. Also includes object oriented programming, exception handling, file input and output, debugging, and testing.

Prerequisite(s): CIS 129.

Information: Programming assignments will use the C# or Java language.

Offered: Fall, Spring, Summer.

CIS 132 Introduction to Computer Forensics

4 cr. hrs. 4 periods (4 lec.)

Introduction to computer forensics which focuses on methods of detection and prevention of computer crime. Includes multidisciplinary nature of computer forensics; professional opportunities; computer investigations; operating systems introduction; the investigator's office and laboratory; forensic tools; and digital evidence controls. Also includes processing crime and incident scenes; data acquisition; computing forensic analysis; e-mail investigations; recovering image files; investigative report writing; and expert witness testimony.

Recommendation: Basic knowledge of computers and how to download and install software is recommended before enrolling in this course.

Offered: Fall, Spring.

CIS 133 Fundamentals of Personal Computer Security

3 cr. hrs. 3 periods (3 lec.)

Introduction to Personal Computer (PC) security and how to protect from outside threats. Includes an overview of cyber crime and security issues; networks and the Internet; assessing a personal computer system; denial of service attacks; malware; basics of securing a PC system; and data encryption. Also includes Internet fraud and security; examples of espionage in cyberspace; cyber detective work; and computer security hardware and software.

Recommendation: Completion of CIS/CSA 104 and familiarity with the Internet are recommended before enrolling in this course.

Offered: Fall, Spring, Summer.

CIS 136 Microcomputer Components

3 cr. hrs. 3 periods (3 lec.)

An overview of the primary components of common microcomputer systems. Includes systems components, systems upgrades, printer selection, installation and maintenance, disk drive selection, additional input/output devices, selecting and configuring a system, and other microcomputer topics.

Offered: Fall, Spring, Summer.

CIS 137 Introduction to the UNIX Operating System

3 cr. hrs. 3 periods (3 lec.)

Principles, tools, and history of the UNIX and Linux operating systems. Includes user utilities and some option switches, file structure and file names, regular expressions and extended regular expressions, shells, text editing, networking, and UNIX and Linux system administration.

Recommendation: Completion of CIS/CSA 104 before enrolling in this course.

Offered: Fall, Spring, Summer.

CIS 141 Introduction to VB.NET

4 cr. hrs. 4 periods (4 lec.)

Introduction to the Visual Basic.NET programming language. Includes Microsoft .NET, .NET framework, common language runtime, getting started with Visual Basic.NET (VB.NET), and object-oriented programming. Also includes user interface programming, VB.NET and the .NET framework, and using ADO.NET in VB.NET

Prerequisite(s): CIS 129.

Offered: Fall, Spring.

CIS 142 Introduction to C#

4 cr. hrs. 4 periods (4 lec.)

Introduction to Microsoft's .NET Programming Language C. Includes introduction and simple compilation and execution of programs from the Visual Studio IDE; data types and declarations; using methods; creating classes and objects; selection and repetition; and creating and using arrays. Also includes inheritance; exception handling; GUI objects and controls from the Visual Studio IDE; and handling events.

Prerequisite(s): CIS 129.

Recommendation: Completion of CIS/CSA 104, have prior programming experience, or consent of instructor before enrolling in this course.

Offered: Spring.

CIS 162 Database Design and Development

3 cr. hrs. 3 periods (3 lec.)

Introduction to database concepts and terminology. Includes file systems and databases, the relational database model, entity relationship modeling, normalization, and database design.

Offered: Fall, Spring.

CIS 170 CISCO I: Networking Fundamentals

5 cr. hrs. 5 periods (5 lec.)

Introduction to the fundamentals of networking. Includes network concepts; the Open Systems Interconnection (OSI) model; binary numbering system; network architecture; Local Area Network (LAN) design and installation; and Cisco troubleshooting procedures. Also includes preparation for Cisco certification examination.

Prerequisite(s): CIS 136.

Recommendation: Consult instructor for alternative prerequisites before enrolling in this course.

Offered: Fall, Spring, Summer.

CIS 171 CISCO II: Networking Router Technologies

5 cr. hrs. 5 periods (5 lec.)

Introduction to the fundamentals of networking router technologies. Includes networking concepts; Open Systems Interconnection (OSI) model; Local Area Network (LAN) technologies; routing protocols; router configuration files; and Cisco troubleshooting procedures. Also includes preparation for the Cisco certification examination.

Prerequisite(s): CIS 170.

Recommendation: Consult instructor for alternative prerequisites before enrolling in this course.

Offered: Spring.

CIS 172 CISCO III: Advanced Routing and Switching

5 cr. hrs. 5 periods (5 lec.)

Development of skills to configure advanced routing protocols. Includes Local Area Network (LAN) switching; Virtual LAN (VLAN); LAN design; routing protocols; access lists; and Novell Internetwork Packet Exchange (IPX) protocol. Also includes preparation for the Cisco certification examination.

Prerequisite(s): CIS 171.

Recommendation: Consult instructor for alternative prerequisites before enrolling in this course.

Offered: Fall.

CIS 173 CISCO IV: Project Based Learning

5 cr. hrs. 5 periods (5 lec.)

Design and configuration of advanced Wide Area Network (WAN) projects using Cisco IOS command set. Includes WAN design; Point-to-Point protocol (PPP); Integrated Services Digital Network (ISDN); and frame relay. Also includes preparation for Cisco certification examination.

Prerequisite(s): CIS 172.

Recommendation: Consult instructor for alternative prerequisites before enrolling in this course.

Offered: Spring.

CIS 182 Introduction to ANSI SQL

3 cr. hrs. 3 periods (3 lec.)

Introduction to the American National Standards Institute (ANSI) Structured Query Language (SQL). Includes relational databases; SQL basics and nomenclature; simple queries, search conditions, and sorting; single table query processing and unions; simple and multi-table joins; summary queries using columns, group queries, and subqueries; and query expressions. Also includes adding, deleting, and modifying data from the database; referential integrity and constraints; creating databases; creating, removing, and modifying tables; and defining constraints.

Prerequisite(s): CIS 162.

Information: CIS 162 may be waived with consent of instructor.

Offered: Fall, Spring.

CIS 185 Introduction to Python

4 cr. hrs. 4 periods (4 lec.)

Introduction to the Python programming language. Includes statements, syntax, strings, lists, dictionaries, tuples, dynamic types, classes, modules, functions, numeric operations, file I/O, exception handling, and application development using IDLE.

Prerequisite(s): CIS 131, CIS 182.

Offered: May not be offered this year, check class schedule.

CIS 187 Data Processing Projects I

1-3 cr. hrs. 3-9 periods (3-9 lab)

Provides practical work experience with academic study. Includes problem solving, job site interpersonal relations, and directed independent studies of computer-related topics. Also includes lab exercises involving operating system tasks, word processing, spreadsheets, electronic mail, and the Internet.

Recommendation: It is recommended that students successfully complete four CIS courses before enrolling in this course.

Offered: May not be offered this year, check class schedule.

CIS 199 Introductory Co-op: Computer Information Systems

1 cr. hrs. 1 periods (1 lec.)

Introduction to Cooperative Education for first-year students (instruction which provides for success in securing and retaining a training job related to subject area). Includes communication skills, time and energy management, stress and its management, careers: information and its uses, job market, principles, theories, and practices in the career field, and problems in the work situation.

Corequisite(s): CIS 199WK

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

CIS 199WK Introductory Co-op Work: Computer Information Systems

1-8 cr. hrs. 5-40 periods (5-40 lab)

A supervised cooperative work program for students in related occupation area. Teacher-coordinators work with students and their supervisor. Variable credit is available by special arrangement.

Corequisite(s): CIS 199

Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

CIS 216 Introduction to Wireshark and Network Analysis

4 cr. hrs. 4 periods (4 lec.)

Introduction to network analysis with Wireshark. Includes key Wireshark elements and traffic flows, views and settings, capture method and capture filters, display filters on specific traffic, color and export interesting packets, build and interpret tables and graphs, traffic for faster analysis, comments to trace files and packets, and command-line tools.

Prerequisite(s): CIS 119 or 170.

Information: The prerequisite(s) may be waived with consent of instructor.

Offered: Spring.

CIS 218 Introduction to Voice over IP (VoIP)

4 cr. hrs. 4 periods (4 lec.)

Introduction to the concepts of Voice over Internet Protocol (VoIP) from the history to expected future uses in the workplace and home. Includes an overview, digital voice fundamentals, standards, how an Internet Protocol (IP) phone call works, protocols and structure, relationship to the Open Standards Interconnection (OSI) model, gateways, quality of service, and router concerns.

Recommendation: Completion of an introductory course in networking or have networking experience before enrolling in this course.

Offered: Spring.

CIS 219 Introduction to Virtual Computing

4 cr. hrs. 4 periods (4 lec.)

Introduction to the concept of virtualization in computers and virtualization products that permit configuration and management of virtualized environments. Includes installation and configuration of VMware workstation, VMware server, Microsoft virtual server, and Microsoft Hyper-V. Also includes working with virtual networks, implementing disaster recovery and high availability, enhancing virtual security and performance, and working with virtual machine manager.

Prerequisite(s): CIS 119 or 170.

Information: Consult instructor for alternative prerequisite(s) before enrolling in this course.

Offered: Fall, Spring.

CIS 221 Microsoft Windows Server

4 cr. hrs. 4 periods (4 lec.)

Knowledge and skills necessary to install, configure, customize, optimize networks, integrate, and troubleshoot Windows server. Includes overview of Windows networking, managing Windows server, Windows components, and Internetworking and Intranetworking. Also includes active directory services, advanced file systems, Windows security, booting Windows, and Windows application servers.

Prerequisite(s): CIS 103.

Information: Preparation for Microsoft certification examination.

Offered: Fall, Spring.

CIS 222 Implementing Windows Network Infrastructure

4 cr. hrs. 4 periods (4 lec.)

Knowledge and skills to install, configure, maintain, and support a Microsoft Windows network infrastructure. Includes Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), Windows Internet Name Service (WINS), traffic security, remote access, network router, remote installation, connectivity with other operating systems, and Web server.

Prerequisite(s): CIS 221.

Information: Preparation for Microsoft certification examination.

Offered: Spring.

CIS 223 Implementing Windows Directory Services

4 cr. hrs. 4 periods (4 lec.)

Knowledge and skills to install, configure, and administer Microsoft Windows Active Directory directory services. Includes active directory structure, Active Directory directory services, Domain Name System (DNS), group policy implementation, user accounts, software development, group policy security, and administration of active directory objects.

Prerequisite(s): CIS 221.

Offered: Fall.

CIS 224 Designing Windows Network Security

4 cr. hrs. 4 periods (4 lec.)

Knowledge and skills to analyze business requirements and processes to design a security solution for a Microsoft Windows network. Includes technical requirements, security requirements, security solution on a Windows network, security solution for access between networks, and security for communication channels.

Prerequisite(s): CIS 223.

Information: Preparation for Microsoft certification examination.

Offered: May not be offered this year, check class schedule.

CIS 225 Linux (UNIX) System and Network Administration

4 cr. hrs. 4 periods (4 lec.)

Operations and network administration of the Linux (UNIX) system. Includes background review, basic Linux installation installing software packages, network file services configuration, SAMBA file and print server, Apache web server, and file transfer protocol (FTP).

Prerequisite(s): CIS 137.

Offered: Fall, Spring.

CIS 226 Advanced Linux Networking

4 cr. hrs. 4 periods (4 lec.)

Advanced concepts in Linux and UNIX networking. Includes background review, basic Linux installation, Network File System (NFS) configuration, Network Information System (NIS) configuration, squid proxy, firewalls, and Lightweight Directory Access Protocol (LDAP).

Prerequisite(s): CIS 225.

Offered: Fall, Spring.

CIS 228 Fundamentals of Network Security

4 cr. hrs. 4 periods (4 lec.)

Introduction and general overview of security measures for computer networks. Includes authentication methods and techniques; attacks and malicious code; remote access concepts; email and web security; directory and file transfer services; and wireless protocols and security. Also includes hardware devices; topologies and security; methods of intrusion detection; establishing security baselines; introduction to cryptography; disaster recovery policies and procedures; and forensics, risk management, and auditing measures.

Recommendation: It is recommended that students complete CIS 119 or obtain consent of instructor prior to enrolling in this course.

Information: This course prepares students to take the CompTIA Security Exam.

Offered: Fall, Summer.

CIS 229 Protecting Your PC and Network: CounterMeasures to Network

4 cr. hrs. 4 periods (4 lec.)

Intrusion Introduction to networking vulnerabilities within various protocols and operating systems. Includes an overview of cyber crime and security issues, networks and the Internet, assessing and securing a personal computer (PC) system, denial of service attacks, malware, and data encryption. Also includes Internet fraud and security, espionage in cyberspace, cyber detective work, and computer security hardware and software.

Recommendation: Completion of CIS 119 or 170, and 228 before enrolling in this course.

Offered: Spring.

CIS 235 Advanced Topics in Linux/Unix Security

4 cr. hrs. 4 periods (4 lec.)

Overview for intermediate users of Linux and Linux administrators focusing on security issues. Includes background review, discovering network vulnerabilities, vulnerability mitigation, management awareness, intrusion detection, data gathering, and WiFi.

Recommendation: Completion of CIS 225 is recommended before enrolling in this course.

Offered: Fall, Spring.

CIS 241 Advanced Visual Basic.NET Programming

4 cr. hrs. 4 periods (4 lec.)

Advanced course in Visual Basic.NET programming with special emphasis on the new NET Framework and how it is used to create distributed applications. Includes review of VB.NET basics, basic Web programming, server-side Web programming with VB.NET, accessing data with VB.NET, and introduction and advanced VB.NET applications.

Prerequisite(s): CIS 141.

Offered: Fall.

CIS 250 Introduction to Assembly Language

3 cr. hrs. 3 periods (3 lec.)

Beginning assembly language programming. Includes number systems, machine architecture, program design, the assembler, the stack, array processing and indexing, and sorting. Also includes program debugging and testing, performance issues, program profiling, and programmer productivity issues.

Prerequisite(s): CIS 131.

Recommendation: Consult instructor for alternative prerequisites before enrolling in this course.

Offered: Fall, Spring.

CIS 265 The C Programming Language

4 cr. hrs. 4 periods (4 lec.)

Principles and syntax of ANSI Standard C and many of the common library functions. Includes writing C programs in portable code to facilitate systems programming concepts.

Prerequisite(s): CIS 250 or concurrent enrollment.

Offered: Fall, Spring.

CIS 269 Data Structures

5 cr. hrs. 5 periods (5 lec.)

Advanced topics in computer science and programming in C++. Includes software engineering concepts and theory, memory management, inheritance, overloading, abstract classes, review of C++, stacks, queues, recursion, and dynamic abstract data structures. Also includes templates, hash tables, sort and search algorithms, file handling and streams, trees, graphs and networks.

Prerequisite(s): CIS 278.

Offered: Fall.

CIS 276 Mobile App Programming: Android I

4 cr. hrs. 4 periods (4 lec.)

Topics in computer science and programming in Java specific to Mobile App Programming on Androids. Includes software engineering concepts and theory, Graphical User Interface (GUI) concepts, memory management, inheritance, and exceptions. Also includes eXtensible Markup Language (XML), emulators (Android Virtual Devices), installing, debugging, and an introduction to the Android database system (SQLite).

Prerequisite(s): CIS 131.

Offered: May not be offered this year, check class schedule.

CIS 277 Mobile App Programming: Android II

4 cr. hrs. 4 periods (4 lec.)

Advanced topics in computer science and programming in Java specific to Mobile App Programming on Androids. Includes advanced software engineering concepts and theory, Event Handling, Graphical User Interface (GUI) concepts, memory management and complexity. Also includes eXtensible Markup Language (XML), emulators (Android Virtual Devices), debugging.

Information: CIS 276 or instructor approval is required before enrolling.

Offered: May not be offered this year, check class schedule.

CIS 278 C++ and Object-Oriented Programming

4 cr. hrs. 4 periods (4 lec.)

Concepts and implementation of object-oriented programming and design using C++ Includes the language syntax of C++ applications using C++ objects to solve information systems problems, and class libraries created for reuse and inheritance.

Prerequisite(s): CIS 131.

Information: Prerequisite may be waived with consent of instructor.

Offered: Fall, Spring.

CIS 279 Java Programming

5 cr. hrs. 5 periods (5 lec.)

Introduction to the Java programming language. Includes review of fundamentals; objects, classes, and methods; extending classes and overriding methods; text input and output to console; and handling events, scrollbars, and mouse events. Also includes working with fonts, colors, menus, checkboxes, lists, choices, and other GUI components; and creating and using Applets.

Prerequisite(s): CIS 131.

Offered: Fall, Spring.

CIS 280 Systems Analysis and Design: Concepts and Tools

4 cr. hrs. 4 periods (4 lec.)

Concepts of systems analysis and design for all phases of the systems development life cycle. Includes problem identification, project initiation and planning, analysis, logical design, physical design, implementation and testing, and operations and maintenance. Also includes specific tools used by systems analysts, introduction and use of CASE (Computer-Aided software engineering) tools, and project management software.

Prerequisite(s): CIS 131 or 162.

Offered: Fall, Spring.

CIS 281 Systems Analysis and Design: Applications

3 cr. hrs. 3 periods (3 lec.)

Concepts and tools of systems analysis applied to specific projects. Includes performing a project from problem initiation through to implementation using CASE tools, project management software, and appropriate software development tools.

Prerequisite(s): CIS 280.

Offered: Fall.

CIS 283 Advanced Python

4 cr. hrs. 4 periods (4 lec.)

Advanced features of the Python programming language. Includes object-oriented programming, database access, GUI development with tkinter, web applications.

Prerequisite(s): CIS 185.

Offered: May not be offered this year, check class schedule.

CIS 299 Advanced Co-op: Computer Information Systems

1 cr. hrs. 1 periods (1 lec.)

See Cooperative Education (CED) section for description.

Corequisite(s): CIS 299WK

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

CIS 299WK Adv Co-op Work: Comp Info Sys

1-8 cr. hrs. 5-40 periods (5-40 lab)

Advanced Co-op Work: Computer Information Systems See Cooperative Education (CED) section for description.

Corequisite(s): CIS 299

Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

Computer Software Applications

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CSA 089 Beginning Computer Skills

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Beginning approach to operating a computer with a focus on basic computer skills and computer terminology. Includes Windows basics, Internet basics, fundamentals of Pima Community College web site and MyPima, email basics, and basic word processing skills.

Offered: May not be offered this year, check class schedule.

CSA 100 Computer Literacy

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Overview of computer applications and functions. Includes components of a computer system, spreadsheet, database, and word processing use within a workplace. Also includes computer networks for communication and information.

Recommendation: Completion of CSA 089 or basic computer and keyboard skills, completion of REA 091 or satisfactory score on the reading assessment test before enrolling in this course.

Information: CSA 100 meets occupational general education computer and information literacy requirements and is a one credit version of CIS/CSA 104.

Offered: Fall, Spring, Summer.

CSA 104 Computer Fundamentals

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to computer information systems. Includes hardware, system software, networks, and threats posed by malicious software and web sites. Also includes the social and economic effects of information, using the Internet to do research, and productivity application software.

Recommendation: Completion of CSA 089 or basic computer and keyboard skills, completion of REA 091 or satisfactory score on the reading assessment test before enrolling in this course.

Information: Same as CIS 104.

Offered: Fall, Spring, Summer.

CSA 110 Spreadsheets: Microsoft Excel

3 cr. hrs. 4 periods (2 lec., 2 lab)

Fundamentals of spreadsheet applications using Microsoft Excel. Includes spreadsheet concepts, formulas and functions, formatting worksheets and cells, working with charts and graphics. Also includes Excel lists, managing multiple worksheets and workbooks, collaborating on a workbook, developing an Excel application, data tables and Scenario management, using Solver, importing data, and advanced functions and filtering.

Prerequisite(s): MAT 086, or required score on the mathematics assessment test, or TEC 111.

Recommendation: Completion of CSA 089 or basic computer skills, completion of REA 091 or required score on the Compass Reading assessment test before enrolling in this course.

Information: Prerequisite may be waived with consent of instructor.

Offered: Fall, Spring, Summer.

CSA 120 Word Processing: Word

3 cr. hrs. 4 periods (2 lec., 2 lab)

Word processing techniques using Microsoft Word create, compare, and manage a range of documents. Includes application of templates, themes, styles, mail merge, web pages, macros, tables, forms, cross references, and indexes.

Recommendation: CSA 089 or basic computer skills, completion of REA 091 or satisfactory score on the reading assessment test.

OAP 111 or keyboarding by touching at 30 wpm.

Offered: Fall, Spring.

CSA 130 PowerPoint

3 cr. hrs. 4 periods (2 lec., 2 lab)

Fundamentals of Microsoft PowerPoint presentation software. Includes introduction to PowerPoint, beginning a presentation, templates and wizards, color scheme, drawing tools, clip art, presentation in outline view, toolbars, organization charts, graphs, advanced text and graphics, templates and the slide master, slide shows, output and presentation options, animation, video, sound, creating action buttons, connecting to the Internet, and running a slide show.

Recommendation: Basic computer skills, completion of REA 091 or equivalent score on the reading assessment.

Offered: Spring.

CSA 170 Database: Access

3 cr. hrs. 4 periods (2 lec., 2 lab)

Techniques for using Microsoft Access. Includes an overview of Microsoft Access, creating tables, working with tables, creating and using select queries, creating and using forms, creating and using reports, creating a report that contains totals, principles of table design and relationships, table design techniques, designing select queries, customizing form designs, working with data access pages, customizing reports, parameter and action queries, query joins and crosstab queries, using advanced form techniques, creating basic macros to automate forms, using macros to provide user interaction and automate tasks, using advanced report techniques, and Access, and the Internet.

Recommendation: Completion of CSA 089 or basic computer skills, completion of REA 091 or required score on the Reading assessment test before enrolling in this course.

Offered: Fall, Spring.

CSA 182 Microsoft Windows: Current Version

3 cr. hrs. 4 periods (2 lec., 2 lab)

Overview of the Microsoft Windows operating system. Includes introduction to Windows, active desktop, multitasking, Windows help features, Windows Explorer, file management, Windows accessories, exchanging data between programs, print management, control panel, customizing Windows, and networking with Windows.

Recommendation: Completion of CSA 089 or basic computer skills, completion of REA 091 or required score on the Reading assessment test before enrolling in this course.

Offered: May not be offered this year, check class schedule.

CSA 210 Microsoft Excel Fundamentals

2 cr. hrs. 4 periods (1 lec., 3 lab)

Basic and intermediate functions and features of Microsoft Excel. Includes cells and cell content, data analysis, formula calculations, graphics, workgroup collaborations, format and print worksheets, and managing and modifying workbooks. Also includes preparation for the Microsoft Office Specialist (MOS) Excel Certification.

Information: Completion of CSA 089, CSA 100, or basic computer skills, and completion of REA 091 or testing above REA 091 on the Reading assessment test before enrolling in this course.

Offered: May not be offered this year, check class schedule.

Cooperative Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CED 199 Co-Op: Liberal Arts

1 cr. hrs. 1 periods (1 lec.)

Introduction to Cooperative Education for first-year students (instruction which provides for success in securing and retaining a training job related to subject area). Includes communication skills, time and energy management, stress and its management, careers: information and its uses, job market, principles, theories, and practices in the career field, and problems in the work situation.

Corequisite(s): CED 199WK

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

CED 199WK Co-op Work: Liberal Arts

1-8 cr. hrs. 5-40 periods (5-40 lab)

A supervised cooperative work program for students in related occupation area. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

Corequisite(s): CED 199

Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Crime Scene Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CSM 100 Intro to Photo Equip and Proc for Crime Scene Investigations

1 cr. hrs. 1 periods (1 lec.)

Focus on developing skills in photographing a crime scene. Includes processing black and white films and paper. Also includes tools and equipment, taking basic crime scene photographs, and chemical processes used in processing crime scene photographs.

Offered: May not be offered this year, check class schedule.

CSM 101 Criminalistics

2 cr. hrs. 2 periods (2 lec.)

Focuses on awareness and identification of both physical and biological evidence associated with crime scenes, with an emphasis on scientific analysis. Includes discussion on fingerprints, ballistics, DNA and blood evidence, hair and fibers, tool marks, bite marks, glass fragments, handwriting analysis, the scientific technology behind the investigative process, safety issues, and the future of criminalistics.

Offered: May not be offered this year, check class schedule.

CSM 102 Crime Scene Photography

1 cr. hrs. 1 periods (1 lec.)

Focuses on the specific skills needed to photograph various types of crime scene situations. Includes 1:1 photography, trace evidence, proper use of photographic equipment for crime scene investigations, and photographing post mortem injuries.

Prerequisite(s): CSM 100.

Offered: May not be offered this year, check class schedule.

CSM 103 Latent Processing

1 cr. hrs. 1 periods (1 lec.)

Techniques involved in developing latent fingerprints. Includes physical characteristics, types of fingerprints, principles of fingerprinting, fingerprint collection, fingerprint surfaces, and the photography of latent prints.

Offered: May not be offered this year, check class schedule.

CSM 104 Fingerprint Identification

3 cr. hrs. 3 periods (3 lec.)

Provides in-depth study and analysis of fingerprints and their comparative value. Includes fingerprinting history, basic pattern types, identification standards and protocols, fingerprint pattern interpretations, and classification systems.

Offered: May not be offered this year, check class schedule.

CSM 105 Blood Pattern Documentation

.5 cr. hrs. .5 periods (.5 lec.)

Focuses on awareness of evidentiary value associated with bloodstain interpretation and the importance of proper photographic documentation. Includes discussion on stain and flow patterns, surface considerations, photographing blood patterns, health hazards, and blood detection presumptive tests.

Offered: May not be offered this year, check class schedule.

CSM 106 Ballistics

.5 cr. hrs. .5 periods (.5 lec.)

Focuses on firearms, safety and basic evidence collection in crime scene management. Includes firearms and ammunition recognition and identification, ammunition components and homemade bombs. Also includes the scientific technology involved in comparative analysis.

Offered: May not be offered this year, check class schedule.

CSM 107 Courtroom Testimony and Report Writing

.5 cr. hrs. .5 periods (.5 lec.)

Focuses on general court practices expected of a crime scene investigator. Includes extensive use of mock/moot trial methods to prepare students for court cases. Also includes developing complete and accurate case reports, tools used by defense attorneys, cross examination, and pre-trial interviews.

Information: This course emphasizes writing skills.

Offered: May not be offered this year, check class schedule.

Culinary Arts

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

CUL 100 Culinary Bootcamp

3 cr. hrs. 5 periods (1 lec., 4 lab)

Intensive introduction to the fundamentals of cooking that covers kitchen operation and culinary techniques. Includes instruction in kitchen skills; equipment and utensils; use and storage of ingredients; and safety precautions. Also includes demonstrations of various cooking methods, such as dry heat cooking (roasting, grilling, sauteing, pan frying), moist heat cooking (braising, shallow poaching, deep poaching, steaming), baking (techniques and production), and sauce preparation. Also includes instruction in culinary and kitchen terminology.

Information: Students who enter the AAS program in Culinary Arts may use this course as an elective.

Offered: May not be offered this year, check class schedule.

CUL 101 Principles of Restaurant Operations

3 cr. hrs. 3 periods (3 lec.)

Fundamentals of operating and managing small and large restaurants. Includes concept development; menu development and food purchases; kitchen equipment; budgeting and cost control; financing and leasing; and legal and tax matters. Also includes restaurant organization, job definitions and staffing, employee training, marketing, sales and promotion, and customer relations.

Offered: Fall, Spring.

CUL 110 Food Service Nutrition

2 cr. hrs. 2 periods (2 lec.)

Basic nutrition concepts with an emphasis on the nutritional concerns of restaurants and other types of food service operations. Includes health and nutrition; evaluation and use of popular and commercial nutrition information; nutrition elements, such as carbohydrates, lipids, proteins, vitamins, minerals, and water; energy metabolism/balance; and nutrition principles and the life cycle.

Offered: Fall, Spring.

CUL 115 Food Service Sanitation and Safety

3 cr. hrs. 3 periods (3 lec.)

Theory and practice of food service safety and sanitation. Includes creating a safe food service environment; food-borne illnesses; Hazard Analysis Critical Control Points (HACCP); sanitation in the purchasing, receiving, and storage of food; and sanitation in the preparation and service of food. Also includes maintaining sanitary facilities and equipment, safety and accident prevention, and legal requirements for food service safety and sanitation. Reviews legal elements of food service sanitation based on requirements and recommendations of Pima County Health Department.

Offered: Fall, Spring, Summer.

CUL 130 Hot Foods I

3 cr. hrs. 5 periods (1 lec., 4 lab)

Introduction to all facets of hot foods. Includes classic stocks; sauces; soups; liaisons such as roux and starches; cooking techniques; preparation of vegetables; and butchering.

Corequisite(s): CUL 150, CUL 160

Offered: Fall, Spring.

CUL 140 Culinary Principles

3 cr. hrs. 3 periods (3 lec.)

Introduction to the culinary profession. Includes professionalism, responsibilities, food service vocabulary, menu elements, principles of cooking, and tools and equipment. Also includes knives and knife skills, food tasting, identifying and describing stocks and sauces, herbs and spices, chocolate, and vegetables.

Offered: Fall, Spring, Summer.

CUL 150 Garde Manger

3 cr. hrs. 5 periods (1 lec., 4 lab)

Introduction to the fundamentals of Garde Manger. Includes care of equipment; knife skills; basic sandwiches; herbs and spices; salad greens; dressings (emulsified and non-emulsified); and commercial cooking techniques.

Corequisite(s): CUL 130, CUL 160

Offered: Fall, Spring.

CUL 153 Cakes

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Introduction to the art of cake baking. Includes the ingredients, preparation, and baking of cakes. Also includes icings, decorations, and fillings.

Offered: Fall, Spring.

CUL 156 Pies

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Introduction to the art of baking pies. Includes a variety of pastry dough, fillings, and other ingredients for creating pies and tarts. Also includes mixing; shaping; baking; and plating and presentation.

Offered: Fall, Spring.

CUL 160 Bakery and Pastry Production I

3 cr. hrs. 5 periods (1 lec., 4 lab)

A comprehensive introduction to preparing an array of baked goods and sweets. Includes yeast breads; quick breads; creams and custards; cakes; filling and frostings; cookies and brownies; elementary plating; and decorating and garnishing techniques. Also includes ingredients; bakery and pastry vocabulary; and safety and sanitation.

Corequisite(s): CUL 130, CUL 150

Offered: Fall, Spring.

CUL 161 Cake Decorating and Candy Making

3 cr. hrs. 5 periods (1 lec., 4 lab)

Basic principles and methods of cake decorating and candy making. Includes history of cakes; selection of ingredients; cooking procedures; cake assembly; and presentation. Also includes techniques for creating basic candies, including holiday treats.

Offered: Fall, Spring.

CUL 162 Art of Chocolate

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Introduction to chocolate in the culinary arts. Includes an introduction to the properties of chocolate and the history of chocolate. Also includes preparation of truffles, dough and batter, and molded and free form chocolate art work.

Offered: Fall, Spring.

CUL 163 Sauces

3 cr. hrs. 5 periods (1 lec., 4 lab)

Concepts, skills, and techniques for sauce and stock creation. Includes preparation of stocks and sauces in a traditional manner and their uses in classic and contemporary kitchens. Also includes identification of and appropriate uses for liaisons.

Offered: Fall, Spring.

CUL 166 Gluten-Free Baking

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Introduction to the art of gluten-free baking. Includes gluten-free breads, desserts, and pizza. Also includes mixing, shaping, baking, and plating and presentation.

Offered: Fall, Spring.

CUL 168 Specialty and Hearth Breads

3 cr. hrs. 5 periods (1 lec., 4 lab)

Preparation, baking, and evaluation of specialty and hearth breads. Includes the evolution of bread products, bread preparation, and the proper use of flour and yeast. Also includes preparing a variety of classic artisan bread shapes, presenting attractive finished products, and judging the quality of finished breads. Also includes health and sanitation considerations in bread making.

Information: Consent of Culinary Arts Department is required before enrolling in this course.

Offered: Fall, Spring.

CUL 170 Dining Room Operations

2 cr. hrs. 2 periods (2 lec.)

Theory and practice of operating a casual dining room. Includes preparation for guest service, proper etiquette for serving guests and clearing tables, wine and beverage sales and service, salesmanship, and customer service.

Offered: May not be offered this year, check class schedule.

CUL 180 Food in History

3 cr. hrs. 3 periods (3 lec.)

History of food, the story of cuisine, and the social history of eating. Includes collecting, gathering and hunting food; stock-breeding and farming; sacramental foods; the economy of food markets; the era of merchants; New World food discoveries; and professional food preparation.

Offered: Fall, Spring.

CUL 185 Catering Operations

2 cr. hrs. 2 periods (2 lec.)

Theory and practice of planning and executing catering functions. Includes booking and planning, banquet room set-up and staffing, banquet service, guest payment and follow up, and specialized functions.

Offered: Fall, Spring.

CUL 199 Co-op: Culinary Arts

1 cr. hrs. 1 periods (1 lec.)

See Cooperative Education section for description.

Offered: May not be offered this year, check class schedule.

CUL 199WK Co-op Work: Culinary Arts

1-3 cr. hrs. 5-15 periods (5-15 lab)

A supervised cooperative work program for students in culinary arts. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

CUL 230 Hot Foods II

3 cr. hrs. 5 periods (1 lec., 4 lab)

Continuation of preparation and service of hot food in a contemporary kitchen. Includes cooking techniques; contemporary sauce making; vegetables, grains, and starches; natural liaisons; food plating; and sanitation procedures and techniques.

Prerequisite(s): CUL 130 and 140.

Offered: Fall, Spring.

CUL 251 International Cuisine: World of Flavor

3 cr. hrs. 5 periods (1 lec., 4 lab)

Concepts, skills, and techniques used to create global cuisine. Includes ingredients and foods from around the world. Also includes culinary techniques that incorporate culture and food traditions from Latin America, the Mediterranean, Europe, Asia, and the United States.

Corequisite(s): CUL 230, CUL 260

Offered: Fall, Spring.

CUL 260 Bakery and Pastry Production II

3 cr. hrs. 5 periods (1 lec., 4 lab)

Advanced theory and practice of operating a bakery or pastry shop in a hotel or restaurant kitchen. Includes planning, ordering, and scheduling for bakery production; safety and sanitation; and bakery and pastry vocabulary. Also includes advanced yeast breads; classic French pastries; ice cream and frozen desserts; pastry assembly; pastry garnishes; and complex plated desserts.

Prerequisite(s): CUL 160.

Corequisite(s): CUL 230, CUL 251

Offered: Fall, Spring.

CUL 261 Advanced Cake Decorating

3 cr. hrs. 5 periods (1 lec., 4 lab)

Advanced principles and methods of cake decorating. Includes advanced flower design, gum paste, airbrush, photo transfer, fondant, and chocolate artistry. Also includes advanced techniques for creating cakes for weddings and other special occasions.

Prerequisite(s): CUL 161.

Offered: Fall, Spring.

Dance

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

DNC 107 Dance Conditioning

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction to the concepts of dance as a strengthening, stretching, and cardiovascular activity and the awareness of alignment techniques through specific movement experiences and images. Includes class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements of dance, and developing the craft.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

DNC 130 Tap Dance

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction to tap dancing. Includes class protocol, warm up, standing and center floor work, locomotor work, elements and developing the craft.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

DNC 150 Ballet I

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction to the theory and practice of ballet at the beginning level. Includes terminology, barre, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

DNC 151 Ballet II

2 cr. hrs. 3 periods (1 lec., 2 lab)

Continuation of DNC 150. Includes ballet techniques at the intermediate level, terminology, barre, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

Prerequisite(s): DNC 150.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

DNC 152 Ballet III

2 cr. hrs. 3 periods (1 lec., 2 lab)

Continuation of DNC 151. Includes ballet technique at the advanced level, ballet terminology, barre, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

Prerequisite(s): DNC 151.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

DNC 166 Modern Dance I

2 cr. hrs. 3 periods (1 lec., 2 lab)

Development of basic skills for dance. Includes modern dance technique at a beginning level, class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

DNC 167 Modern Dance II

2 cr. hrs. 3 periods (1 lec., 2 lab)

Continuation of DNC 166. Includes development of intermediate skills for modern dance, class protocol, warm up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

Prerequisite(s): DNC 166.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

DNC 168 Modern Dance III

2 cr. hrs. 3 periods (1 lec., 2 lab)

Continuation of DNC 167. Includes development of advanced skills for modern dance, class protocol, warm-up, floor work, locomotor work, elements, and developing the craft.

Prerequisite(s): DNC 167.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

DNC 180 Choreography

2 cr. hrs. 2 periods (2 lec.)

The study of basic dance composition and construction of a phrase, structure, and form. Includes exploring the basic elements of dance, building a movement phrase, choreographic elements, constructing a dance, and analyzing the effectiveness of choreography.

Prerequisite(s): DNC 150 or 166 or 219.

Information: Prerequisites may be waived with consent of instructor.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

DNC 200 Dance Appreciation and History

3 cr. hrs. 3 periods (3 lec.)

Introduction to the art of dance from its beginning as a religious form to its current place on Broadway and television.

Includes concepts in dance appreciation, themes and purposes of dance, analyzing dance works, styles of dance, roles of and major historical periods of world dance, and movement sessions.

Offered: Fall.

DNC 219 Jazz Dance I

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction and development of movement skills necessary to prepare the body as an instrument of expression in jazz dance styles. Includes class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

DNC 220 Jazz Dance II

2 cr. hrs. 3 periods (1 lec., 2 lab)

Continuation of DNC 219. Progressive development of alignment for intermediate level jazz dance. Includes class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

Prerequisite(s): DNC 219.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

DNC 221 Jazz Dance III

2 cr. hrs. 3 periods (1 lec., 2 lab)

Continuation of DNC 220. Progressive development of alignment for advanced level jazz dance. Includes class protocol, warm-up, floor work, standing and center floor work, locomotor work, elements, and developing the craft.

Prerequisite(s): DNC 220.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

DNC 230 Rhythms for Dance

2 cr. hrs. 2 periods (2 lec.)

Exploration of the elements of music and music structures and their relationship to dance. Includes musical composition forms, rhythmic dance accompaniment, musical instruments, musical scores, and creation of dance accompaniment.

Prerequisite(s): DNC 150 or 166 or 219.

Offered: Summer.

DNC 269 Dance Ensemble

3 cr. hrs. 6 periods (6 lab)

Practical experience in all aspects for taking a dance piece from basic choreography and creating a professional performance. Includes rehearsal/performance process, responsibilities of a performer and/or a choreographer, performance skills, choreographic review; costuming, make-up, sets, and props; publicity and analysis of the concert.

Prerequisite(s): DNC 150 or 166 or 219.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

DNC 280 Business for Dance Careers

3 cr. hrs. 3 periods (3 lec.)

Introduction to the various careers available in dance and the appropriate business skills. Includes careers in dance, grant and proposal writing, agency interface, business skills, publicity, and creating a dance business on paper.

Offered: Spring.

DNC 296 Independent Studies in Dance

1-3 cr. hrs. 2-6 periods (2-6 lab)

Composition and/or in-depth independent study in an area of the student's choice with approval by the supervising instructor.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this class.

Offered: May not be offered this year, check class schedule.

Dental Assisting Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

DAE 159 Introduction to Health Care for Dental Assisting

2 cr. hrs. 2 periods (2 lec.)

Basic skills essential to working successfully with patients and co-workers in dental offices and clinics as a member of the dental health team. Includes study skills and psychology, vital signs, communication in the dental environment, job entry skills, and research and oral speech projects.

Corequisite(s): DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 160 Orientation to Dental Care

1 cr. hrs. 1 periods (1 lec.)

Overview of the field of dental care. Includes the profession of dentistry, areas of service, and ethics and jurisprudence.

Corequisite(s): DAE 159, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 161 Biomedical Dental Science

3 cr. hrs. 3 periods (3 lec.)

The biosciences as they relate to the oral cavity. Includes anatomy, physiology, microbiology, oral pathology, and nutrition as each affects total dental health.

Corequisite(s): DAE 159, DAE 160, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 162 Dental Assisting I

2 cr. hrs. 2 periods (2 lec.)

Principles and techniques of dental assisting. Includes tooth morphology, of human dentition, hand and rotary dental instruments and their use in various operative procedures, and chairside procedures.

Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 162LB Dental Assisting I Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DAE 162.

Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 163 Oral Radiography

2 cr. hrs. 2 periods (2 lec.)

Introduction to dental roentgenography as a diagnostic aid. Includes radiation protection, dental film, film processing, digital radiography, identification of anatomical landmarks for mounting and interpretation, exposure techniques, and principles of supplementary film.

Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163LC, DAE 164, DAE 164LB, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 163LC Oral Radiography Clinical Lab

1 cr. hrs. 3 periods (3 lab)

This is the Clinical Lab portion of DAE 163.

Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 164, DAE 164LB, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 164 Dental Materials

2 cr. hrs. 2 periods (2 lec.)

Chemical and physical properties of dental materials used in dental practice. Includes introduction to dental materials; preventive sealants and restorative materials; dental cements; impression materials; gypsum products; miscellaneous dental materials; and gold, non-precious alloys, and casting of metals.

Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164LB, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 164LB Dental Materials Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DAE 164.

Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 165, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 165 Dental Assisting Procedures I

1 cr. hrs. 1 periods (1 lec.)

Techniques and procedures of chairside dental assisting. Includes dental equipment and room design, chairside assisting and team approach, procedures applied in clinical treatment, and computer systems and technology in the dental environment. Also includes the application of student supervised experience in performing dental assisting functions in the clinical setting on patients.

Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

DAE 165LC Dental Asst Procdrs Clinical I

1 cr. hrs. 4 periods (4 lab)

This is the clinical lab portion of DAE 165.

Corequisite(s): DAE 159, DAE 160, DAE 161, DAE 162, DAE 162LB, DAE 163, DAE 163LC, DAE 164, DAE 164LB, DAE 165

Offered: Fall.

DAE 166 Dental Assisting II

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of dental assisting. Includes pharmacology and therapeutics, techniques and procedures for emergency medical/dental care as applied to dental assisting, and dental office inventory control.

Prerequisite(s): DAE 159, 160, 161, 162/162LB, 163/163LC, 164/164LB and 165/165LB.

Corequisite(s): DAE 167, DAE 169, DAE 169LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Spring.

DAE 167 Dental Assisting III

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of dental practices management and oral health education as applied to dental assisting. Includes preventive dentistry in dental health education, dental office procedures, and summary and evaluation.

Prerequisite(s): DAE 159, 160, 161, 162/162LB, 163/163LC, 164/164LB and 165/165LB.

Corequisite(s): DAE 166, DAE 169, DAE 169LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Spring.

DAE 169 Dental Assisting Procedures II

.5 cr. hrs. .5 periods (.5 lec.)

Application and evaluation of skills acquired in a clinical environment. Includes specialty seminars and guest lecturers, rotations to specialty practices, first and second clinical externship rotation assignments, discussion and analysis of clinical externship, and evaluation process.

Prerequisite(s): DAE 159, 160, 161, 162/162LB, 163/163LC, 164/164LB and 165/165LC.

Corequisite(s): DAE 166, DAE 167, DAE 169LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Spring.

DAE 169LC Dental Assisting Procedures Clinical II

6 cr. hrs. 24 periods (24 lab)

This is the clinical lab portion of DAE 169.

Prerequisite(s): DAE 159, 160, 161, 162/162LB, 163/163LC, 164/164LB and 165/165LB.

Corequisite(s): DAE 166, DAE 167, DAE 169

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Spring.

Dental Hygiene

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

DHE 101 Dental Hygiene I

2 cr. hrs. 2 periods (2 lec.)

Introduction to the procedures used in the practice of dental hygiene at the beginning level. Includes professionalism and ethics, infection control, body mechanics/ergonomics, evaluation of patient medical and dental history, assessment data, and instrumentation. Also includes removal of soft deposits, fluorides, clinical procedures, and diversity of patient populations. Also includes a laboratory involving practicing dental hygiene procedures on student partners.

Corequisite(s): DHE 101LC, DHE 104, DHE 104LB, DHE 107, DHE 112, DHE 116, DHE 116LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 101LC Dental Hygiene I Clinical

3 cr. hrs. 12 periods (12 lab)

This is the clinical lab portion of DHE 101.

Corequisite(s): DHE 101, DHE 104, DHE 104LB, DHE 107, DHE 112, DHE 116, DHE 116LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 104 Dental and Oral Morphology

1 cr. hrs. 1 periods (1 lec.)

Form and function of primary and permanent dentition. Includes oral cavity proper, form, function and physiology, tooth identification, terminology, deciduous dentition morphology, occlusion, tooth anomalies, and root morphology.

Corequisite(s): DHE 101, DHE 101LC, DHE 104LB, DHE 107, DHE 112, DHE 116, DHE 116LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 104LB Dental and Oral Morphology Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of DHE 104.

Corequisite(s): DHE 101, DHE 101LC, DHE 104, DHE 107, DHE 112, DHE 116, DHE 116LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 107 Oral Embryology and Histology

2 cr. hrs. 2 periods (2 lec.)

The development and histology of teeth related to the intra and extra oral tissues of the head as they relate to the practice of dental hygiene. Includes terminology and formation of primary embryonic layers, histology, tooth development, enamel, dentin, and pulp. Also includes cementum, periodontal ligament, bone and alveolar process, and mucous membranes and salivary glands.

Corequisite(s): DHE 101, DHE 101LC, DHE 104, DHE 104LB, DHE 112, DHE 116, DHE 116LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 112 Preventive Dentistry

3 cr. hrs. 3 periods (3 lec.)

Introduction to dental disease and the promotion of dental health. Includes the role of dental hygienists as prevention specialists, clinical treatment theories, patient care readiness, dental disease, risk assessment, and oral hygiene instruction. Also includes dentin sensitivity, enamel demineralization and remineralization, chemotherapeutics, and tobacco cessation.

Corequisite(s): DHE 101, DHE 101LC, DHE 104, DHE 104LB, DHE 107, DHE 116, DHE 116LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 116 Oral Radiography

2 cr. hrs. 2 periods (2 lec.)

Principles of dental radiography as a diagnostic aid. Includes radiation production, biology; clinic experience in exposing, processing, mounting, and interpreting radiographs on mannequins and patients using a variety of radiographic techniques.

Corequisite(s): DHE 101, DHE 101LC, DHE 104, DHE 104LB, DHE 107, DHE 112, DHE 116LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 116LC Oral Radiography Clinical

1 cr. hrs. 4 periods (4 lab)

This is the clinical lab portion of DHE 116.

Corequisite(s): DHE 101, DHE 101LC, DHE 104, DHE 104LB, DHE 107, DHE 112, DHE 116

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 119 Periodontology

2 cr. hrs. 2 periods (2 lec.)

Survey of periodontology comprised of the etiology, diagnosis, and prognosis of periodontal disease. Includes tissues and microscopic anatomy of the periodontium, historical background, causes, microbiology and classification of periodontal disease, local and systemic contributing factors, clinical assessment, radiographic analysis, and evidence-based periodontal care. Also includes decision making during treatment planning, nonsurgical and patient's role in periodontal therapy, maintenance therapy, research articles and applications, and new dental technology.

Prerequisite(s): DHE 101, 101LC, 104, 104LB, 107, 112, 116, and 116LC.

Corequisite(s): DHE 120, DHE 122, DHE 132, DHE 132LB, DHE 150, DHE 150LB, DHE 150LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 120 Oral Pathology

2 cr. hrs. 2 periods (2 lec.)

Overview of oral pathology which is the study of human disease as found within all of the tissues represented in the area of the oral cavity. Includes introduction to pathology, diagnostic methods, normal exam and variants of normal, inflammation and repair, physical/chemical injuries of the oral tissues, and immunity and autoimmune diseases. Also includes infectious diseases, developmental disorders, neoplasia, genetic disorders, and oral manifestations of systemic disease.

Prerequisite(s): DHE 101/101LC, 104/104LB, 107, 112 and 116/116LC.

Corequisite(s): DHE 119, DHE 122, DHE 132, DHE 132LB, DHE 150, DHE 150LB, DHE 150LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 122 Pharmacology

2 cr. hrs. 2 periods (2 lec.)

Introduction to the theory of pharmacology as it relates to dentistry. Includes drug action and handling, prescription writing, autonomic drugs, non-opioid analgesics, anti-infective agents, anti-fungal and anti-viral agents, anti-anxiety agents, cardiovascular agents, and anti-convulsant agents. Also includes psychotherapeutic agents, antacids and antihistamines, adreno cortico steroid agents, anti-neoplastic agents, and respiratory and gastrointestinal medications, emergency medications, and drug interactions and drug abuse.

Prerequisite(s): DHE 101, 101LC, 104, 104LB, 107, 112, 116, and 116LC.

Corequisite(s): DHE 119, DHE 120, DHE 132, DHE 132LB, DHE 150, DHE 150LB, DHE 150LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 132 Dental Materials

2 cr. hrs. 2 periods (2 lec.)

Chemical and physical properties of dental materials used in dental practice. Includes introduction to dental materials, preventive sealants and restorative materials, esthetic restorations, amalgam, cements, impression materials, and gypsum products. Also includes gold and gold casting procedures, dental material radiographic identification, whitening tray fabrication, and review of national board content relating to dental materials.

Prerequisite(s): DHE 101, 101LC, 104, 104LB, 107, 112, 116, and 116LC.

Corequisite(s): DHE 119, DHE 120, DHE 122, DHE 132LB, DHE 150, DHE 150LB, DHE 150LC

Information: Students must be admitted to the PCC Dental Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 132LB Dental Materials Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of DHE 132.

Prerequisite(s): DHE 101/101LC, 104/104LB, 107, 112 and 116/116LC.

Corequisite(s): DHE 119, DHE 120, DHE 122, DHE 132, DHE 150, DHE 150LB, DHE 150LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 150 Dental Hygiene II

2 cr. hrs. 2 periods (2 lec.)

Continuation of DHE 101/10LC. Application of dental hygiene skills with a variety of clinical patients with simple dental hygiene care plans. Includes instrument review, evidence-based decision making and treatment planning, medical emergency management review, special needs patients, powered instruments, air powder polishing and stain removal, care of dental prostheses, advanced instrumentation and alternate fulcrums, tobacco cessation, subgingival irrigation, and antimicrobials. Also includes dental implant instruments, case studies, table clinics, and laboratory procedures.

Prerequisite(s): DHE101/101LC, 104/104LB, 107, 112 and 116/116LC.

Corequisite(s): DHE 119, DHE 120, DHE 122, DHE 132, DHE 132LB, DHE 150LB, DHE 150LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 150LB Dental Hygiene II Lab

.5 cr. hrs. 1.5 periods (1.5 lab)

This is the lab portion of DHE 150.

Prerequisite(s): DHE 101/101LC, 104/104LB, 107, 112 and 116/116LC.

Corequisite(s): DHE 119, DHE 120, DHE 122, DHE 132, DHE 132LB, DHE 150, DHE 150LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 150LC Dental Hygiene II Clinical

3 cr. hrs. 12 periods (12 lab)

This is the clinical lab portion of DHE 150.

Prerequisite(s): DHE101/101LC, 104/104LB, 107, 112 and 116/116LC.

Corequisite(s): DHE 119, DHE 120, DHE 122, DHE 132, DHE 132LB, DHE 150, DHE 150LB

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 160LC Clinical Skills Enhancement I

.25-2 cr. hrs. 1-8 periods (1-8 lab)

A clinical remediation course designed to support identified first year dental hygiene students who are performing at or below clinic course expectations. Includes education plan, development of individualized clinical remediation plan, and assessment.

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

DHE 196 Independent Studies in Dental Hygiene

1-4 cr. hrs. 3-12 periods (3-12 lab)

Independent clinical applications, reading, projects, or lab activities for continuing student development in dental hygiene under faculty guidance.

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

DHE 208 Pain and Anxiety Control for Dental Hygiene

1 cr. hrs. 1 periods (1 lec.)

Delivery of local anesthetics. Includes introduction to pain and anxiety control; pharmacology, neurophysiology, and local anesthetic agents; nitrous oxide and oxygen analgesia, health history and complications, treatment, laboratory practices on student partners, emergency procedures, and head and neck anatomy.

Prerequisite(s): DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

Corequisite(s): DHE 208LC, DHE 209, DHE 212, DHE 250, DHE 250LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 208LC Pain and Anxiety Control for Dental Hygiene Clinical

1 cr. hrs. 4 periods (4 lab)

This is the clinical lab portion of DHE 208.

Prerequisite(s): DHE 119, 120, 122, 132/132LB and 150/150LB/150LC.

Corequisite(s): DHE 208, DHE 209, DHE 212, DHE 250, DHE 250LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 209 Ethics and Practice Management

1 cr. hrs. 1 periods (1 lec.)

Ethical theories and ethical principles and their application to the practice of dental hygiene. Includes the business of dentistry, dental hygiene career opportunities, ethics, and jurisprudence.

Prerequisite(s): DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

Corequisite(s): DHE 208, DHE 208LC, DHE 212, DHE 250, DHE 250LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 212 Nutrition for Oral Health

1 cr. hrs. 1 periods (1 lec.)

Introduction of the principles of nutrition including food sources, digestion, absorption, and metabolism of nutrients essential to the oral health of individuals. Includes nutrition as the foundation for general and oral health, nutritional and oral implications of common chronic health conditions, carbohydrates, proteins, lipids, fats, minerals and mineralization, medications and oral health, and nutritional concerns for the dentally compromised patient.

Prerequisite(s): DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

Corequisite(s): DHE 208, DHE 208LC, DHE 209, DHE 250, DHE 250LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 213 Advanced Periodontal Services

2 cr. hrs. 2 periods (2 lec.)

Application of Dental Hygiene skills on advanced periodontal patients. Includes periodontal exam and initial phase, treatment plan, periodontal classifications, plaque control, scaling and root planning indications and limitations, sonic and ultrasonic therapy in periodontal services, hand and powered instrumentation, and implant maintenance. Also includes occlusal evaluation and adjustment, assessment, reevaluation of treatment and maintenance, periodontal healing, antimicrobials and antibiotics, surgical procedures, and nonsurgical periodontal therapy.

Prerequisite(s): DHE 208, 208LC, 209, 212, 250, 250LC.

Corequisite(s): DHE 213CA, DHE 213CB, DHE 216, DHE 255, DHE 255LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 213CA Advanced Periodontal Services Clinical - A

1 cr. hrs. 3 periods (3 lab)

This is the clinical lab part A portion of DHE 213.

Prerequisite(s): DHE 208, 208LC, 209, 212, 250 and 250LC.

Corequisite(s): DHE 213, DHE 213CB, DHE 216, DHE 255, DHE 255LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

DHE 213CB Advanced Periodontal Services Clinical - B

1 cr. hrs. 4 periods (4 lab)

This is the clinical lab part B portion of DHE 213.

Prerequisite(s): DHE 208, 208LC, 209, 212, 250 and 250LC.

Corequisite(s): DHE 213, DHE 213CA, DHE 216, DHE 255, DHE 255LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 216 Community and Dental Health Education

3 cr. hrs. 3 periods (3 lec.)

Overview of public dental health education. Includes critiquing dental literature, community dental health planning, basic biostatistics, and epidemiology and research in the dental community. Also includes dental needs and demands, dental care delivery and prevention in the United States.

Prerequisite(s): DHE 208, 208LC, 209, 212, 250 and 250LC.

Corequisite(s): DHE 213, DHE 213CA, DHE 216CB, DHE 255, DHE 255LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 250 Dental Hygiene III

3 cr. hrs. 3 periods (3 lec.)

Continuation of DHE 150/150LB/150LC. Application of dental hygiene skills with a variety of clinical patients with dental hygiene care plans at the intermediate level. Includes dental hygiene theory and care, instrumentation, and care of patients with various physical disabilities.

Prerequisite(s): DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

Corequisite(s): DHE 208, DHE 208LC, DHE 209, DHE 212, DHE 250LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 250LC Dental Hygiene III Clinical

4 cr. hrs. 16 periods (16 lab)

This is the clinical lab portion of DHE 250.

Prerequisite(s): DHE 119, 120, 122, 132, 132LB, 150, 150LB, and 150LC.

Corequisite(s): DHE 208, DHE 208LC, DHE 209, DHE 212, DHE 250

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Fall.

DHE 255 Dental Hygiene IV

1 cr. hrs. 1 periods (1 lec.)

Continuation of DHE 250/250LC. Includes application of dental hygiene skills with a variety of clinical patients with dental hygiene care plans at the advanced level. Also includes national, regional, and state exam preparation, advanced instrumentation, advanced ultrasonic inserts and techniques, and preparing for entry level employment.

Prerequisite(s): DHE 208, 208LC, 209, 212, 250, and 250LC.

Corequisite(s): DHE 213, DHE 213CA, DHE 213CB, DHE 216, DHE 255LC

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 255LC Dental Hygiene IV Clinical

3 cr. hrs. 12 periods (12 lab)

This is the clinical lab portion of DHE 255.

Prerequisite(s): DHE 208, 208LC, 209, 212, 250, and 250LC.

Corequisite(s): DHE 213, DHE 213CA, DHE 213CB, DHE 216, DHE 255

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Offered: Spring.

DHE 260LC Clinical Skills Enhancement II

.25-2 cr. hrs. 1-4 periods (1-4 lab)

A clinical remediation course designed to support identified second year dental hygiene students who are performing at or below clinic course expectations. Includes identification of need through clinical performance scores, development of individualized clinical remediation plan, and assessment.

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

DHE 296 Advanced Independent Study: Dental Hygiene

1-4 cr. hrs. 3-12 periods (3-12 lab)

Students independently continue their development in Dental Hygiene under the guidance of a faculty member.

Information: Students must be admitted to the PCC Dental Hygiene program and obtain consent of the Dental Hygiene department before enrolling in this course.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Dental Laboratory Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

DLT 101 Dental Morphology

2 cr. hrs. 2 periods (2 lec.)

Introduction to human dental morphology through lectures, readings, and sculpting exercises. Includes the dental health care team, anatomical landmarks and terminology, tooth development and landmarks, tooth sculpting, articulators and model mounting, occlusion, and care of laboratory instruments.

Corequisite(s): DLT 101LB

Information: Consent of program director is required before enrolling in this course.

Offered: Fall.

DLT 101LB Dental Morphology Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DLT 101.

Corequisite(s): DLT 101

Offered: Fall.

DLT 102 Non-Metallic Dental Materials

3 cr. hrs. 3 periods (3 lec.)

Principles of chemistry and physics, identification, selection, and manipulation of non-metallic dental materials. Includes an introduction to dental materials, management of materials, impression material, gypsum materials, dental waxes, refractory materials, and acrylic resin.

Prerequisite(s): DLT 101 or concurrent enrollment.

Information: Consent of program director is required before enrolling in this course.

Offered: Fall.

DLT 103 Complete Dentures

1 cr. hrs. 1 periods (1 lec.)

Examination of the relationship between upper and lower dentures as interpreted on a functional articulator. Includes evaluation of preliminary impressions and fabrication of models, custom impression trays, evaluation of final impression and master model, baseplate fabrication, occlusion rims, articulation and mounting of working models, and prosthetic tooth selection. Also includes setting artificial denture teeth, processing the trial denture, finishing complete dentures, fabricating surgical templates, and denture repair and relin.

Prerequisite(s): DLT 101 or concurrent enrollment.

Corequisite(s): DLT 103LB

Information: Consent of program director is required before enrolling in this course.

Offered: Fall.

DLT 103LB Complete Dentures Lab

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of DLT 103.

Corequisite(s): DLT 103

Offered: Fall.

DLT 104 Dental Occlusion

2 cr. hrs. 2 periods (2 lec.)

Introduction to the principles of techniques used in the dental laboratory. Includes how to trace and label all aspects of the maxillary and mandibular teeth, control of inlay wax application, restoring occlusal surfaces and clinical crowns to ideal occlusion, functional occlusion on articulated casts, and philosophies of different wax added systems.

Prerequisite(s): DLT 101.

Corequisite(s): DLT 104LB

Information: Consent of program director is required before enrolling in this course.

Offered: Spring.

DLT 104LB Dental Occlusion Lab

2 cr. hrs. 6 periods (6 lab)

This is the Lab portion of DLT 104.

Corequisite(s): DLT 104

Offered: Spring.

DLT 105 Partial Denture Construction

1 cr. hrs. 1 periods (1 lec.)

Construction of removable partial dentures (RPDs). Includes evaluation and fabrication of preliminary impressions and models, model survey and RPD design, evaluation and fabrication of final impressions and master models, block out procedures, model duplication and refractory casts, creating wax patterns, spruing and investing frameworks, burnout and alloy casts, and recovery of RPD casting. Also includes metal finishing and polishing, occlusion rims, prosthetic tooth selection and tooth setting, processing and finishing the RPD, and soldering of dental alloys.

Prerequisite(s): DLT 101 or concurrent enrollment.

Corequisite(s): DLT 105LB

Information: Consent of program director is required before enrolling in this course.

Offered: Spring.

DLT 105LB Partial Denture Construction Lab

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of DLT 105.

Corequisite(s): DLT 105

Offered: Spring.

DLT 106 Orthodontic Appliances

2 cr. hrs. 2 periods (2 lec.)

Construction and theory of simple orthodontic appliances. Includes evaluation of preliminary impressions and fabrication of orthodontic study models, model trimming and evaluation, classification of occlusion and malocclusion types, tooth numbering systems and identification, wrought wire fabrication, application of wire bending skills, fabrication of removable tooth retaining and moving appliances, and fixed space maintaining appliances.

Prerequisite(s): DLT 101 or concurrent enrollment.

Corequisite(s): DLT 106LB

Information: Consent of program director is required before enrolling in this course.

Offered: Spring.

DLT 106LB Orthodontic Appliances Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DLT 106.

Corequisite(s): DLT 106

Offered: Spring.

DLT 108 Laboratory Management

3 cr. hrs. 3 periods (3 lec.)

Examination of the principles of dental laboratory management. Includes blood born pathogens, infection control guidelines and procedures, Occupational Safety and Health Administration (OSHA) regulations for dental laboratories, post exposure plan, legal and ethical aspects of the industry, history of dentistry, National Association of Dental Laboratories, and establishing a dental laboratory.

Prerequisite(s): DLT 101 or concurrent enrollment.

Information: Consent of program director is required before enrolling in this course.

Offered: Spring.

DLT 201 Dental Laboratory I

2 cr. hrs. 2 periods (2 lec.)

Introduction to the principles and techniques used in the dental laboratory. Includes fabrication and articulation of removable die models, functional occlusion in wax crown and bridge patterns and in crown and bridge metal castings, spruing, investing, and casting crown and bridge patterns, and repairs and soldering.

Prerequisite(s): DLT 101.

Corequisite(s): DLT 201LB

Information: Consent of program director is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

DLT 201LB Dental Laboratory I Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DLT 201.

Corequisite(s): DLT 201

Offered: May not be offered this year, check class schedule.

DLT 202 Dental Metallurgy

3 cr. hrs. 3 periods (3 lec.)

Examination of metals currently used by the dental technician. Includes introduction to dental alloys, physical and chemical properties of dental alloys, weights, measures, and calculations, alloy processing, equipment calibration, metal treatment and torch techniques, electro polisher and electrolyte solution operation and safety procedures, and metal sensitivities and allergies.

Prerequisite(s): DLT 101.

Information: Consent of program director is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

DLT 203 Fixed Bridgework

1 cr. hrs. 1 periods (1 lec.)

Construction of fixed single tooth restorations and bridgework. Includes prescriptions and work authorizations, fixed restoration design and preparation requirements, waxing, seating, finishing, and evaluation of fixed single tooth restorations and bridgework castings.

Prerequisite(s): DLT 101 or concurrent enrollment.

Corequisite(s): DLT 203LB

Information: Consent of program director is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

DLT 203LB Fixed Bridgework Lab

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of DLT 203.

Corequisite(s): DLT 203

Offered: May not be offered this year, check class schedule.

DLT 204 Dental Laboratory II

2 cr. hrs. 2 periods (2 lec.)

Continuation of DLT 201. Principles and techniques used in the dental laboratory. Includes physics of light, color theory, edodontically treated teeth, reduction copings, attachments, application of dental attachments, swing lock retention for removable partial dentures, and semi precision attachment in a bridge.

Prerequisite(s): DLT 101/101LB, 104/104LB, 108, 201/201LB, 202 and 203/203LB.

Corequisite(s): DLT 204LB

Information: Consent of program director is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

DLT 204LB Dental Laboratory II Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of DLT 204.

Corequisite(s): DLT 204

Offered: May not be offered this year, check class schedule.

DLT 206 Dental Ceramics

2 cr. hrs. 2 periods (2 lec.)

Introduction to porcelain fused to metal techniques. Includes prescriptions and work authorizations; porcelain fused to metal restoration designs and preparation requirements; design, wax-up, and finishing of porcelain fused to metal substructure; metal conditioning; and building ceramic restorations. Also includes porcelain furnace operation, contouring fired porcelain, finishing, and soldering.

Prerequisite(s): DLT 101/101LB, 104/104LB, 108, 202 and 203/203LB.

Corequisite(s): DLT 206LB

Information: Consent of program director is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

DLT 206LB Dental Ceramics Lab

2 cr. hrs. 6 periods (6 lab)

This is the Lab portion of DLT 206.

Corequisite(s): DLT 206

Offered: May not be offered this year, check class schedule.

DLT 207 Advanced Dental Laboratory Technology

2 cr. hrs. 2 periods (2 lec.)

Application of dental laboratory techniques at the advanced level. Includes full dentures, partial dentures, crown and bridge, dental ceramics, and orthodontics.

Prerequisite(s): DLT 101/101LB, 104/104LB, 108, 202 and 203/203LB.

Corequisite(s): DLT 207LB

Information: Consent of program director is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

DLT 207LB Advanced Dental Laboratory Technology Lab

3 cr. hrs. 9 periods (9 lab)

This is the Lab portion of DLT 207.

Corequisite(s): DLT 207

Offered: May not be offered this year, check class schedule.

Digital Arts

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

DAR 101 Color Rendering and Theory

4 cr. hrs. 5 periods (3 lec., 2 lab)

Basic color theory and rendering principles as applied to digital and graphic design. Includes color types, definition and use of color schemes, rendering concepts and techniques, media, technique, composition, designing characters for animation, three-dimensional techniques and construction, and professional environment.

Offered: Fall, Spring, Summer.

DAR 102 Fundamentals of Digital Design

4 cr. hrs. 5 periods (3 lec., 2 lab)

Overview of the theory, survey, and practice of digital arts design. Includes survey of industry careers, skills and processes needed for working with clients, marketing strategies for products and services, and portfolio requirements for local, national, and global markets.

Offered: Fall, Spring.

DAR 103 Introduction to Digital Arts

3 cr. hrs. 3 periods (3 lec.)

Theory, history, and practice of digital image manipulation. Includes digitally based technologies, analog to digital conversion, data compression, data security, synchronization of digital materials, standards and intellectual property, civil liberties in the digital age, and digital image sound distribution and exhibition.

Offered: Fall, Spring, Summer.

DAR 111 Typography

4 cr. hrs. 5 periods (3 lec., 2 lab)

Letter forms and use in visual communications. Includes type rendering, letter spacing, type and headline groupings, type relationships, type images, and type applications.

Prerequisite(s): DAR 103.

Offered: Fall, Spring, Summer.

DAR 112 Graphic Design

4 cr. hrs. 5 periods (3 lec., 2 lab)

Basic principles of color and design as applied to the graphics industry. Includes creating focal points, unity, texture, space relationships, color control, color harmonies, and psychology of color.

Offered: Fall, Spring, Summer.

DAR 115 Digital Video Editing

4 cr. hrs. 5 periods (3 lec., 2 lab)

Introduction to non-linear editing on the computer. Includes historical development of editing, digital video and audio formats, techniques and theory of storytelling in editing, storytelling in various types, and organization for the edit.

Prerequisite(s): DAR 103 or concurrent enrollment.

Offered: Fall, Spring.

DAR 120 Applied Computer Graphics

4 cr. hrs. 5 periods (3 lec., 2 lab)

Introduction to current computer graphics software. Includes current software, desktop publishing documents, postscript illustration documents, painting or photo editing documents, file creation using computer software applications, computer graphics hardware, and professional environment.

Offered: Fall, Spring, Summer.

DAR 122 DeskTop Graphics: Adobe Illustrator

4 cr. hrs. 5 periods (3 lec., 2 lab)

Computer generated graphics and illustrations. Includes current Adobe Illustrator software, computer graphics hardware, documents, and professional environment.

Prerequisite(s): DAR 120.

Offered: Fall, Spring, Summer.

DAR 124 Writing for Film and Television

3 cr. hrs. 3 periods (3 lec.)

Examining dramatic writing in visual mediums and creating the story for the screen. Includes story origins and formats, story structure, elements of story, preproduction, writing for alternative media, working in the film and television industry, writing processes, and criticism.

Offered: Fall, Spring.

DAR 125 Digital Video Production I

3 cr. hrs. 4 periods (2 lec., 2 lab)

Principles and techniques of digital video production. Includes digital video cameras, memory and file formats, camera lenses, proper exposure; light, color, and temperature; depth of field, shutter speed effects, lighting, elements of composition, teamwork, and how lighting and composition affects storytelling.

Prerequisite(s): DAR 115 and 124.

Offered: Fall, Spring.

DAR 128 Digital Photography I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to digital photography emphasizing the technical and aesthetic issues and how these qualities form image content. Includes Adobe Photoshop basics, history of still photography, applications of digital cameras, aspects of the digital medium, camera and computer equipment requirements, digital still camera, memory and file formats, digital still camera lenses, and proper exposure. Also includes light, color, and temperature; depth of field, shutter speed effects, proper use of digital photography, lighting for digital stills, elements of composition, photographic rendering and reality, outputting and publishing, portfolio preparation, and career options in digital photography.

Recommendation: Adobe Photoshop experience is highly recommended before enrolling in this course.

Information: Same as ART 128. It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software. Professional photographic equipment, including cameras, are available for check out on a rotating basis. Professional quality computers, software, printers, lighting equipment, and studio will be provided for specific assignments.

Information: There will be additional supply costs beyond course fees.

Offered: Fall, Spring, Summer.

DAR 140 Digital Arts Illustration Studio: Illustration Technique & Media

4 cr. hrs. 5 periods (3 lec., 2 lab)

Basic principles, techniques and media applied to digital and traditional illustration styles, subject matter used in print illustration. Includes subject, media, technique, composition, and professional environment.

Prerequisite(s): DAR 101.

Offered: Fall, Spring.

DAR 145 Digital Arts Illustration Studio: Character Development for Animation & Print

4 cr. hrs. 5 periods (3 lec., 2 lab)

Principles and techniques applied to character development used for animation, products, and print material. Includes drawing in a loose manner, designing characters, materials, techniques and construction, various applications, and professional environment.

Prerequisite(s): DAR 101.

Offered: Fall, Spring.

DAR 146 Lighting for Photography I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to creative professional lighting concepts and techniques for commercial and fine art photography. Includes lighting and studio equipment, light qualities, lighting for form, lighting for surface qualities, still-life photography, portrait photography, image composition, critical analysis, and portfolio.

Prerequisite(s): ART/DAR 128.

Information: Students are strongly recommended to own or have access to a digital camera with manual exposure control and a computer with image processing software. Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments.

Information: There may be additional supply costs in addition to course fees. Same as ART 146.

Offered: Fall.

DAR 173 History of American Cinema

3 cr. hrs. 3 periods (3 lec.)

American cinematic film making as an art form, economic force, and system of representation and communication. Includes history of American cinema, development of the significant films and directors, film studios, and image, cinema genres, history of narrative film and film sounds, alternative American films, analysis and criticism, and American cinema team.

Offered: Fall, Spring, Summer.

DAR 175 Cinematography

3 cr. hrs. 4 periods (2 lec., 2 lab)

Basic techniques of motion picture production. Includes operation and application of all basic film tools, equipment, and techniques used in cinema production. Also includes practical experience as part of the production team, pre-production, light and image, analysis of film technique, and post-production.

Prerequisite(s): DAR 103, 115, 124.

Information: This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall, Spring.

DAR 176 Digital Animation

4 cr. hrs. 5 periods (3 lec., 2 lab)

Introduction to digital animation techniques. Includes history of art animation, procedures in animated films, producing animation, character design and movements, technical information, storyboarding, animation techniques, basic principles of animation, and creation of a digital animation project.

Information: This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall, Spring.

DAR 177 Location Sound for Film and Video

4 cr. hrs. 5 periods (3 lec., 2 lab)

Theory and practice of sound recording on location for feature films, documentaries, video productions, and multimedia. Includes technical planning and sound design, miking speech, single camera applications, wireless microphones, combinations of microphones, stereo mixing on location, music in film and television, taping off the telephone, and tape presentation. Also includes electronic new gathering and field production, motion picture sound recording, digital audio tape versus analog recording devices, and techniques and aesthetic considerations.

Prerequisite(s): DAR 103, 124.

Information: This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall.

DAR 196 Digital Arts Independent Projects: Media Projects

1-4 cr. hrs. 3-12 periods (3-12 lab)

Students independently continue their development in media communications with the help of a faculty member.

Prerequisite(s): DAR 103, 124, 125, 175.

Information: Consent of instructor is required before enrolling in this course. May be taken three times of a maximum of twelve credit hours.

Offered: Fall, Spring, Summer.

DAR 205 Lighting for Film and Video

4 cr. hrs. 6 periods (2 lec., 4 lab)

Creative lighting techniques, practices, and use of equipment. Includes the visible spectrum, film and exposure, using electricity, video and the electronic medium, controlling color temperature, light quality, and measuring light intensity. Also includes manipulating light, light concepts in practice, and light in the studio and on location.

Prerequisite(s): DAR 124 and 125 or 175.

Information: This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Spring.

DAR 210 Digital Arts Design Studio: Advertising Design

4 cr. hrs. 5 periods (3 lec., 2 lab)

Principles and techniques as applied to advertising design. Includes ad design, billboard design, logo design, poster design, brochure design, package design, and other mediums.

Prerequisite(s): DAR 112.

Offered: Fall, Spring.

DAR 211 Digital Arts Design Studio: Product Design

4 cr. hrs. 5 periods (3 lec., 2 lab)

Principles and techniques as applied to product design. Includes package design, card design, textile design, compact disc (CD) design, digital video disc (DVD) design, game design, and sign design.

Prerequisite(s): DAR 112.

Offered: Fall, Spring.

DAR 212 Digital Arts Design Studio: Package Design

4 cr. hrs. 5 periods (3 lec., 2 lab)

Procedures and techniques for creating wrapper and container comprehensives. Includes layout, packaging, construction techniques, mock-ups, and the professional environment.

Prerequisite(s): DAR 112.

Offered: Fall, Spring.

DAR 215 Advanced Cinematography

4 cr. hrs. 6 periods (2 lec., 4 lab)

Tools, techniques, and procedures involved in professional film production. Includes pre-planning a 16mm motion picture production, script breakdown, pre-production and post-production, budgeting, distribution, promotion, and developing a prospectus.

Prerequisite(s): DAR 175.

Information: This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall.

DAR 217 Post Production for Film

4 cr. hrs. 5 periods (3 lec., 2 lab)

Introduction to film post production video and audio techniques and aesthetics of film editing. Includes history of the art of film editing, preparing for the edit, tools of the editor, cutting techniques, and preparing for sound. Also includes sound, dialogue, looping, and music editing; the mix; and the answer print.

Prerequisite(s): DAR 215.

Offered: Spring.

DAR 221 Photo Image Editing: Adobe PhotoShop

4 cr. hrs. 5 periods (3 lec., 2 lab)

Computer retouching and manipulation of photos and illustrations. Includes current Adobe PhotoShop software, edit and retouch, hardware, and professional environment.

Prerequisite(s): DAR 120.

Information: Experience in computer graphics may be substituted for prerequisites. See a Digital Arts faculty member for information.

Offered: Fall, Spring.

DAR 222 Advanced Photo Image Editing: Adobe Photoshop

4 cr. hrs. 5 periods (3 lec., 2 lab)

Continuation of DAR 221. Includes advanced techniques using current Adobe Photoshop software, hardware, documents, and professional environment.

Prerequisite(s): DAR 221.

Offered: Spring.

DAR 223 Digital Drawing and Painting

4 cr. hrs. 5 periods (3 lec., 2 lab)

Design and illustration on a personal computer system using current paint software. Includes color, drawing and painting tools, editing and text tools, brush customizing, special effects, and applications.

Prerequisite(s): DAR 101.

Offered: Spring.

DAR 224 Advanced Screenwriting

3 cr. hrs. 3 periods (3 lec.)

In-depth examination of writing in visual mediums. Includes writing workshops, planning feature length screenplays, alternative writing processes, contemporary scripts and screenwriters, mythic archetypes, creative deconstruction, finding representation, and current trends in the screenwriting industry.

Prerequisite(s): DAR 103 and 124.

Information: Experience in computer graphics may be substituted for some prerequisites. See a Digital Arts faculty member for information.

Offered: Spring.

DAR 225 Digital Video Production II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of DAR 125. Production of digital video projects. Includes digital video formats, story elements and writing a script, scripting and visual elements, production plan, analyzing the needs in a production plan, production equipment on location, digital video camera, and recording techniques. Also includes lighting the digital video production, post production equipment and set up, non-linear editing equipment and approach, editing and the visual storyline, and building a portfolio.

Prerequisite(s): DAR 125.

Information: This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Spring.

DAR 226 DeskTop Publishing for Digital Arts: Adobe InDesign

4 cr. hrs. 5 periods (3 lec., 2 lab)

Design and creation of publications on a personal computer system. Includes current Adobe InDesign software documents, computer graphics hardware, and professional environment.

Prerequisite(s): DAR 120.

Information: Prerequisites may be waived with experience in computer graphics. See a Digital Arts faculty member for information.

Offered: Fall, Spring.

DAR 230 Production Techniques for Print

4 cr. hrs. 5 periods (3 lec., 2 lab)

Preparation of artwork for printing. Includes crop marks, typesetting to specifications, typesetting to match a layout line breaks/spelling, spot colors, duotones, bleeds/reversed type, two sided documents, dummy documents, line art/photos, output, newspaper and magazine ads, logo specifications, paper stock, outline photos, CMYK process colors, multiple page booklets, trapping, and professional work environment.

Prerequisite(s): DAR 122, 226 and 221 or concurrent enrollment.

Offered: Fall, Spring.

DAR 232 Digital Photography II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of ART/DAR 128. Includes intermediate digital cameras with manual functions, intermediate digital darkroom and digital output, quality of light, intermediate image composition, multiple images, intermediate portfolio development, and critical analysis. Also includes the intermediate use of state-of-the-art professional quality computers and image processing software, professional digital cameras, printers, and a lighting studio with professional lighting equipment.

Prerequisite(s): ART/DAR 128.

Recommendation: Completion of DAR 221 before enrolling in this course.

Information: Same as ART 232. The prerequisite may be waived with consent of the instructor.

Information: It is recommended students have access to a digital camera with manual exposure control and a computer with image processing software.

Information: Professional photographic equipment, including cameras, are available for check out on a rotating basis. Professional quality computers, software, printers, lighting equipment and studio will be provided for specific assignments.

Information: There will be additional supply costs beyond course fees.

Offered: Spring.

DAR 240 Digital Arts Illustration Studio: Book Illustration

4 cr. hrs. 5 periods (3 lec., 2 lab)

Principles and techniques applied to various book, graphic novel and comic magazine illustration. Includes advanced subjects, media, techniques, various applications, and professional environment.

Prerequisite(s): DAR 101.

Offered: Fall, Spring.

DAR 246 Lighting for Photography II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of ART/DAR 146. Includes lighting and equipment for studio and location, advanced lighting qualities and techniques, photographing with mixed light sources, lighting for mood and environment, set design and construction, photographing individuals and groups of people, photographing on location, photographing for montage images, advanced image composition, critical analysis, business practices, and portfolios.

Prerequisite(s): ART/DAR 146.

Information: Students are strongly recommended to own or have access to a digital camera with manual exposure control and a computer with image processing software.

Information: Professional quality cameras, computers and software, printers, lighting equipment and studio will be provided for specific assignments.

Information: There may be additional supply costs in addition to course fees. Same as ART 246.

Offered: Spring.

DAR 250 Computer 2D Animation: Adobe After Effects

4 cr. hrs. 5 periods (3 lec., 2 lab)

Two dimensional animation on the computer. Includes storyboards, techniques and terms, logo animation, character animation, metamorphic animation, and production techniques.

Prerequisite(s): DAR 221 or 223.

Information: Experience in computer graphics may be substituted for some prerequisites. See a Digital Arts faculty member for information.

Offered: Fall, Spring.

DAR 251 Computer 3D Animation: Maya

4 cr. hrs. 5 periods (3 lec., 2 lab)

Beginning modeling, rendering, and animation on the computer using Maya, may include other current industry software. Includes menus, image creation, color, printing, precision model making, object creation and design, and compatibility.

Recommendation: Completion of DAR 221 or 250 before enrolling in this course.

Offered: Fall, Spring.

DAR 252 Interactive Design I

4 cr. hrs. 5 periods (3 lec., 2 lab)

Interactive Design I Introduction to the theory, survey, and practice of designing and developing beginning interactive applications. Includes design for current formats, design and development planning; core concepts of Flash, Edge, HyperText Markup Language (HTML) 5, and application development; adding media to projects, core visual aesthetics, business considerations, and publishing.

Prerequisite(s): DAR 120.

Information: Prerequisites may be waived with experience in computer graphics. See a Digital Arts faculty member for information.

Offered: Fall, Spring.

DAR 254 Interactive Design II

4 cr. hrs. 5 periods (3 lec., 2 lab)

Continuation of DAR 252. Introduction to the theory, survey, and practice of designing and developing advanced interactive applications. Includes current multimedia formats and funding options, storyboarding interactive projects; advanced concepts of Flash, Edge, HyperText Markup Language (HTML) 5, and application development; simple graphics and animations, advanced visual aesthetics, business and legal considerations; and publishing, marketing, and distribution.

Prerequisite(s): DAR 252.

Offered: Fall, Spring.

DAR 255 Television Commercial Design

4 cr. hrs. 5 periods (3 lec., 2 lab)

Designing television commercials. Includes a basic overview of videography, production procedures, conceptualizing, storyboarding, budgeting, casting, videotaping, editing, music, special effects, and legal considerations.

Prerequisite(s): DAR 225.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: Spring.

DAR 256 Web Design I

4 cr. hrs. 5 periods (3 lec., 2 lab)

Introduction to the theory, survey, and practice of designing and developing beginning website and application interfaces. Includes building websites, creating a static website with Dreamweaver, creating a dynamic website with WordPress, HyperText Markup Language (HTML), Cascading Style Sheets (CSS), JavaScript, web applications, web content, uploading websites, and web standards.

Prerequisite(s): DAR 122 and 221.

Offered: Fall, Spring.

DAR 257 Advanced Web Design

4 cr. hrs. 5 periods (3 lec., 2 lab)

Theory, survey, and practice of designing and developing advanced website and application interfaces. Includes using basic Hypertext Preprocessor (PHP), designing and adding content to a MySQL database, creating a WordPress theme; using advanced HyperText Markup Language (HTML) Cascading Style Sheet (CSS), and JavaScript code; formatting multimedia content, and best practices in web design.

Prerequisite(s): DAR 221 and 256.

Offered: Spring.

DAR 258 Advanced Computer 3D Animation: Maya

4 cr. hrs. 5 periods (3 lec., 2 lab)

Advanced modeling, rendering, and animation utilizing high end character 3D software. Includes a review of 3D basics, advanced modeling, animation, and surfacing techniques, advanced lighting and camera effects, and kinematics and contortions.

Prerequisite(s): DAR 251.

Offered: Fall.

DAR 275 Basic Audio Production

4 cr. hrs. 6 periods (2 lec., 4 lab)

Fundamental tools, techniques, and procedures for multi-track recording. Includes elements of sound, sound studios, consoles, digital recorders, microphone application, and technical planning and sound design. Also includes on location versus studio recording, mixing and re-recording, and editing.

Prerequisite(s): DAR 124.

Information: This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall, Spring.

DAR 285 Documentary Television and Film

4 cr. hrs. 6 periods (2 lec., 4 lab)

Fundamentals of nonfiction film/video production. Includes history of documentary production, European vs. American documentary makers, operating the camera, film and video techniques, television themes, production of a television documentary, and location problems.

Prerequisite(s): DAR 103.

Information: This course will require additional expenses for supplies in addition to course and lab fees.

Offered: Fall.

DAR 288 Digital Arts Business and Portfolio Capstone

2 cr. hrs. 3 periods (1 lec., 2 lab)

Production of professional quality digital arts portfolio with a focus on extended, in-depth study of the digital art industry and work environment. Includes professional design relationships, current digital arts tools and processes, interviews, and presentation of portfolios.

Prerequisite(s): DAR 111, 112, 122, 221, and 226.

Offered: Spring.

DAR 290E2 Digital Video and Film Arts Internship

3 cr. hrs. 15 periods (15 lab)

Work environment in digital video and film arts. Includes interpersonal communication, professional development, employment strategies, and field experience.

Prerequisite(s): DAR 103, 124, 125, and 175.

Information: Consent of the video and film arts instructor and 12 credit hours of DAR course work is required to be placed in an internship position.

Offered: May not be offered this year, check class schedule.

DAR 290E3 Internship in Digital Arts/Graphics

3 cr. hrs. 15 periods (15 lab)

Work environment in digital arts/graphics field. Includes interpersonal communication, professional development, employment strategies, and field experience.

Prerequisite(s): DAR 101, 111, and 112.

Information: Consent of the digital arts/graphics instructor or department chair and 12 credit hours of DAR coursework is required to be placed in an internship position.

Offered: May not be offered this year, check class schedule.

DAR 296 Digital Arts Independent Projects

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes defining a project, tools and medium, conceptualize and execute a project, professional environment, and complete and critique the project.

Information: May be taken four times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

DAR 29611 Digital Arts Independent Projects: Design

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures and a method of evaluation.

Information: May be taken four times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

DAR 29612 Digital Arts Independent Projects: Illustration

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures and a method of evaluation.

Information: May be taken four times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

DAR 29613 Digital Arts Independent Projects: Desktop Publishing

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures, and a method of evaluation.

Information: May be taken four times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring.

DAR 29614 Digital Arts Independent Projects: Interactive Design

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures, and a method of evaluation.

Information: May be taken four times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring.

DAR 29618 Digital Art Independent Proj: Adv Digital Video/Audio/Film

1-4 cr. hrs. 3-12 periods (3-12 lab)

Students independently continue their development in digital video, audio, and film media with the help of a faculty member.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Completion of twelve credit hours of DAR courses, DAR 196, and consent of instructor are required before enrolling in this course.

Offered: Fall, Spring, Summer.

DAR 297 Digital Arts Seminar

.25-4 cr. hrs. .25-4 periods (.25-4 lec.)

Digital Arts job-related training. Includes presentations and development of skills in a given area. May include special topics of timely or limited interest. Course content may be delivered all, or in part, via the web.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Direct Care Professional

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

DCP 102 Direct Care Professional: Aging/Physical Disabilities

2 cr. hrs. 2 periods (2 lec.)

Presents principles and applications of provision of care in the home environment for older adults and persons with disabilities. Addresses overview of services and continuum of care; aspects of independent living; and roles and responsibilities of Direct Care Professionals (DCPs). Also includes legal and ethical issues, vulnerable adult abuse, reporting requirements, care plans, biological aspects of aging, physical disabilities and chronic conditions, psychological and cognitive conditions, and implications for DCPs. An overview of dementia-specific care is incorporated.

Prerequisite(s): DCP 101.

Offered: May not be offered this year, check class schedule.

DCP 103 Direct Care Professional: Alzheimer's/Forms of Dementia

2 cr. hrs. 2 periods (2 lec.)

Presents principles and applications of provision of care in the home environment for persons with Alzheimer and related forms of dementia. Addresses an overview of services and continuum of care; aspects of independent living; and roles and responsibilities of Direct Care Professionals (DCPs). Also includes legal and ethical issues, vulnerable adult abuse, reporting requirements, and care plans. Emphasis on aspects of Alzheimer's as related to physical disabilities and chronic conditions, psychological and cognitive conditions and implications for DCPs.

Prerequisite(s): DCP 101.

Offered: May not be offered this year, check class schedule.

DCP 104 Direct Care Professional: Developmental Disabilities

2 cr. hrs. 2 periods (2 lec.)

Addresses a foundational knowledge for the provision and application of quality care for people with developmental disabilities by Direct Care Professionals (DCPs) or family caregivers. Includes the examination and application of philosophical, social, medical, physical, legal, and ethical issues faced by people with disabilities.

Prerequisite(s): DCP 101.

Offered: May not be offered this year, check class schedule.

DCP 190 Direct Care Professional Internship

2 cr. hrs. 10 periods (10 lab)

Provides students with hands on-experiences at a direct care agency. Includes an orientation to working in a direct care agency; working with a developmentally/physically disabled population and the aging; professionalism in the direct care profession, and application of the principles of care giving through hands-on experience in the field. Also includes program administration; management, supervision and other oversight positions; office practices and computer applications for direct care; and funding sources for human service agencies and organizations.

Prerequisite(s): DCP 101, 102, and either 103 or 104.

Information: Included in the 160 internship hours are 24 hours of classroom instruction; 1 credit hour is equal to 80 hours of contact time.

Information: Course is optional for program.

Offered: May not be offered this year, check class schedule.

Early Childhood Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ECE 100 Introduction to the Child Care Profession

2 cr. hrs. 2 periods (2 lec.)

Comprehensive employment preparation for clients referred by the Department of Economic Security (DES) and other individuals interested in the field of child care. Includes child development; positive discipline and guidance; language, literacy, math, and science development; and learning environments. Also includes licensing, health and safety, nutrition, children with disabilities, and handling child abuse.

Offered: May not be offered this year, check class schedule.

ECE 107 Human Development and Relations

3 cr. hrs. 3 periods (3 lec.)

Analysis of the elements that affect growth and development throughout the life span. Includes theories and global perspectives, prenatal development, oral language development, development within domains, parenting styles, death and dying, local and community influences, and theories in action.

Information: Students must have college-level reading and writing skills to be successful in ECE courses.

Offered: Fall, Spring, Summer.

ECE 108 Literature/Social Studies for Children

3 cr. hrs. 3 periods (3 lec.)

Survey of principles, materials, and techniques for the selection and evaluation of children's literature and social studies materials. Includes history of children's literature, resources, evaluation, developing a professional portfolio, use of appropriate materials, alignment with national social studies standards, presentation techniques, and developmentally appropriate practices.

Information: Students must have college-level reading and writing skills to be successful in ECE courses.

Offered: May not be offered this year, check class schedule.

ECE 115 Supervision and Administration of Early Childhood Programs

3 cr. hrs. 3 periods (3 lec.)

Analysis of elements for planning, implementing, maintaining, and evaluating early childhood education programs. Includes program assessment, philosophy and mission statements, basic business operations, ethics, engaging stakeholders, regulating agencies, and child advocacy.

Prerequisite(s): MAT 082.

Information: Students must have college-level reading and writing skills to be successful in ECE courses.

Offered: May not be offered this year, check class schedule.

ECE 117 Child Growth and Development

3 cr. hrs. 3 periods (3 lec.)

Analysis of the elements which affect growth and development pre-birth to age eight. Includes developmental theorists, roles of genetics, health and social influences, public policy issues, and domains of development.

Information: Students must have college-level reading and writing skills to be successful in ECE courses.

Offered: Fall, Spring, Summer.

ECE 118 Foundations of Early Childhood Education

3 cr. hrs. 3 periods (3 lec.)

A survey of the historical and philosophical foundations of early childhood education. Includes historical and contemporary influences; pedagogy; agency management of early childhood programs; early childhood assessment; and professional responsibilities.

Information: CDA 102, 121, and 271 together constitute ECE 118.

Information: Students must have college-level reading and writing skills to be successful in ECE courses.

Offered: Fall, Spring, Summer.

ECE 124 Math and Science for Children

3 cr. hrs. 3 periods (3 lec.)

Theories, methods, and techniques for teaching math and science. Includes central concepts in math and science, communication skills, assessment, integration into other subject areas, teaching methods, and developmentally appropriate practices.

Prerequisite(s): MAT 082.

Information: All ECE courses require college-level reading and writing skills.

Information: This course replaces CDA 142, CDA 143, and CDA 152.

Offered: May not be offered this year, check class schedule.

ECE 125 Nutrition, Health, and Safety for the Young Child

3 cr. hrs. 3 periods (3 lec.)

In-depth study of the health, safety and nutritional needs of children. Includes children's nutritional needs, caregiver responsibilities, food allergies, promoting healthy attitudes, illness prevention, record keeping, promotion of health and safety, safe environments, and community resources.

Information: All ECE classes require college-level reading and writing skills. This course replaces CDA 104, CDA 119, and CDA 151.

Offered: May not be offered this year, check class schedule.

ECE 211 Inclusion of Young Children with Special Needs

3 cr. hrs. 3 periods (3 lec.)

Overview of the exceptional learner (birth to age 8). Includes educational implication and service delivery, public policy, identification and assessment, specific areas of exceptionality, service plans, support systems for families, national, state and local responsibilities, early intervention, and observational records. Also includes field experience.

Prerequisite(s): ECE 117.

Information: This course replaced ECE 111. Either ECE 111 or ECE 211 will meet the graduation requirement.

Information: Students must have college-level reading and writing skills to be successful in ECE courses.

Offered: May not be offered this year, check class schedule.

ECE 226 Positive Child Guidance

3 cr. hrs. 3 periods (3 lec.)

Introduction to theory and application of early childhood classroom planning, guidance techniques and classroom management. Includes application of developmental theories, developmentally appropriate practices, behavior management, cultural implications, teaching practices, professional development, and self-evaluation.

Prerequisite(s): ECE 117 and 118, completed with a grade of C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

Information: Includes a 9-hour practicum.

Information: In order to be successful in all ECE classes, students must have college-level reading and writing skills.

Offered: Fall, Spring, Summer.

ECE 228 The Young Child: Family, Culture, and Community

3 cr. hrs. 3 periods (3 lec.)

Examination of the influences of family, culture and community on the development and learning of young children. Includes development of personal framework for understanding cultures; cultural differences in attitudes about play; age and cultural appropriateness of classroom materials; cross-cultural communication techniques; techniques for utilizing family strengths; strategies for involving families in the school and classroom; strategies for developing flexible response practices; and community project development.

Prerequisite(s): ECE 117 and 118, completed with a C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

Information: This course replaced ECE 128. Either ECE 128 or 228 will meet the graduation requirement.

Information: In order to be successful in all ECE classes, students must have college-level reading and writing skills.

Offered: Fall, Spring, Summer.

ECE 240 Assessment of Young Children

3 cr. hrs. 3 periods (3 lec.)

Assessment techniques associated with the evaluation of young children. Includes observation methods, interpreting assessment data, legal and ethical issues related to assessment, methods and strategies, and application of assessment data.

Prerequisite(s): ECE 117, 118, 226, and 228, completed with a C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

Information: In order to be successful in all ECE classes, students must have college-level reading and writing skills.

Offered: Fall, Spring, Summer.

ECE 245 Integrating Learning and Lesson Planning through the Arts

3 cr. hrs. 3 periods (3 lec.)

Survey of principles, materials, techniques, and resources for teaching music/art to children. Includes selection of appropriate materials and activities, integration with basic child development ages/stages, creation of the appropriate environment, integration with other subject areas, and role of the teacher.

Information: Students must have college-level reading and writing skills to be successful in all ECE courses.

Offered: May not be offered this year, check class schedule.

ECE 246 Integrating Learning and Lesson Planning: Literacy

3 cr. hrs. 3 periods (3 lec.)

Study of oral and written language acquisition and emergent literacy. Includes developmental theories, language integration, language rich environments, children's literature, and family involvement. Also includes selection of appropriate materials and activities, integration with basic childhood development ages/stages, creation of the appropriate environment, integration with other subject areas, and role of the teacher.

Prerequisite(s): ECE 117, 118, 226, and 228, completed with a C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

Information: An approved child development course may be used in place of ECE 117.

Information: ECE 245 taken fall 2014-summer 2015, or ECE 110 (or ECE 110A and ECE 110B), or ECE 112 is considered to be the equivalent of this course.

Information: Students must have college-level reading and writing skills to be successful in ECE courses.

Offered: Fall, Spring, Summer.

ECE 292 Early Childhood Education: Theory to Practice

4 cr. hrs. 16 periods (1 lec., 15 lab)

Practical experience in early child care and education. Includes developmentally appropriate practices, evaluation techniques, portfolio development, child advocacy, and self-evaluation. Also includes observation, assessment, documentation techniques, and 100 hours of documented work with children birth through prekindergarten.

Prerequisite(s): ECE 117, 118, 226, 228, 240, and 246, completed with a C or better. CDA 102, 121, and 271 together can be used instead of ECE 118.

Information: An approved child development course may be used in place of ECE 117.

Information: Consent of instructor or program coordinator before enrolling in this course.

Information: A fingerprint clearance card, TB test, and certain immunizations are required.

Information: Students must have college-level reading and writing skills to be successful in ECE courses.

Information: Prerequisites will be waived for students who have achieved a passing score on the Arizona Educator Proficiency Assessment test #36 (Early Childhood Education) and test #93 (Professional Knowledge-Early Childhood).

Offered: Fall, Spring, Summer.

Economics

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ECN 150 An Economic Perspective

3 cr. hrs. 3 periods (3 lec.)

The study of the interactions of individuals and societies from the viewpoint of economics. Includes the philosophy of economics, the history of economic thought, conventional economic theory, questions of equity versus efficiency, contemporary economic issues, microeconomics, macroeconomics, the individual and our democracy.

Information: This course is designed to be taken as a single class, as a pre-economics principles course (e.g. before ECN 200, 201 or 202), or as a post-principles course (e.g. after ECN 200, 201, or 202).

Offered: Fall, Spring.

ECN 150HC An Economic Perspective: Honors

3 cr. hrs. 3 periods (3 lec.)

The study of the interactions of individuals and societies from the viewpoint of economics. Includes the philosophy of economics, the history of economic thought, conventional economic theory, questions of equity versus efficiency, contemporary economic issues, microeconomics, macroeconomics, the individual and our democracy. Also includes additional Honors content.

Information: This course is designed to be taken as a single class, as a pre-economics principles course (e.g. before ECN 200, 201 or 202), or as a post-principles course (e.g. after ECN 200, 201, or 202).

Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

Honors Content: Intensive research using highest standards and best practices for the discipline; a significant number/variety of readings of both primary and secondary sources; "high quality"; peer reviewed paper or project in format appropriate for this discipline; and a presentation of research, either in class or to a wider audience.

Offered: Fall, Spring.

ECN 200 Basic Economic Principles

3 cr. hrs. 3 periods (3 lec.)

Examination of microeconomic and macroeconomic theory with economic decision making, economic systems, production possibilities model, and market analysis. Includes micro topics, such as consumer demand, producer supply, and overall price determination. Also includes macro topics, such as goals and problems of the macroeconomy, fiscal policy, budgets, the Federal Reserve, and monetary policy.

Recommendation: MAT 092.

Information: Not open to students who have taken or are taking ECN 201 and/or ECN 202.

Offered: May not be offered this year, check class schedule.

ECN 201 Microeconomic Principles

3 cr. hrs. 3 periods (3 lec.)

Economic theory as applied to individual decision-making units. Includes economic decision making, economic systems, production possibilities model, and market analysis. Also includes details of consumer demand with elasticity and utility maximization, producer supply with market structures and profit maximization, and overall price determination.

Recommendation: MAT 092.

Offered: Fall, Spring, Summer.

ECN 201HC Microeconomics Principles: Honors

3 cr. hrs. 3 periods (3 lec.)

Economic theory as applied to individual decision-making units. Includes economic decision making, economic systems, production possibilities model, and market analysis. Also includes details of consumer demand with elasticity and utility maximization, producer supply with market structures and profit maximization, and overall price determination. Also may include the following Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; "high quality"; peer reviewed paper or project in a format appropriate for this discipline: presentation of research, in class or to a wider audience.

Recommendation: MAT 092

Information: Must qualify for Honors program. ECN 201HC will fulfill any ECN 201 requirement. Faculty or Advisor approval may be required before enrolling in this course.

Offered: Fall.

ECN 202 Macroeconomic Principles

3 cr. hrs. 3 periods (3 lec.)

Economic theory as applied to the operation of the economy as a whole. Includes economic decision making, economic systems, production possibilities model, and market analysis. Also includes goals and problems of the macroeconomy, foundations of the macroeconomy, fiscal policy, budgets, money, the role of financial institutions and the Federal Reserve, money creation, monetary theory and policy.

Recommendation: MAT 092.

Offered: Fall, Spring, Summer.

ECN 202HC Macroeconomics Principles: Honors

3 cr. hrs. 3 periods (3 lec.)

Economic theory as applied to the operation of the economy as a whole. Includes economic decision making, economic systems, production possibilities model, and market analysis. Also includes goals and problems of the macroeconomy, foundations of the macroeconomy, fiscal policy, budgets, money, the role of financial institutions and the Federal Reserve, money creation, monetary theory and policy. Also may include the following Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; "high quality", peer reviewed paper or project in a format appropriate for this discipline: presentation of research, in class or to a wider audience.

Recommendation: MAT 092

Information: Must qualify for Honors program. ECN 202HC will fulfill any ECN 202 requirement. Faculty or Advisor approval may be required before enrolling in this course.

Offered: Spring.

ECN 296 Independent Study in Economics

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Independent study projects or special interest areas in economics under the supervision of a faculty member.

Prerequisite(s): ECN 200, or ECN 201 and 202.

Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

EDU 103 Teaching Students with ADD/ADHD

1 cr. hrs. 1 periods (1 lec.)

Strategies for working with children with attention difficulties. Includes overview Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD), diagnostic procedures, most common treatments, laws pertaining to servicing ADD/ADHD, strategies for the classroom, and overview of resources and organizations.

Information: May be taken for Professional Development purposes.

Offered: May not be offered this year, check class schedule.

EDU 200 Introduction to Education

3 cr. hrs. 3 periods (3 lec.)

Provides students with an introductory overview of Education. Includes purposes of schools and schooling; characteristics of effective schools; diversity and its effects on schools, teachers, and students; social problems affecting schools; comparative education; curriculum issues and controversies; and technology's impact on schools and schooling. Also includes philosophical, legal, and financial issues facing today's schools; history of American education; and current trends in education reform.

Information: This class requires 10 hours of classroom observation in a local K-12 school. Students must select their site by the first EDU200 class session and determine if the site requires students to obtain fingerprint clearance and a background check before participation.

Offered: Fall, Spring.

EDU 201 Diversity in Education

3 cr. hrs. 3 periods (3 lec.)

Examination of diversity that encompasses age, class, gender, race, disability, sexual orientation, and culture. Includes the effects of diversity on the K-12 classroom; demographic changes, multicultural philosophies, and diverse perspectives; and approaches for helping students communicate. Also includes analysis of prejudice, single-group studies, multicultural education, and human relations and capital. Also includes an exploration of children's academic achievement in light of learning and teaching styles, and a reconstructionist approach to classroom diversity and curriculum planning.

Information: This class requires 10 hours of classroom observation in a local K-12 school. Students must select their site by the first EDU201 class session and determine if the site requires students to obtain fingerprint clearance and a background check before participation.

Offered: Fall, Spring.

EDU 202 Introduction to the Exceptional Learner

3 cr. hrs. 3 periods (3 lec.)

Foundations of special education, encompassing current educational practices and related educational theories on instruction, classroom management, and assessment. Includes cultural considerations within K-12 special education and students transitioning both within the school and between school and the community. Also includes the role and function of the special education teacher; preparation of lesson plans, assessment, instruction, and technology; and compliance with relevant regulations.

Information: This class requires 10 hours of classroom observation in a local K-12 school. Students must select their site by the first EDU202 class session and determine if the site requires students to obtain fingerprint clearance and a background check before participation.

Offered: Fall, Spring.

EDU 206 Relationships in Classroom Settings

3 cr. hrs. 3 periods (3 lec.)

Introduction to basic classroom management principles. Includes management of curriculum, instruction, the physical environment, psychosocial factors, student motivation, and special groups. Also includes a focus on disruptive family involvement, managing student behavior, communication, stress management, and appropriate record keeping.

Information: This class requires 10 hours of classroom observation in a local K-12 school. Students must select their site by the first EDU206 class session and determine if the site requires students to obtain fingerprint clearance and a background check before participation.

Offered: Fall, Spring.

EDU 241 Middle School Curriculum and Instruction

3 cr. hrs. 3 periods (3 lec.)

Concepts, skills and research techniques for middle school teachers. Examination of constructivism, research, curriculum development and instruction, unit planning, assessment and evaluation, materials selection, teaching strategies, diversity, motivation and classroom management.

Information: Education department approval is required before enrolling in this course.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum. Meets Middle School Endorsement requirements in conjunction with other coursework. May be taken for Professional Development purposes.

Offered: May not be offered this year, check class schedule.

EDU 242 Middle School Practicum

3 cr. hrs. 3 periods (3 lec.)

Strategies and tools for middle school teaching; subject matter instruction methods; adolescent development and learning; diversity of learners and instruction; creating a positive learning environment; instruction planning and implementation; assessment; professionalism; and personal reflection.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 30-hour middle school practicum placement. Meets Middle School Endorsement requirements in conjunction with other coursework. May be taken for Professional Development purposes.

Offered: May not be offered this year, check class schedule.

EDU 243 ESL Practicum

3 cr. hrs. 3 periods (3 lec.)

Concepts, techniques, and on-site experience working with English Language Learners (ELL). Requires observations of ELL's in a variety of settings, evaluation of English as a Second Language (ESL) and Sheltered English Instruction, teaching techniques and actual experience in developing lessons and teaching ELL.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 30-hour ESL K-12 practicum May be taken for Professional Development purposes.

Offered: May not be offered this year, check class schedule.

EDU 244 Teaching Reading and Writing to ESL Students

3 cr. hrs. 3 periods (3 lec.)

Introduction to teaching reading and writing in an English as a Second Language (ESL) setting. Includes teaching techniques, learning strategies and activities, and the six traits of writing, including reading and writing across the curriculum.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 10-hour practicum. May be taken for Professional Development purposes.

Offered: May not be offered this year, check class schedule.

EDU 245 Linguistics

3 cr. hrs. 3 periods (3 lec.)

Introduction to the nature, structure, and acquisition of language. Includes basic concepts of phonetics, phonology, morphology, syntax, semantics, psycholinguistics, language variation, and theories of first and second language acquisition.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum May be taken for Professional Development purposes.

Offered: May not be offered this year, check class schedule.

EDU 246 Assessment of ESL Students

3 cr. hrs. 3 periods (3 lec.)

Introduction to the assessment of English as a Second Language (ESL) students, including knowledge of assessment, purposes of assessment, identification, placement, exit standards for students, linking assessment to instruction, and creating classroom assessments.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum. May be taken for Professional Development purposes.

Offered: May not be offered this year, check class schedule.

EDU 247 Family and Community Involvement in ESL Student Instruction

3 cr. hrs. 3 periods (3 lec.)

Introduction to involving families, school, and community in English as a Second Language (ESL) student learning. Includes research on the value of family/school connections, an overview of effective programs, analysis of practices and resources available, and information on how to develop a school action plan for increasing family and community involvement.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 10-hour practicum. May be taken for Professional Development purposes.

Offered: May not be offered this year, check class schedule.

EDU 252 Reading Diagnosis, Decoding, Remediation and Practicum

3 cr. hrs. 3 periods (3 lec.)

Fundamentals of diagnosis, decoding, and remediation of reading problems. Includes instruction techniques on administering, analyzing, and interpreting informal procedures, and using the results to plan a program of remediation.

Prerequisite(s): EDU 276 and 277.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education office for specific information.

Offered: May not be offered this year, check class schedule.

EDU 254 Literacy Development in the Primary Grades/Practicum

3 cr. hrs. 3 periods (3 lec.)

Philosophy, information and strategies for literacy development in the primary classrooms. Includes literacy and language development theories, observation and assessment, family literacy, strategies for teaching, and motivation and management.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information.

Offered: May not be offered this year, check class schedule.

EDU 255 Content Area Reading Middle and Secondary Schools/Practicum

3 cr. hrs. 3 periods (3 lec.)

Information and strategies in content area literacy and its fundamental role in instruction across the curriculum. Topics include: overview of content area literacy; active learning in the reading and writing process; comprehension, vocabulary, and study skill strategies; the role of literature in the content areas: writing as a tool for content area comprehension; assessment strategies and technology.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information.

Offered: May not be offered this year, check class schedule.

EDU 257 Special Topics: Children's Literature and Literacy/Practicum

3 cr. hrs. 3 periods (3 lec.)

Strategies for using children's literature to support literacy development. Topics include: literature selection criteria, genre, response strategies, literature assessment, elements and styles of literature and poetry, ethnic and gender issues in children's literature, thematic unit building, response assessment, using children's literature to teach writing, and benefits of literature and response in the classroom.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 10-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information.

Offered: May not be offered this year, check class schedule.

EDU 268 Issues in Education

1 cr. hrs. 1 periods (1 lec.)

Special topics in education with an emphasis on current issues. Includes issues and concepts relating to the National Board for Professional Teaching, standards, and future teaching practices. Also includes student learning, personal motivation, lesson plan development, behavior and ethics, and professional portfolio.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

EDU 270 Educational Technology and Curriculum Integration

3 cr. hrs. 3 periods (3 lec.)

Introduction to topics and issues in educational technology. Includes electronic communications, basic productivity applications, computer system basics, multimedia and educational courseware and technology integration into the curriculum. Also includes planning for and evaluating educational technology, security, ethics and other issues in technology, and emerging technologies in education.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio.

Offered: May not be offered this year, check class schedule.

EDU 271 Introduction to Teaching

3 cr. hrs. 3 periods (3 lec.)

Introduction to teaching for the prospective teacher focusing on the major models of teaching, the purposes served and the curriculum methods employed with each model. Also includes legal and ethical issues, teaching as a profession, and strategies and practices for increasing instructional effectiveness.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio.

Offered: May not be offered this year, check class schedule.

EDU 272 Educational Psychology

3 cr. hrs. 3 periods (3 lec.)

Introduction to the basic principles of educational psychology relating to the areas of physical, psychological, moral, social and cognitive development. Includes personal and social development, cognitive processes in the classroom, behaviorism, constructivism, learning theorists, and assessment.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio.

Offered: May not be offered this year, check class schedule.

EDU 273 Introduction to Special Education

3 cr. hrs. 3 periods (3 lec.)

Introduction to a variety of instructional, classroom management and assessment strategies pertinent to teaching in a special education program. Includes role and function of the special education teacher, preparing for instruction, constructing lesson plans, assessment, instruction, classroom management, instructional media learning tools, and special education compliance.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 10-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Offered: May not be offered this year, check class schedule.

EDU 275 Classroom Management

3 cr. hrs. 3 periods (3 lec.)

Mastery of the knowledge and skills necessary to create and maintain a positive classroom environment. Includes overview of classroom management, students' basic needs, creating positive interpersonal relationships, creating positive peer relationships, working with parents and student motivation and learning. Also includes developing standards for classroom behavior, responding to violations of rules and procedures, using problem solving techniques, developing individual behavior plans, and school-wide student management programs.

Information: Post-Degree Teacher Certification Program or Education Department approval is required before enrolling in this course. Requires a paid subscription to TaskStream electronic portfolio.

Offered: May not be offered this year, check class schedule.

EDU 276 Foundation of Reading Instruction

3 cr. hrs. 3 periods (3 lec.)

Literacy instruction at the elementary school level. Includes literacy development theory; literacy development at the preschool, early childhood and intermediate grade level; instruction techniques for all facets of literacy development; and comprehension strategies, including bilingual learners and special populations. Also includes focus on organizing the classroom and curriculum to enhance literacy development, techniques and assessment as tools for instruction and working with parents to enhance student achievement.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 15-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information. Requires a paid subscription to TaskStream electronic portfolio.

Offered: May not be offered this year, check class schedule.

EDU 277 Phonics Instruction in a Balanced Literacy Setting/Practicum

3 cr. hrs. 3 periods (3 lec.)

Overview and exploration of phonemic awareness, phonics instruction and related research findings. Includes quality literacy programming, understanding language and words, word study about letters and words, and thinking comprehensively.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This class requires a 15-hour practicum and can be used to fulfill some elements of the Reading Endorsement. Please contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information. Requires a paid subscription to TaskStream electronic portfolio.

Offered: May not be offered this year, check class schedule.

EDU 278 Elementary Science Methods and Curriculum Development

3 cr. hrs. 3 periods (3 lec.)

Overview of the content and instructional methods of teaching science in kindergarten through eighth grade. Includes the academic content of teaching science, the instructional methods of teaching science, practical application, and observation and evaluation.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 15-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Offered: May not be offered this year, check class schedule.

EDU 279 Elementary Math Methods and Curriculum Development

3 cr. hrs. 3 periods (3 lec.)

Introduction to the content and methods of curriculum development in elementary math for the elementary and middle school teacher. Includes standards, resources, teaching math concepts, cooperative learning, topics, teaching aids, activity lessons, integrating mathematics lessons with other disciplines, and presenting a lesson.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 15-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Offered: May not be offered this year, check class schedule.

EDU 280 Social Studies Methods and Curriculum Development

3 cr. hrs. 3 periods (3 lec.)

Overview of the content and methodology of teaching social studies in kindergarten through eighth grade. Includes the social studies academic content, methods of teaching social studies instruction, and evaluation.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 15-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Offered: May not be offered this year, check class schedule.

EDU 285 Secondary Teaching Methods

3 cr. hrs. 3 periods (3 lec.)

Introduction to a variety of relevant secondary instructional, classroom management, and assessment strategies. Includes the role and function of the teacher in a secondary classroom setting, preparing for instruction, developing lesson plans, designing assessments, delivering instruction, managing the classroom, working with instructional media, and assisting special needs students.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires a 15-hour practicum. Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Offered: May not be offered this year, check class schedule.

EDU 286 Structured English Immersion Methods (Completion)

3 cr. hrs. 3 periods (3 lec.)

Introduction to Structured English Immersion (SEI) methods designed to meet state standards for pre-service and in-service teachers of English Language Learners (ELL). Includes an examination of ELL proficiency standards, assessment of ELLs, SEI foundations and strategies, using disaggregated data to differentiate instruction and parental involvement.

Information: Meets SEI Endorsement requirements in conjunction with other coursework. Also meets Arizona Department of Education course requirements.

Offered: May not be offered this year, check class schedule.

EDU 290 Internship

8 cr. hrs. 40 periods (40 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval before enrolling in this course. EDU 290A, 290B, 290C and 290D together constitute EDU 290.

Offered: May not be offered this year, check class schedule.

EDU 290A Internship I

2 cr. hrs. 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio completion, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval before enrolling in this course. EDU 290A, 290B, 290C and 290D together constitute EDU 290.

Offered: May not be offered this year, check class schedule.

EDU 290B Internship II

2 cr. hrs. 10 periods (10 lab)

Continuation of EDU 290A, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio completion, teamwork and professional development and evaluation.

Information: This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval prior to registration.

Information: EDU 290A, 290B, 290C and 290D together constitute EDU290.

Offered: May not be offered this year, check class schedule.

EDU 290C Internship III

2 cr. hrs. 10 periods (10 lab)

Continuation of EDU 290B, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio completion, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval prior to registration. EDU 290A, 290B, 290C and 290D together constitute EDU 290.

Offered: May not be offered this year, check class schedule.

EDU 290D Internship IV

2 cr. hrs. 10 periods (10 lab)

Continuation of EDU 290C, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation; and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio completion, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education department approval prior to registration. EDU 290A, 290B, 290C, and 290D together constitute EDU 290.

Offered: May not be offered this year, check class schedule.

Education – General/Post Degree

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

EDC 240 Adolescent Development

3 cr. hrs. 3 periods (3 lec.)

Examination of early to young adult adolescent development, investigation of developmental theories and methods, and comprehensive analysis of problems encountered by today's youth. Topic focus includes physical, cognitive, moral, and personality development; familial and peer relations; dating and sexuality; and psychosocial problems such as teen suicide, delinquency, and substance abuse. Also includes ethnic and cultural considerations in addition to educational and vocational issues.

Information: This course requires a 10-hour practicum. Meets the Fitness and Sport Sciences Coaching Certificate requirements in conjunction with other coursework.

Offered: Fall, Spring.

EDC 250 Introduction to Teaching

3 cr. hrs. 3 periods (3 lec.)

Introduction to the teaching as a profession in the United States educational system. Includes professional teaching standards, school governance, and various perspectives on education, including historical, philosophical, social, legal, and ethical issues. Also includes an introduction to lesson planning, data literacy, and school culture and climate.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 250.

Offered: Fall.

EDC 251 Educational Psychology

3 cr. hrs. 3 periods (3 lec.)

Overview of how children develop (physically, psychologically, socially and cognitively) and the ways in which this information guides instruction. Includes theories of how learning is constructed and describes various factors that impact learning, such as student differences, motivation, engagement, classroom management, differentiated instruction, metacognition, assessment, and teacher self-reflection.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 251.

Offered: Fall.

EDC 252 Survey of Exceptional Education

3 cr. hrs. 3 periods (3 lec.)

Introduction to the field of Exceptional Education. Includes history and current laws, special education processes and procedures, effective communication, techniques for collaboration and consultation with general and special education teachers and parents, and characteristics of students with exceptionalities. Also includes current and relevant trends in special education, technology, and effective instructional strategies and resources that meet the needs of learners with exceptionalities.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 252.

Offered: Spring.

EDC 253 Educational and Assistive Technology

3 cr. hrs. 3 periods (3 lec.)

Introduction for pre-service teachers to the uses of technology in the K-12 school environment to enhance and support instruction and learning, including assistive technology for students with exceptionalities. Includes legal and ethical issues, instructional practices that incorporate technology, assessment, and use of technology to connect with the broader school community. Also includes conducting research, creating presentations, observing classrooms via virtual practica, and creating lesson plans.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 253.

Offered: May not be offered this year, check class schedule.

EDC 254 Classroom Management: Elementary

3 cr. hrs. 3 periods (3 lec.)

Overview of classroom management styles and strategies that support student engagement and achievement in grades 1-8. Includes learner differences, motivation, interpersonal relationships, teacher expectations, communication, and collaboration. Also includes organizational strategies, procedures, routines, current trends and restorative practices.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Fall.

EDC 256 Classroom Management: Secondary

3 cr. hrs. 3 periods (3 lec.)

Effective classroom management components that support student achievement and engagement in grades 7-12. Includes analysis of how learner differences, teacher expectations, effective communication, effective instruction, positive relationships, and restorative practices can impact learner behavior. Also includes self-assessment, classroom management strategies, including rules, procedures, and organizational strategies.

Information: Post Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Fall.

EDC 257 21st Century Learning

3 cr. hrs. 3 periods (3 lec.)

Introduction to strategies, tools, and resources for teaching in today's classrooms. Includes K-12 content standards, instructional objectives, lesson planning, data literacy, and 21st century skills. Also includes benefits and challenges of technology integration and functions of technology.

Information: Post Degree Teacher Certification Program approval is required before enrolling in this course. Same as ESE 257.

Offered: Spring.

EDC 262 Practicum 1: Elementary

2 cr. hrs. 4 periods (1 lec., 3 lab)

In a grades 1-8 classroom placement, educator candidates will learn effective teaching strategies for elementary students through performance, personal reflection and discussions. Includes professional ethics, self-assessment, effective collaboration, student assessment, motivating and engaging students, lesson planning and implementation, effective use of content standards, and digital responsibility.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades 1-8 classroom.

Offered: Fall.

EDC 263 Practicum 2: Elementary

2 cr. hrs. 4 periods (1 lec., 3 lab)

In a grades 1-8 classroom placement, educator candidates will learn effective teaching strategies for elementary students through performance, personal reflection and discussions. Includes teaching strategies, effective assessment, matching learning styles to teaching strategies, data analysis, creating effective collaborations, effective use of the learning cycle, and enhancing learning with technology.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades 1-8 classroom.

Offered: Spring.

EDC 264 Practicum 1: Secondary

2 cr. hrs. 4 periods (1 lec., 3 lab)

In a grades 6-12 classroom placement, educator candidates will learn effective teaching strategies for secondary students through performance, personal reflection and discussions. Includes professional ethics, self-assessment, effective collaboration, student assessment, motivating and engaging students, lesson planning and implementation, effective use of content standards, and digital responsibility.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades 6-12 classroom. offered: Fall, Spring.

EDC 265 Practicum 2: Secondary

2 cr. hrs. 4 periods (1 lec., 3 lab)

In a grades 6-12 classroom placement, educator candidates will learn effective teaching strategies for secondary students through performance, personal reflection and discussions. Includes professional ethics, self-assessment, effective collaboration, student assessment, motivating and engaging students, lesson planning and implementation, effective use of content standards, and digital responsibility.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades 6-12 classroom.

Offered: Spring.

EDC 270 Elementary Methods: English Language Arts

3 cr. hrs. 3 periods (3 lec.)

Emphasizes the application of theories, methods, and techniques for teaching English Language Arts (ELA) and Literacy in grades 1-8. Includes standards-based instruction, elements of effective instruction, differentiation, 21st century skills, technology, and assessment.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Fall.

EDC 271 Elementary Methods: Math

3 cr. hrs. 3 periods (3 lec.)

Emphasizes the application of theories, methods, and techniques for teaching Mathematics in grades 1-8. Includes standards-based instruction, elements of effective instruction, differentiation, 21st century skills, technology, and data literacy.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Fall.

EDC 272 Elementary Methods: Reading/Phonics

3 cr. hrs. 3 periods (3 lec.)

Overview of reading and phonics instruction at the elementary level (grades 1-8). Includes developmental stages of literacy and strategies for teaching phonics, phonemic awareness, vocabulary, decoding, fluency, and reading comprehension. Emphasizes the use of various assessment tools to analyze miscues, diagnose learner needs, guide planning, and differentiate instruction.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Summer.

EDC 273 Elementary Methods: Science/Social Studies

3 cr. hrs. 3 periods (3 lec.)

Emphasizes the application of theories, methods, and techniques for teaching Science and Social Studies (SS) in grades 1-8. Includes standards-based instruction, inquiry learning, problem-based learning, strategies to increase student engagement, 21st century learning, and digital technologies for Science and Social Studies instruction.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Summer.

EDC 274 Elementary Methods: Instruction Across the Curriculum

3 cr. hrs. 3 periods (3 lec.)

Instructional methods for organizing and integrating Literacy and Math across the elementary curriculum. Includes interdisciplinary teaching strategies, inquiry learning, formative and summative assessment, unit planning, lesson planning, and technology integration. Also includes writing instruction and assessment.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Spring.

EDC 275 Secondary Methods: English Language Arts/Social Sciences

3 cr. hrs. 3 periods (3 lec.)

Instructional methods in English Language Arts and Social Sciences for the secondary teacher. Includes considerations in instructional design related to English Language Arts and Social Sciences such as the Essential Elements of Instruction learning objectives, scaffolding instruction, cross-curricular instruction, differentiated instruction, assessment, instructional strategies, learning theories, identifying technology resources, Arizona College and Career Ready Standards, and Arizona Social Studies Standards. Also includes factors impacting student learning and achievement such as teacher bias, socio-economic status, gender, language, culture, special needs, teacher expectations, motivation, engagement, and classroom management.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Fall.

EDC 276 Secondary Methods: Math/Science

3 cr. hrs. 3 periods (3 lec.)

Instructional methods in Mathematics and Science for the secondary teacher. Includes considerations in instructional design related to mathematics and science such as the Essential Elements of Instruction (EEI), learning objectives, scaffolding instruction, cross-curricular instruction, differentiated instruction, assessment, instructional strategies, learning theories, identifying technology resources, Arizona College and Career Ready Standards, and Arizona Science Standards/Next Generation Science Standards. Also includes factors impacting student learning and achievement such as teacher bias, socio-economic status, gender, language, culture, special needs, teacher expectations, motivation, engagement, and classroom management.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Fall.

EDC 277 Secondary Methods: Instruction Across the Curriculum

3 cr. hrs. 3 periods (3 lec.)

Instructional methods focused on integrating English Language Arts (ELA)/Literacy and Math across secondary curriculum with a focus on strategies aligned with the Arizona College and Career Ready Standards (AZCCRS), Arizona Social Studies Standards, and Arizona Science Standards/Next Generation Science Standards. Includes the Essential Elements of Instruction (EEI), designing developmentally appropriate instruction, cross-curricular instruction, and learner collaboration. Also includes strategies for incorporating 21st Century Learning Skills into the curriculum, data literacy strategies, and strategies that promote learner development of social and cultural perspectives that expand understanding of local and global issues.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Spring.

EDC 291 Student Teaching: Elementary

8 cr. hrs. 8 periods (8 lec.)

In a grades 1-8 classroom placement, educator candidates will observe and implement developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, selecting appropriate teaching resources, interdisciplinary teaching models, gathering and analyzing student data, Multiple Intelligences Theory, professional development, and collaboration with stakeholders.

Information: Admission to the Post-Degree Teacher Certification Program and Capstone readiness approval are required before enrolling in this course. This course requires 12 weeks (60 full instructional days) of field experience in a grades 1-8 classroom. EDC 291A and EDC 291B together constitute EDC 291.

Offered: Spring.

EDC 291A Student Teaching I: Elementary

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades 1-8 Educator Preparation Program (EPP) Internship classroom. Includes developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, and selecting appropriate teaching resources.

Information: Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. EDC 291A and EDC 291B together constitute EDC 291.

Offered: Fall.

EDC 291B Student Teaching II: Elementary

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades 1-8 Educator Preparation Program (EPP) Internship classroom. Includes interdisciplinary teaching models, gathering and analyzing student data, Multiple Intelligences Theory, professional development, and collaboration with stakeholders.

Information: Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. EDC 291A and EDC 291B together constitute EDC 291.

Offered: Spring.

EDC 292 Student Teaching: Secondary

8 cr. hrs. 8 periods (8 lec.)

Overview of the student teaching experience in a grades 6-12 classroom placement. Includes developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, selecting resources, interdisciplinary models, understanding and utilizing assessment data, Multiple Intelligence Theory, professional development, and collaboration with stakeholders.

Information: Admission to the Post-Degree Teacher Certification Program and Capstone readiness approval are required before enrolling in this course. This course requires 12 weeks (60 full instructional days) of field experience in a grades 6-12 classroom. EDC 292A and EDC 292B together constitute EDC 292.

Offered: Spring.

EDC 292A Student Teaching I: Secondary

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades 6-12 Educator Preparation Program (EPP) Internship classroom. Includes developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, selecting resources, interdisciplinary models, understanding and utilizing assessment data, Multiple Intelligence Theory, professional development, and collaboration with stakeholders.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. EDC 292A and EDC 292B together constitute EDC 292.

Offered: Fall.

EDC 292B Student Teaching II: Secondary

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades 6-12 Educator Preparation Program (EPP) Internship classroom. Includes developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, selecting resources, interdisciplinary models, understanding and utilizing assessment data, Multiple Intelligence Theory, professional development, and collaboration with stakeholders.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. EDC 292A and EDC 292B together constitute EDC 292.

Offered: Spring.

Education – Special Education

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

EDS 250 Issues in Special Education

1 cr. hrs. 1 periods (1 lec.)

Overview of issues presented in public schools when special education services are provided to students with disabilities. Includes perspectives which challenge and support the delivery of services and examination of their consequences.

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

EDS 251 Legal Issues in Special Education

1 cr. hrs. 1 periods (1 lec.)

An introduction to legal issues in special education. Includes the history of special education law, Section 504 of the Rehabilitation Act, Americans with Disabilities Act, and the purpose, principles and amendments to the Individuals with Disabilities Education Act (IDEA) and its re-authorizations, application of free and appropriate public education to students with disabilities, least restrictive environment mandates. Also includes disciplinary procedures, transition plans, and key themes in legal regulations regarding the disabled.

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

EDS 252 Understanding Individuals with Disabilities Education Act

1 cr. hrs. 1 periods (1 lec.)

Overview and examination of the Individuals with Disabilities Education Act, 2004, which mandates students with disabilities be provided a free, appropriate public education. Includes an emphasis on the process of eligibility. Also includes the delivery of services to school age children.

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

EDS 253 Development and Implementation of IEPs

1 cr. hrs. 1 periods (1 lec.)

Overview and examination of an Individualized Education Program (IEP) required components. Includes how IEPs are developed for and utilized in the classroom. The roles and responsibilities of required members of IEP team will be reviewed and analyzed in relation to students, family members, and teachers. Also includes an emphasis on the cycle of creating, reviewing and revising an IEP to reflect the needs of students.

Information: Admission to the Post- Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

EDS 254 Classroom Management for Special Education

2 cr. hrs. 2 periods (2 lec.)

Overview of skills, methods and strategies for behavior management. Includes a foundation on how to recognize, evaluate, and respond to classroom situations. Also includes how to develop classroom management skills with educators, parents and students, as well as develop a behavior management plan for special needs students.

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Information: This class requires a 10-hour special education practicum.

Offered: May not be offered this year, check class schedule.

EDS 255 Assistive Technology for Special Education Teachers

3 cr. hrs. 3 periods (3 lec.)

An overview of the assistive technology devices and services that can assist a person with a disability to overcome the functional limitations of the disability. Includes the continuum of assistive technology devices, instructional designs for learning, curriculum adaptation and integration strategies, and assessment and evaluation protocols. Also includes how to make better choices about technology and individual needs.

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Offered: May not be offered this year, check class schedule.

EDS 256 Survey of Special Education

3 cr. hrs. 3 periods (3 lec.)

Overview of special education foundations and issues. Includes special education issues: mental retardation, learning disabilities, Attention Deficit Hyperactivity Disorder (ADHD), emotional and behavioral disorders, gifted and talented, speech and language disorders, hearing and visual impairments, autism, and physical, health, and traumatic brain injuries. Also includes special education history, legislation, family effects, diversity, and educational considerations.

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Offered: May not be offered this year, check class schedule.

EDS 257 Diagnosis Assessment of Students with Mild-Moderate Disabilities

3 cr. hrs. 3 periods (3 lec.)

Concepts, skills, and techniques to diagnose and assess students with learning and mild-moderate disabilities. Includes how to develop screening, pre-referral, eligibility, and placement for individuals with exceptional learning needs skills. Includes an emphasis on informal assessment for instruction and on the introduction of formal assessment for special education eligibility. Also includes synthesizing, developing and writing a comprehensive report.

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Information: This class requires a 15-hour special education practicum.

Offered: May not be offered this year, check class schedule.

EDS 258A Foundations of Instruction Cross-Categorical

2 cr. hrs. 2 periods (2 lec.)

Foundations of instruction for designated disabilities, including mild to moderate mental retardation, learning disabilities, emotional disabilities, and physical and other health impairments. Includes assessment, instruction, and instructional design; establishment and maintenance of case records; use of assessment data to design goals and objectives; development of Individualized Education Plans (IEPs). Also includes communication and consultation with teachers, families, students, administrators, and agencies; directing and monitoring activities of Paraprofessionals, aids, volunteers, and peer tutors; and modification of curriculum and instruction to accommodate student needs.

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Offered: May not be offered this year, check class schedule.

EDS 259 Teaching Methods Cross-Categorical

3 cr. hrs. 3 periods (3 lec.)

Overview of how to educate special-needs students while meeting their needs academically and socially. Includes methods of teaching students in the Special Education classroom, general education classroom; methods of collaboration with general education teachers and parents; and setting up your classroom for classroom management success. Also includes how to construct and carry out an effective lesson plan and develop an Individualized Education Program (IEP).

Information: Admission to the Post-Degree Teacher Certification Program or Education department permission is required before enrolling in this course.

Information: Requires a paid subscription to TaskStream electronic portfolio. Additional fees apply.

Information: This class requires a 15-hour special education practicum.

Offered: May not be offered this year, check class schedule.

EDS 260 Developmental Reading, Instruction, Assessment, Remediation

3 cr. hrs. 3 periods (3 lec.)

Concepts, techniques and skills to teach struggling readers. Includes the components of reading. Includes the application of concepts to conduct assessments, instructional and remedial activities for struggling readers. Also includes how to participate in the Individualized Education Program (IEP) process to help develop long-range individualized instructional plans and create short-range goals and objectives considering an individual student's abilities, needs and learning environment.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Information: This class requires a 15-hour practicum and can be used to fulfill some elements of the Reading Endorsement.

Contact the Post-Degree Teacher Education office or contact the Arizona Department of Education Certification office for specific information.

Information: Requires a paid subscription to TaskStream electronic portfolio. Same as EDU260.

Offered: May not be offered this year, check class schedule.

EDS 290 Internship

8 cr. hrs. 40 periods (40 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post-Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration.

Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

Offered: May not be offered this year, check class schedule.

EDS 290A Internship I

2 cr. hrs. 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post-Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration.

Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

Offered: May not be offered this year, check class schedule.

EDS 290B Internship III

2 cr. hrs. 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration.

Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

Offered: May not be offered this year, check class schedule.

EDS 290C Internship III

2 cr. hrs. 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration.

Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

Offered: May not be offered this year, check class schedule.

EDS 290D Internship IV

2 cr. hrs. 10 periods (10 lab)

Overview of the student teaching experience, Teacher Preparation Program (TPP) Internship. Includes initial discussion, observation, assessing the learning environments, evaluating educational resources, long and short-term planning, mid-term evaluation, curriculum development and implementation and accommodation to individual needs. Also includes assessments, parent and community collaboration, portfolio, teamwork, and professional development and evaluation.

Information: This course requires admission to the Post Degree Teacher Certification Program and TPP Internship and Education Department approval prior to registration.

Information: EDS 290A, 290B, 290C, and 290D together constitute EDS 290.

Offered: May not be offered this year, check class schedule.

Education – Special/Post Degree

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

ESE 250 Introduction to Teaching

3 cr. hrs. 3 periods (3 lec.)

Introduction to the teaching as a profession in the United States educational system. Includes professional teaching standards, school governance, and various perspectives on education, including historical, philosophical, social, legal, and ethical issues. Also includes an introduction to lesson planning, data literacy, and school culture and climate.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 250.

Offered: Fall.

ESE 251 Educational Psychology

3 cr. hrs. 3 periods (3 lec.)

Overview of how children develop (physically, psychologically, socially and cognitively) and the ways in which this information guides instruction. Includes theories of how learning is constructed and describes various factors that impact learning, such as student differences, motivation, engagement, classroom management, differentiated instruction, metacognition, assessment, and teacher self-reflection.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 251.

Offered: Fall.

ESE 252 Survey of Exceptional Education

3 cr. hrs. 3 periods (3 lec.)

Introduction to the field of Exceptional Education. Includes history and current laws, special education processes and procedures, effective communication, techniques for collaboration and consultation with general and special education teachers and parents, and characteristics of students with exceptionalities. Also includes current and relevant trends in special education, strategies and resources that meet the needs of learners with exceptionalities.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 252.

Offered: Spring.

ESE 253 Educational and Assistive Technology

3 cr. hrs. 3 periods (3 lec.)

Introduction for pre-service teachers to the uses of technology in the K-12 school environment to enhance and support instruction and learning, including assistive technology for students with exceptionalities. Includes legal and ethical issues, instructional practices that incorporate technology, assessment, and use of technology to connect with the broader school community. Also includes conducting research, creating presentations, observing classrooms via virtual practica, and creating lesson plans.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 253.

Offered: May not be offered this year, check class schedule.

ESE 254 Foundations of Instruction: Mild-Moderate Disabilities

3 cr. hrs. 3 periods (3 lec.)

Framework for understanding and working with students with mild-moderate disabilities. Includes characteristics of students with mild-moderate disabilities and special education procedures and processes. Also includes collaboration and consultation practices; effective educational techniques to support the needs of learners with disabilities; assistive and educational technology; and current social, cultural, and/or academic trends.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Fall.

ESE 255 Classroom Management for Mild-Moderate Disabilities

3 cr. hrs. 3 periods (3 lec.)

Effective classroom management components that support student achievement and engagement for students with mild-moderate disabilities in grades K-12. Includes how teacher expectations, effective communication, positive relationships, and restorative practices can impact learner behavior. Also includes organizing the physical environment, establishing effective classroom rules and procedures, Functional Behavioral Assessments (FBA), and Behavior Intervention Plans (BIP).

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Spring.

ESE 257 21st Century Learning

3 cr. hrs. 3 periods (3 lec.)

Introduction to strategies, tools, and resources for teaching in today's classrooms. Includes K-12 content standards, instructional objectives, lesson planning, data literacy, and 21st century skills. Also includes benefits and challenges of technology integration and functions of technology.

Information: Post Degree Teacher Certification Program approval is required before enrolling in this course. Same as EDC 257.

Offered: Spring.

ESE 260 Practicum 1: Mild-Moderate Disabilities

2 cr. hrs. 4 periods (1 lec., 3 lab)

In a grades K-12 classroom placement, educator candidates will learn effective teaching strategies for students with mild-moderate disabilities through performance, personal reflection and discussions. Includes professional ethics, self-assessment, effective collaboration, student assessment, motivating and engaging students, lesson planning and implementation, effective use of content standards, and digital responsibility.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades K-12 classroom.

Offered: Fall.

ESE 261 Practicum 2: Mild-Moderate Disabilities

2 cr. hrs. 4 periods (1 lec., 3 lab)

In a grades K-12 classroom placement, educator candidates will learn effective teaching strategies for students with mild-moderate disabilities through performance, personal reflection and discussions. Includes teaching strategies, effective assessment, matching learning styles to teaching strategies, data analysis, creating effective collaborations, effective use of the learning cycle, and enhancing learning with technology.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course. This course requires 32 hours of practicum placement in a grades K-12 classroom.

Offered: Spring.

ESE 270 Methods of Instruction: Students/Mild-Moderate Disabilities

3 cr. hrs. 3 periods (3 lec.)

Emphasizes the application of materials, strategies, methods, and techniques for creating lessons that promote mastery of learning and active participation for teaching students with mild-moderate disabilities. Includes Essential Elements of Instruction (EEI) and Arizona College and Career Readiness Standards (AZCCRS). Also includes the incorporation of differentiated instruction and technology into lesson planning.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Fall.

ESE 271 Mild-Moderate Methods: K-12 Inst. Across the Curriculum

3 cr. hrs. 3 periods (3 lec.)

Instructional strategies for integrating English Language Arts (ELA)/Literacy and Math cross-disciplinary instruction for students with mild-moderate exceptionalities. Includes Arizona's College and Career Ready Standards (AZCCRS), lesson/unit planning, incorporating digital tools, strategies for critical thinking, differentiated instruction, and assessment.

Prerequisite(s): ESE 254 and 270.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Summer.

ESE 272 Developmental Reading, Instruction, Assessment, Remediation

3 cr. hrs. 3 periods (3 lec.)

Comprehensive review of reading instruction for struggling learners. Includes reading development; characteristics of effective readers and those with difficulties; formal and informal assessment of phonics, fluency, phonemic awareness, comprehension, and vocabulary; and methods, materials, and techniques for teaching phonics, fluency, phonemic awareness, comprehension, and vocabulary. Also includes lesson planning, reading technology for home/school connection, and current academic reading trends.

Prerequisite(s): ESE 254 and 270.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Summer.

ESE 273 Diagnosis and Assessment of Mild-Moderate Disabilities

3 cr. hrs. 3 periods (3 lec.)

A comprehensive review of measurement terminology, principles, ethical practices, and types; testing accommodations and modifications; testing bias; using technology to create forms of feedback; and creating informal assessments. Also includes cognitive processes that influence learning, data analysis, and the use of data to plan instruction.

Information: Post-Degree Teacher Certification Program approval is required before enrolling in this course.

Offered: Spring.

ESE 290 Student Teaching: Mild-Moderate Disabilities

8 cr. hrs. 8 periods (8 lec.)

In a grades K-12 classroom placement having students with mild-moderate disabilities, educator candidates will observe and implement developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, selecting appropriate teaching resources, interdisciplinary teaching models, gathering and analyzing student data, Multiple Intelligences Theory, professional development, and collaboration with stakeholders.

Information: Admission to the Post-Degree Teacher Certification Program and Capstone readiness approval are required before enrolling in this course. This course requires 12 weeks (60 full instructional days) of field experience in a grades K-12 classroom. ESE 290A and ESE 290B together constitute ESE 290.

Offered: Spring.

ESE 290A Student Teaching I: Mild-Moderate Disabilities

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades K-12 Educator Preparation Program (EPP) Internship classroom having students with mild-moderate disabilities. Includes developmentally appropriate instruction, teaching with collaborative and self-directed learning, goal setting, utilizing prior knowledge, and selecting appropriate teaching resources.

Information: Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. ESE 290A and ESE 290B together constitute ESE 290.

Offered: Fall.

ESE 290B Student Teaching II: Mild-Moderate Disabilities

4 cr. hrs. 4 periods (4 lec.)

Overview of the student teaching experience in a grades K-12 Educator Preparation Program (EPP) Internship classroom having students with mild-moderate disabilities. Includes interdisciplinary teaching models, gathering and analyzing student data, Multiple Intelligences Theory, professional development, and collaboration with stakeholders.

Information: Admission to the Post-Degree Teacher Certification Program and EPP Internship approval are required before enrolling in this course. ESE 290A and ESE 290B together constitute ESE 290.

Offered: Spring.

Educational Technology Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ETT 101 Introduction to Educational Technology

3 cr. hrs. 3 periods (3 lec.)

An introduction to educational technology exploring the current and emerging technologies available to teachers. Includes theoretical foundations of educational technology, technology enhanced instruction, digital technologies for the classroom, and an overview of productivity, school and classroom management software.

Offered: Fall, Spring.

ETT 103 Introduction to the Internet in Education

3 cr. hrs. 3 periods (3 lec.)

Basic use of the internet for education. Includes network and telecommunication systems, web-based applications for teaching and learning, and audio-visual technologies. Also includes an introduction to distance education and issues in implementing internet technologies in schools.

Offered: May not be offered this year, check class schedule.

Electrical Utilities Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

EUT 101 Introduction to Electrical Utilities

3 cr. hrs. 3 periods (3 lec.)

Overview of the electrical utility field. Includes electricity generation, generating station, generation, transmission, and distribution, power policies and procedures, radio procedures, electrical utility disciplines, human resources, and system protection.

Offered: May not be offered this year, check class schedule.

EUT 102 Electrical Distribution Math

3 cr. hrs. 3 periods (3 lec.)

Basic math operations related to electrical distribution. Includes the review of basic math, solving and converting, basic algebra, and Ohm's Law.

Offered: Spring.

EUT 103 Generation Steam Systems

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to steam systems, thermodynamics, and boiler operation. Includes steam as an energy generating source, steam system operation, and boilers. Also includes pressure and temperature control.

Offered: Spring.

EUT 104 Overhead and Underground Systems, Hardware, and Equipment

4 cr. hrs. 5 periods (3 lec., 2 lab)

Procedures for working in the overhead and underground distribution components. Includes pole hardware, overhead conductors, porcelain and polymer equipment, overhead transformers, underground equipment installation, electrical utility disciplines, and safety.

Offered: Fall.

EUT 106 Measuring Electricity

3 cr. hrs. 4 periods (2 lec., 2 lab)

Overview of the theories and devices used to measure electricity. Includes electric utility metering terminology, Blondel's theorem, kilowatt-hour meter operating principles, single-phase and network meters, wiring connections for mounting devices, voltmeter, voltage indicator, and ammeter usage, and Direct Current (DC), and Alternating Current (AC), circuits.

Offered: Spring.

Emergency Medical Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

EMT 089 Skills Reinforcement for EMT 100

2 cr. hrs. 4 periods (1 lec., 3 lab)

Overview, techniques, and skills for pre-hospital emergency response. Includes equipment operations, communication, documentation, packaging, and patient assessment.

Recommendation: Concurrent enrollment in EMT 100.

Information: Course supplements lecture time and laboratory experience for EMT 100.

Offered: Fall, Spring, Summer.

EMT 090 National Registry Skills Preparation

.5 cr. hrs. .5 periods (.5 lec.)

Introduction to the practical portion of the EMT-B National Registry Skills stations. Includes introduction to the six stations required for EMT-B certification. Also includes opportunity to serve as a patient in medical and trauma scenarios, and to practice hands on assessment with other students.

Recommendation: Designed for students enrolling in EMT 100 the following semester.

Information: Prepares students to serve as patients for National Registry testing.

Offered: Fall, Spring.

EMT 091 Ambulance Operations

2 cr. hrs. 4 periods (1 lec., 3 lab)

Practical experience and safe operation of emergency vehicles. Includes operating an ambulance on a closed course to become familiar with its handling and operations, and subsequent completion of an obstacle course similar to the Emergency Vehicle Operators Course (EVOC). Also includes proper gurney operation and key safety matters pertaining to the use of lights and sirens.

Recommendation: Concurrent enrollment in EMT 100 or 110.

Information: Students must possess a valid driver's license.

Offered: Fall, Spring, Summer.

EMT 092 Cardiac Monitor (EKG) for the EMT

1.5 cr. hrs. 1.5 periods (1.5 lec.)

Introduction to the cardiac monitor or electrocardiograph (EKG). Includes an in-depth look at the cardiac monitor, the many different cardiac rhythms students may encounter as an EMT, and discussion of various treatments for abnormal rhythms.

Corequisite(s): Concurrent enrollment in EMT 100 or 110.

Information: Not a substitute for Advanced Cardiac Life Support (ACLS), but appropriate for entry level EMT students. Ideal exploration course for those considering a career beyond EMT, such as Paramedic or Nursing.

Offered: Spring, Summer.

EMT 100 Emergency Medical Technology

12 cr. hrs. 14 periods (11 lec., 3 lab)

Techniques of pre-hospital emergency medical care for the emergency medical technician. Includes history of emergency medical care delivery systems, roles and responsibilities of EMS providers, ethical and legal issues, and patient assessment. Also includes symptoms of illnesses, injuries, medical emergencies, appropriate medical techniques, triage, and ambulance operations.

Information: Students must be 18 years of age when class begins. Students must have CPR certification at the Healthcare Provider or Professional Rescuer Level and receive an appropriate score on the College reading assessment. Students must show proof of personal medical insurance and provide immunization records for MMR, TD, TB skin Test, and Varicella; flu vaccine is encouraged. Students must show proof of Arizona Department of Public Safety (AZ DPS) Fingerprint Clearance Card or proof of pending AZ DPS application approval (applications provided by the EMT Service Center. Students must meet College Admissions' requirements and create an Arizona Department of Health Services online account. Students must submit to drug screening (form provided by the EMT Service Center), and must meet with EMT staff prior to registration.

Offered: Fall, Spring, Summer.

EMT 106 Overview of Emergency Medical Services

3 cr. hrs. 3 periods (3 lec.)

Overview of Emergency Medical Services (EMS). Includes health care delivery systems, medical terminology, ethics and professionalism, patient rights and responsibilities; communication; basic patient assessment; workplace and personal safety.

Offered: Fall, Spring.

EMT 109 Human Anatomy and Physiology for EMT

3 cr. hrs. 3 periods (3 lec.)

Human anatomy and physiology for Emergency Medical Technicians (EMT). Includes basic physiology of the body systems and medical terminology addressed in the NREMT/AZDHS. Also includes patient assessment, differential diagnosis, and treatment pathways.

Recommendation: REA 112 or equivalent score on Reading assessment.

Information: Intended for students interested in EMT 100.

Offered: May not be offered this year, check class schedule.

EMT 110 Emergency Medical Responder

3 cr. hrs. 3 periods (3 lec.)

Techniques in pre-hospital emergency care appropriate to the Emergency Medical Responder (EMR) Scope of Practice. Includes identifying signs and symptoms associated with illness and traumatic injuries. Also includes intervention used in managing patient and transfer of patient to higher level medical authority.

Information: This course will prepare those wishing to enroll in EMT 100. We will cover the DOT curriculum for EMR/EMT as well as the National Registry Practical portion of EMR. Course is designed to prepare eligible students for NREMT EMR examination.

Offered: May not be offered this year, check class schedule.

EMT 111 Heartsaver First Aid Provider

.5 cr. hrs. .5 periods (.5 lec.)

Beginning first aid concepts and techniques for the lay person. Includes principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with either medical or traumatic injuries and complaints. Includes first aid general principles, medical, and trauma. Also includes topic options: adult Cardiopulmonary Resuscitation (CPR), Adult Automatic External Defibrillator (AED), and environmental emergencies.

Information: The Heartsaver First Aid and CPR and AED Provider Manuals are required.

Offered: Fall, Spring, Summer.

EMT 112 Heartsaver Cardiopulmonary Resuscitation

.5 cr. hrs. .5 periods (.5 lec.)

Concepts and techniques to assess and treat patients with airway obstruction, respiratory, and cardiac arrest for the lay person. Includes the integration of principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with foreign body airway obstruction, respiratory and/or cardiac arrest. Includes choice of two topics: Adult Cardiopulmonary Resuscitation (CPR) and Pediatric CPR.

Information: Purchase of the Heartsaver CPR provider manual prior to class is required.

Offered: May not be offered this year, check class schedule.

EMT 113 Healthcare Provider Certification: BLS, HIPAA, OSHA and BBP

2 cr. hrs. 4 periods (1 lec., 3 lab)

Overview of recommended cardiopulmonary resuscitation guidelines and national best practices for healthcare providers. Includes federal governances of personal and workplace safety within emergency services and medicolegal considerations. Also includes Occupational Safety and Health Administration regulations and recommendations. Also includes theory and practice for treatment of infants, children and adults in cardiac arrest or with airway obstructions.

Information: Upon successful completion of course, students may obtain American Heart Association Basic Life Support for healthcare provider CPR, American Heart Association Blood Borne Pathogens certification, American Heart Association First Aid certification, and Health Insurance Portability and Accountability Act awareness certification.

Offered: May not be offered this year, check class schedule.

EMT 140 Pre-Hospital Trauma Life Support

1.5 cr. hrs. 2 periods (1 lec., 1 lab)

Concepts and techniques for evaluating assessment findings to formulate a field impression and implementation of a field treatment plan for a trauma patient. Includes systemic approach to patient assessment and management, airway and ventilation management, shock, soft tissue and burn injuries, isolated and multi-systems trauma, and various types of trauma patients.

Offered: Fall, Spring.

EMT 141 Pre-Hospital Trauma Life Support Refresher

1.5 cr. hrs. 2 periods (1 lec., 1 lab)

Concepts and scenario-based techniques for evaluating assessment findings to formulate a field impression and implementation of a field treatment plan for a trauma patient. Includes a systemic approach to patient assessment and management, airway and ventilation management, shock, soft tissue and burn injuries, isolated and multi-systems trauma, and various types of trauma patients.

Information: Includes teaching and evaluation stations as a review and update for those students who have taken EMT 140.

Offered: May not be offered this year, check class schedule.

EMT 155 Advanced Medical Life Support (AMLS) Provider

1.5 cr. hrs. 1.5 periods (1.5 lec.)

Overview, concepts and techniques to study medical emergencies related to adult patients. Includes a pragmatic approach and systematic format regarding patient assessment and management. Includes interactive scenario-based lectures with hands-on physical assessment of patients. Includes a global and initial assessment taking into account the patient's environmental and scene issues that allows the participant to formulate a general impression, determine the patient's stability, and explore the possibilities of differential diagnoses. Also includes using a systematic approach to obtain an initial assessment, vital signs, present illness, past medical, focused physical exam; the participant will be driven by the differential diagnoses.

Information: AMLS is an advanced course that assumes a previous working knowledge of medical emergencies, there are necessary prerequisites: EMT-B, EMT-I, EMT-P, RN, MD, DO, and other advanced level healthcare providers with at least one year of clinical experience. Participant must read the AMLS textbook before class and come to class prepared and complete the pre-test.

Information: EMT-B will have a separate pre-test and post-test written evaluation for EMT-Basic providers.

Offered: Fall, Spring.

EMT 158 Transition Training for EMT

1.5 cr. hrs. 2.5 periods (1 lec., 1.5 lab)

Review of current techniques in pre-hospital emergency care for the basic Emergency Medical Technician (EMT). Includes signs and symptoms of illness, injuries, medical emergencies, appropriate medical techniques, and ambulance operations.

Information: EMT-B State of Arizona current certification is required before enrolling in this course.

Information: May be taken six times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

EMT 159 Cardiopulmonary Resuscitation: Healthcare Provider

.5 cr. hrs. .75 periods (.25 lec., .5 lab)

Introduction to the techniques required to provide Cardiopulmonary Resuscitation (CPR) at the healthcare provider level. Includes introduction to body systems and disease states, which lead to cardiac and respiratory arrest. Also includes the assessment and intervention for the airway, respiration and central circulation.

Information: Course meets American Heart Association guidelines for the healthcare provider level.

Information: May be taken six times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Summer.

EMT 170 Advanced Life Support Operations

1 cr. hrs. 1 periods (1 lec.)

Introduction to skills necessary to assess, extricate, and care for victims of crash incidents. Includes exposure to scene management skills to include size-up, disentanglement, victim stabilization for single and multi-victim situations, hazardous materials incidents, integration of local emergency medical services (EMS) for patient assessment and management, and standard operating procedures to selected victim scenarios.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 205 ALS Pharmacology and Medication Administration

3 cr. hrs. 3.25 periods (2.75 lec., .5 lab)

Elements of pharmacological agents and their administration. Includes basic pharmacological background and actions of drugs, regulations, human body systems, and pharmacokinetics. Also includes medications for patient in an emergency setting, and pharmacological mathematics.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 214 ALS Advanced Special Considerations

2.5 cr. hrs. 3 periods (2 lec., 1 lab)

Advanced life support skills approach to emergency care of the emotionally disturbed. Includes emotional aspects, approach to the patient, and psychiatric emergencies. Also includes techniques of management and demonstration of skills within a simulated hospital environment.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 218 Paramedic National Registry Preparation

3.5 cr. hrs. 6 periods (1 lec., 5 lab)

Review and preparation in standards of paramedic emergency care at the state and national levels. Includes developing testing skills and questions related to assessment, analysis, intervention or evaluation. Also includes each component of the Emergency Medical Technician Paramedic National Standard Curriculum.

Information: Acceptance into a Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 219 ALS Foundations

1.5 cr. hrs. 1.75 periods (1.25 lec., .5 lab)

Introduction to the Advanced Life Support (ALS) career field. Includes roles and responsibilities, Emergency Medical Services (EMS) components, well being, illness and injury prevention, ethics, medical and legal considerations.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 221 ALS Airway and Ventilation

1.5 cr. hrs. 2 periods (1 lec., 1 lab)

Techniques for establishing and/or maintaining a patient's airway. Also includes anatomy and physiology, age specific techniques and procedures, introduction to respiratory pharmacology and respiratory drug profiling.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 222 ALS Patient Assessment and Assessment Based Management

1.5 cr. hrs. 1.75 periods (1.25 lec., .5 lab)

Skills to take a proper history and perform an advanced physical assessment on an emergency patient, and communicate the findings to the patient and others. Includes the physical exam, integrative and on-going exams, communications and documentation. Also includes the implementation of a management plan for patients with common complaints and injuries, dispatch scenarios, scene size-up and forming impressions.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 223 ALS Trauma Emergencies and Systems

2 cr. hrs. 2.25 periods (1.75 lec., .5 lab)

Techniques to formulate a field impression and implement the treatment plan for the trauma or shock patient. Includes shock, burn injuries, and isolated and multi-systems trauma.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 224 ALS Medical Emergencies

4 cr. hrs. 5 periods (3 lec., 2 lab)

Introduction to the utilization of assessment findings to formulate a field impression and implement the treatment plan for the medical patient. Includes respiratory, cardiovascular, neurological, endocrine, allergic, toxic, abdominal and urologic, environmental, behavioral and gynecological emergencies.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 225 ALS Special Medical Considerations

2 cr. hrs. 2.25 periods (1.75 lec., .5 lab)

Introduction to special medical consideration concepts. Includes utilizing assessment findings to formulate a field impression and implement the treatment plan for obstetric, neonatal, pediatric, geriatric, and chronic-care patients.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 227LC ALS Practicum: Clinical Lab

3 cr. hrs. 9 periods (9 lab)

Techniques for performing skills and completing documentation in accordance with established guidelines, orders, and protocols for critical care, emergency department, labor and delivery, pediatrics, and other specialty units. Includes applying skills associated to the scope of practice for the Advanced Life Support (ALS) Professional.

Information: Acceptance into an ALS Training Program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 228LC ALS Practicum: Vehicular Lab

3 cr. hrs. 9 periods (9 lab)

ALS vehicular lab concepts. Includes techniques for performing and documenting in accordance with established guidelines, orders, and protocols, and acting within the scope of practice of the ALS Professional and under medical supervision during a vehicular lab.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 230 Basic ECG Interpretation

1.5 cr. hrs. 1.75 periods (1.25 lec., .5 lab)

Introduction to all levels of emergency care providers with basic electrocardiographic (ECG) rhythm analysis. Includes interpretation and related care in a clinical and pre-hospital setting.

Information: Required content for the identification and treatment of cardiac emergencies.

Information: This course is designed for paramedics and paramedic students.

Offered: Contact department at 206-6350.

EMT 233 Basic Cardiac Life Support Instructor

.75 cr. hrs. .75 periods (.75 lec.)

Concepts, techniques, and skills in how to teach the Basic Cardiac Life Support of the Heartsaver First Aid Provider course. Includes basic principles, course management, personnel issues, time and resource management, and remediation.

Information: Provides the challenge portion of the American Heart Association (AHA) online course in Advanced Cardiac Life Support (ACLS).

Information: AHA certificate is required at the beginning of class.

Offered: May not be offered this year, check class schedule.

EMT 238 Advanced Cardiac Life Support Instructor

1 cr. hrs. 1 periods (1 lec.)

Overview, concepts, and techniques in how to teach the Advanced Cardiac Life Support in the Provider course. Includes basic principles, course management, personnel issues, time and resource management, and remediation.

Offered: May not be offered this year, check class schedule.

EMT 239 Pediatric Advanced Cardiac Life Support Instructor

1 cr. hrs. 1 periods (1 lec.)

Overview, concepts, and techniques in how to teach Pediatric Advanced Cardiac Life Support (PALS) course to the provider. Includes pediatric basic principles, course management, personnel issues, time and resource management, and remediation.

Offered: May not be offered this year, check class schedule.

EMT 242 ALS Advanced Foundations

2 cr. hrs. 2.5 periods (1.5 lec., 1 lab)

Foundations of skills and principles in preparing to be a paramedic. Includes medical terminology, the human body structure, and pathophysiology.

Prerequisite(s): EMT 219.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 244 ALS Advanced Medical Emergencies

2.5 cr. hrs. 3 periods (2 lec., 1 lab)

Continuation of EMT 224. Advanced life support techniques using pre-hospital approaches to the recognition and intervention of medical emergencies related to toxicology, infectious disease, and hematology. Includes poisoning, drug overdose, and transmission of infectious diseases.

Prerequisite(s): EMT 224.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 247LC ALS Advanced Practicum: Clinical Lab

3 cr. hrs. 9 periods (9 lab)

Continuation of EMT 227LC. In-hospital clinical procedures for the ALS professional. Includes placement in the clinical (hospital) setting for supervised skills application with real patients.

Prerequisite(s): EMT 227LC.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 248LC ALS Advanced Practicum: Vehicular Lab

3 cr. hrs. 9 periods (9 lab)

Continuation of EMT 228LC. Pre-hospital emergency medical procedures for the ALS professional. Includes skills appropriate to the ALS scope of practice in the pre-hospital setting according to established protocols.

Prerequisite(s): EMT 228LC.

Information: Acceptance into the Paramedic program is required before enrolling in this course.

Offered: Contact department at 206-6350.

EMT 250 Advanced Cardiac Care

1.5 cr. hrs. 2 periods (1 lec., 1 lab)

Introduction to the integration of pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with cardiovascular disease/injury based on 3-lead and 12-lead cardiac monitoring and interpretation. Also includes information on cardiovascular anatomy and physiology, cardiovascular pathologies and management, and adjunctive diagnostics.

Offered: Contact department at 206-6350.

EMT 251 Advanced Cardiac Care Refresher

.75 cr. hrs. 1 periods (.5 lec., .5 lab)

Review of the integration of pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with cardiovascular disease/injury based on 3-lead and 12-lead cardiac monitoring and interpretation. Also includes information on cardiovascular anatomy and physiology, cardiovascular pathologies and management, and adjunctive diagnostics.

Offered: Contact department at 206-6350.

EMT 252 Pediatric Advanced Life Support

1.5 cr. hrs. 2 periods (1 lec., 1 lab)

Techniques for emergency services for children. Integrates physiological, psychological, and social changes throughout human growth and development. Includes information on pediatric assessment, airway management and respiratory emergencies, cardiovascular emergencies. Also includes information on neonatal emergencies, children with special healthcare needs, and Sudden Infant Death Syndrome (SIDS).

Offered: Contact department at 206-6350.

EMT 253 Pediatric Advanced Life Support Refresher

.75 cr. hrs. 1 periods (.5 lec., .5 lab)

Overview of techniques for emergency services for children. Integrated physiological, psychological, and social changes throughout human growth and development. Includes information on pediatric assessment, airway management and respiratory emergencies, cardiovascular emergencies. Also includes information on neonatal emergencies, children with special healthcare needs, and Sudden Infant Death Syndrome (SIDS).

Offered: May not be offered this year, check class schedule.

EMT 254 Advanced ECG Interpretation

3 cr. hrs. 3.5 periods (2.5 lec., 1 lab)

Integration of pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with cardiovascular disease/injury based on 3-lead and 12-lead cardiac monitoring and interpretation. Also includes information on cardiovascular anatomy and physiology, electrocardiographic monitoring, and adjunctive diagnostics.

Prerequisite(s): EMT 230.

Offered: Contact department at 206-6350.

EMT 255 Instructional Strategies

2 cr. hrs. 2.5 periods (1.5 lec., 1 lab)

Introduction for organization and preparation of curriculum materials for presentation. Includes instructor roles and responsibilities, legal issues, the adult learner, creating an effective learning environment, and instructional strategies and methods.

Offered: May not be offered this year, check class schedule.

EMT 258 Pediatric Education for Pre-Hospital Professionals

1.5 cr. hrs. 2 periods (1 lec., 1 lab)

Foundations of skills and principles in dealing with pediatric patients in a pre-hospital setting. Includes information on the integration of the physiological, psychological, and social changes throughout human growth and development with assessment and communication strategies for patients of all ages.

Offered: Fall, Spring.

EMT 259 Pediatric Education for Pre-Hospital Professionals Refresher

.75 cr. hrs. 1 periods (.5 lec., .5 lab)

Overview of the foundations of skills and principles in dealing with pediatric patients in a pre-hospital setting. Includes information on the integration of the physiological, psychological, and social changes throughout human growth and development with assessment and communication strategies for patients of all ages.

Offered: May not be offered this year, check class schedule.

EMT 263 Tox-Medic

1.5 cr. hrs. 1.5 periods (1.5 lec.)

Provides paramedics with the training required which authorizes them to perform a medical treatment or administer a drug when responding to a hazardous materials incident.

Offered: Contact department at 206-6350.

EMT 295 ALS Independent Research

3 cr. hrs. 3 periods (3 lec.)

Independent research in advanced pre-hospital care. Includes developing and writing an independent, applied research project, utilizing American Psychological Association (APA) style and format. Also includes exploration of current issues in Emergency Medical Services (EMS) or related subject matter through active research.

Information: Research and writing will be done independently with assistance from the course instructor. Student will select a research topic with approval of course instructor.

Offered: Contact department at 206-6350.

Engineering

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ENG 102IN Problem-Solving and Engineering Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Design, effective team participation, and career preparation in engineering. Includes the different engineering fields and careers, basic skills associated with engineering problem solving and communication, the design process, participation in hands-on design projects, and ethics and professional responsibility.

Prerequisite(s): MAT 189.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

ENG 110IN Solid State Chemistry

4 cr. hrs. 6 periods (3 lec., 3 lab)

Fundamental principles of the chemistry of condensed states of matter including metals, polymers, molecular solids, and ceramics. Includes quantization, atomic structure, bonding, band and crystalline structure, conductivity, thermodynamics, and phase diagrams. Also includes electrochemistry and electrochemical devices, glass, optical properties and devices, and semiconductor devices.

Prerequisite(s): CHM 151 and MAT 220 or concurrent enrollment.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Spring.

ENG 120IN Civil Engineering Graphics and Design

3 cr. hrs. 7 periods (1 lec., 6 lab)

Introduction to civil engineering graphics and design using sketching and Computer-Aided design (CAD) Civil 3D software. Includes engineering basic applications, basic math and geometry, basic math and algorithms, corridor development, site grading and earthwork concepts, piping and draining concepts, surveying concepts and procedures, and visualization and construction documents.

Prerequisite(s): MAT 189.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

ENG 122IN Engineering Graphics and Design with Solid Modeling

3 cr. hrs. 7 periods (1 lec., 6 lab)

Introduction to engineering graphics and the concepts of engineering design. Includes sketching, dimensioning practices and tolerances, Computer-Aided design (CAD), basic part modeling, and three-dimensional (3D) assembly modeling.

Prerequisite(s): MAT 189.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

ENG 130IN Elementary Surveying

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the subject of surveying as it pertains to the field of civil engineering. Includes measurement of distances, leveling, profiling and grade calculations, measurement of angles, remote elevations, and traverse closure. Also includes topographic surveys, public land surveying, and land ownership.

Prerequisite(s): MAT 189.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Spring.

ENG 175IN Computer Programming for Engineering Applications I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Programming in C with emphasis on numerical applications in engineering. Includes structure of C programs, data types, operations, and basics of C, selection, repetition, arrays, functions, and data files.

Prerequisite(s): MAT 189.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

ENG 210 Engineering Mechanics: Statics

3 cr. hrs. 3 periods (3 lec.)

Engineering analysis of static mechanical systems. Includes vector algebra, equilibrium of particles and rigid bodies, forces, moments, couples, equivalent force systems, analysis of simple structures (trusses, beams, frames, cables, machines), friction, first and second moments of area (moment of inertia).

Prerequisite(s): MAT 231, and PHY 210/210LB or 210IN.

Offered: Fall, Spring.

ENG 218 Fluid Mechanics

4 cr. hrs. 4 periods (4 lec.)

Introduction and fundamental concepts of fluid dynamics and fluid statics. Includes basic equations for a control volume, fluids in motion, inviscid flow, dimensional analysis, flow in pipes and ducts, and boundary layers.

Prerequisite(s): ENG 210 and MAT 241.

Offered: Fall.

ENG 220 Engineering Mechanics: Dynamics

4 cr. hrs. 4 periods (4 lec.)

Study of the motion of bodies under the action of forces. Includes introduction to dynamics, kinematics of particles and rigid body, kinetics of particles and rigid body, and vibration.

Prerequisite(s): ENG 210 and MAT 241.

Offered: Fall, Spring.

ENG 230 Mechanics of Materials

4 cr. hrs. 4 periods (4 lec.)

Introduction to the analysis and design of the mechanical properties of materials. Includes the concept of stress and strain, axially loaded members, torsion, stresses and strains in beams, analysis of stress and strain, deflections of beams, and columns.

Prerequisite(s): ENG 210.

Offered: Fall, Spring.

ENG 232 Thermodynamics

4 cr. hrs. 4 periods (4 lec.)

Basic laws and examples of engineering applications of macroscopic thermodynamics. Includes an introduction to concepts and definitions, energy and the first law of thermodynamics, evaluating properties, control volume energy analysis, the second law of thermodynamics, using entropy, vapor power systems, gas power systems, and refrigeration and heat pump systems.

Prerequisite(s): MAT 241 and PHY 216.

Offered: Fall, Spring.

ENG 260 Electrical Engineering

3 cr. hrs. 3 periods (3 lec.)

Introductory survey of the electrical engineering discipline with emphasis on electrical power applications. Includes resistive circuits, inductance and capacitance, transients, steady-state sinusoidal analysis, and logic circuits. Also includes operational amplifiers, microcomputers, and diode electronics.

Prerequisite(s): MAT 231, and PHY 216/216LB or 216IN.

Offered: Fall, Spring.

ENG 274IN Digital Logic

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the theory and design of digital logic circuits. Includes combinational logic design, sequential logic design, combinational and sequential component design, register-transfer level design, optimizations and tradeoffs, and physical implementation.

Prerequisite(s): MAT 231, and PHY 216/216LB or 216IN.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

ENG 276IN Computer Programming for Engineering Applications II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced programming in C for engineering applications. Includes review of C programming, memory concepts, algorithms and analysis, and an introduction to C++

Prerequisite(s): ENG 175IN.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall.

ENG 282IN Basic Electric Circuits

5 cr. hrs. 7 periods (4 lec., 3 lab)

Introduction to the fundamentals of alternating current (AC) and direct current (DC) circuits. Includes circuit variables, circuit elements, simple resistive circuits, techniques of circuit analysis, the operational amplifier; inductance, capacitance, and mutual inductance; response of first-order resistor-inductor (RL) and resistor-capacitor (RC) circuits, natural and step responses of RLC circuits, and sinusoidal steady-state analysis.

Prerequisite(s): MAT 262, and PHY 216/216LB or 216IN.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

English as a Second Language

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ESL 050 English for Beginners

6 cr. hrs. 6 periods (6 lec.)

Introduction to the basics of English as a second language through an integrated skills approach: reading, writing, listening, and speaking. Includes letters of the alphabet, basic pronunciation rules, day-to-day communication, foundational grammar, writing conventions, and study skills.

Recommendation: For students with no previous knowledge of English.

Offered: May not be offered this year, check class schedule.

ESL 060CM Oral Communication for Non-Native Speakers of English I

4 cr. hrs. 4 periods (4 lec.)

High beginning-level communication for situations and tasks relevant to daily and academic life. Includes conversation about social and academic topics with communicative appropriateness and clarity. Also includes listening and speaking strategies and practice, basic vocabulary, study strategies, technology, and exploration of college resources.

Prerequisite(s): Required score on ESL assessment test.

Recommendation: Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisite may be waived with permission of instructor.

Offered: May not be offered this year, check class schedule.

ESL 060MT Beginning Writing Mechanics and Technology

1 cr. hrs. 1 periods (1 lec.)

Instruction and practice using beginning techniques for writing in English. Includes standard format and handwriting, writing mechanics, and basic technology skills for language learning.

Prerequisite(s): Required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL 060WG.

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 060PR Pronunciation I

2 cr. hrs. 2 periods (2 lec.)

Pronunciation and spelling for non-native English speakers at the basic level. Includes basic sound-symbol patterns and production of corresponding sounds, and the stress, rhythm and intonation to develop fluency in communication.

Prerequisite(s): Required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL Oral Communication course (CM).

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 060RV Reading and Vocabulary for Non-Native Speakers of English I

4 cr. hrs. 4 periods (4 lec.)

High beginning-level reading and vocabulary skills for non-native speakers of English.

Prerequisite(s): Required score on ESL assessment test.

Recommendation: Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisite may be waived with permission of instructor.

Offered: May not be offered this year, check class schedule.

ESL 060WG Writing and Grammar for Non-Native Speakers of English I

4 cr. hrs. 4 periods (4 lec.)

High beginning-level writing and grammar skills for non-native speakers of English. Includes content-based units: verb tense and mood; sentence structure and parts of speech; sentence and paragraph writing; study strategies; and technology.

Prerequisite(s): Required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL Oral Communication course (CM) and an ESL Reading and Vocabulary course (RV) according to previous course completion or ESL assessment test score.

Information: Prerequisite may be waived with permission of instructor.

Offered: May not be offered this year, check class schedule.

ESL 070CM Oral Communication for Non-Native Speakers of English II

4 cr. hrs. 4 periods (4 lec.)

Intermediate-level communication skills for increased fluency and comprehension. Includes conversation about social and academic topics with increased proficiency and clarity; listening and speaking strategies and practice; vocabulary building skills; study strategies; technology; and increased awareness of college resources.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 060CM, 060RV, and 060WG with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 070CU Survey of American Culture

1 cr. hrs. 1 periods (1 lec.)

Intermediate-level course on American culture for ESL students. Includes readings on various American culture topics, and vocabulary development.

Prerequisite(s): ESL 060RV with a C or better, or required score on ESL assessment test.

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details. May be taken two times for a maximum of two credit hours.

Offered: May not be offered this year, check class schedule.

ESL 070GR Grammar for Writing II

3 cr. hrs. 3 periods (3 lec.)

Intermediate level grammar with focus on English in everyday life. Includes verb tense and mood, sentence structure, and parts of speech.

Prerequisite(s): ESL 060 with a C or better, or required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL 070 is highly recommended.

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 070MT Intermediate Writing Mechanics and Technology

1 cr. hrs. 1 periods (1 lec.)

Instruction and practice using intermediate techniques for writing in English. Includes standard formats, writing mechanics, and intermediate technology skills.

Prerequisite(s): ESL 060WG with a C or better, or required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL 070WG.

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 070PR Pronunciation II

2 cr. hrs. 2 periods (2 lec.)

Pronunciation for non-native English speakers at the intermediate level. Includes word stress, sentence stress and rhythm, and intonation patterns.

Prerequisite(s): ESL 060CM with a C or better, or required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL Oral Communication course (CM).

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 070RV Reading and Vocabulary for Non-Native Speakers of English II

4 cr. hrs. 4 periods (4 lec.)

Low intermediate-level reading and vocabulary skills for non-native speakers of English.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 060RV, 060CM, and 060WG with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 070WG Writing and Grammar for Non-Native Speakers of English II

4 cr. hrs. 4 periods (4 lec.)

Intermediate-level academic writing and grammar skills. Includes content-based units: verb tense and mood; sentence structure; parts of speech; paragraph writing; study strategies; and technology.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 060WG, 060CM, and 06RV with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Reading and Vocabulary course (RV) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 079EI Institute for American English and Culture I

1-15 cr. hrs. 1-15 periods (1-15 lec.)

Intermediate level English immersion program for non-English speaking international students. Includes English skills development in intermediate oral communication, writing, reading, and vocabulary; and exploration of cross-cultural issues.

Information: Restricted registration. See an international advisor for further information. Extent of emphasis placed on specific activities and objectives in Program I will vary depending on audience and number of credits.

Offered: May not be offered this year, check class schedule.

ESL 080CM Oral Communication for Non-Native Speakers of English III

4 cr. hrs. 4 periods (4 lec.)

High intermediate-level communication skills for increased fluency and comprehension. Includes conversation about academic and social topics with increased proficiency and clarity, listening and speaking strategies, vocabulary, non-verbal communication, critical thinking skills, study strategies, and technology use.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 070CM and (ESL 060RV or ESL 070RV) and (ESL 060WG or ESL 070WG) with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: Fall, Spring.

ESL 080MT Advanced Writing Mechanics and Technology

1 cr. hrs. 1 periods (1 lec.)

Instruction and practice using advanced techniques for writing in English. Includes standard formats, writing mechanics, and advanced technology skills.

Prerequisite(s): ESL 070WG with a C or better, or required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL 080WG or 085WG.

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 080PR Pronunciation III

2 cr. hrs. 2 periods (2 lec.)

Pronunciation for non-native English speakers at the advanced level. Includes word stress and vowel reduction, sentence stress and rhythm, and intonation and phrasing.

Prerequisite(s): ESL 070CM with a C or better, or required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL Oral Communication course (CM).

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: Fall.

ESL 080RV Reading and Vocabulary for Non-Native Speakers of English III

4 cr. hrs. 4 periods (4 lec.)

High intermediate-level reading and vocabulary skills for non-native speakers of English.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 070RV and ESL 060CM and ESL 060WG with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: Fall, Spring.

ESL 080WG Writing and Grammar for Non-Native Speakers of English III

4 cr. hrs. 4 periods (4 lec.)

High intermediate-level academic writing and grammar skills. Includes content-based units: verb tense and mood; sentence structure; parts of speech; paragraph and essay writing; study strategies; and technology.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 070WG and (ESL 060RV or ESL 070RV) and (ESL 060CM or ESL 070CM) with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Reading and Vocabulary course (RV) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: Fall, Spring.

ESL 085CM Oral Communication for Non-Native Speakers of English IV

4 cr. hrs. 4 periods (4 lec.)

Advanced-level academic communication skills for increased fluency and comprehension. Includes conversation and formal discussion on a variety of academic topics, academic listening and speaking strategies and practice, presentation skills, academic vocabulary development, study strategies and use of technology.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 080CM and ESL 070RV and ESL 070WG with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details. This course may be taken at the 085 or 088 level.

Offered: Fall, Spring.

ESL 085RV Reading and Vocabulary for Non-Native Speakers of English IV

4 cr. hrs. 4 periods (4 lec.)

Advanced-level reading and vocabulary skills for non-native speakers of English.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 080RV and ESL 070CM and ESL 070WG with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: Fall, Spring.

ESL 085WG Writing and Grammar for Non-Native Speakers of English IV

4 cr. hrs. 4 periods (4 lec.)

Advanced-level academic writing and grammar for non-native speakers of English. Includes content based units: verb tense and mood; sentence structure; parts of speech; essay writing; research; study strategies; and use of technology.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 080WG and ESL 070RV and ESL 070CM with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Reading and Vocabulary course (RV) and ESL Oral Communication course (CM) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: Fall, Spring.

ESL 088GR Grammar for Writing V

3 cr. hrs. 3 periods (3 lec.)

Advanced level grammar with a focus on written English in academic contexts. Includes verb tense and mood, sentence structure, structural analysis and other structures.

Prerequisite(s): ESL 085 with a C or better, or required score on ESL assessment test.

Recommendation: Concurrent enrollment in ESL 088 is highly recommended.

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: Spring.

ESL 088RV Reading and Vocabulary for Non-Native Speakers of English V

4 cr. hrs. 4 periods (4 lec.)

High advanced-level reading and vocabulary skills for non-native speakers of English.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 085RV and ESL 080CM and ESL 080WG with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Writing and Grammar course (WG) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: Fall, Spring.

ESL 088TO Comprehensive TOEFL Preparation

3 cr. hrs. 3 periods (3 lec.)

Comprehensive Test of English as a Foreign Language (TOEFL) test preparation for ESL/EFL students. Includes introduction to the TOEFL and the test-taking strategies, skill review with intensive practice for all four test components: grammar, listening and speaking, Test of Written English (TWE), reading and vocabulary, and the TOEFL guidelines and procedures.

Prerequisite(s): ESL 085 with a C or better, or required score on the ESL assessment test.

Information: Prerequisite(s) may be waived with consent of instructor. See an ESL instructor for details.

Offered: May not be offered this year, check class schedule.

ESL 088WG Writing and Grammar for Non-Native Speakers of English V

4 cr. hrs. 4 periods (4 lec.)

High advanced-level academic writing and grammar for non-native speakers of English. Includes content based units: verb tense and mood; sentence structure; parts of speech; essay writing; research; study strategies; and technology.

Prerequisite(s): Required score on ESL assessment test OR completion of ESL 085WG and ESL 080RV and ESL 080CM with a grade of C or better.

Recommendation: Concurrent enrollment in an ESL Oral Communication course (CM) and an ESL Reading and Vocabulary course (RV) according to previous course completion or ESL assessment test score.

Information: Prerequisites may be waived with consent of instructor. See an ESL instructor for details.

Offered: Fall, Spring.

ESL 089EI Institute for American English and Culture II

1-15 cr. hrs. 1-15 periods (1-15 lec.)

Advanced level English immersion program for non-English speaking international students. Includes English skills development in advanced oral communication, writing, reading, and vocabulary; and exploration of cross-cultural issues.

Information: Restricted registration. See an international advisor for further information. Extent of emphasis placed on specific activities and objectives in Program II will vary depending on audience and number of credits.

Offered: May not be offered this year, check class schedule.

Environmental Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ENV 105 Humanity and the Environment

3 cr. hrs. 3 periods (3 lec.)

Technical, sociocultural, and political information on environmental science and technology for non-ENV majors. Includes ecosystems, population impacts, hydrological systems, air pollution, and environmental toxins. Also includes current topics such as the green house effect, acid rain, drinking water contamination, toxic waste spills, governmental regulation and enforcement, and future environmental trends.

Corequisite(s): ENV 105LB

Information: Same as ANT 105.

Offered: May not be offered this year, check class schedule.

ENV 105LB Humanity and the Environment Discovery Laboratory

1 cr. hrs. 3 periods (3 lab)

Laboratory exercise and field trip experiences as applied to the relationship between humanity and the environment. Includes examining ecology and biodiversity, healthy carrying capacity models, and waste by-products and their sources. Also includes designing pollution prevention and sustainable campus/town models, developing increased environmental ethics in our society, and anthropological relationships to the environment.

Corequisite(s): ENV 105

Information: This laboratory course satisfies the fourth credit hour of the Biological and Physical Science general education transfer credit if taken along with ENV 105.

Information: Same as ANT 105LB.

Offered: May not be offered this year, check class schedule.

Experiential Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

EED 110 Prior Learning Assessment

1-6 cr. hrs. 1-6 periods (1-6 lec.)

Explore credit options through the development of an individual's portfolio. Includes how to collect and present materials which identify, describe, and validate professional training and experiential learning which can be evaluated for college-level credit equivalency. Students in this course must be willing to spend considerable time in the preparation of the portfolio which can be submitted to a portfolio evaluator.

Information: A maximum of nine credits may be earned for the EMT-Basic program; students must register for two credits.

Information: A maximum of 36 credits may be earned for the Fire Science, Corrections, Juvenile Corrections, and Intermediate EMT programs; students must register for three credits.

Information: A maximum of 50 credits may be earned for the EMT Paramedic and Law Enforcement programs; students must register for six credits.

Information: A maximum of 9 credits may be earned by students who have earned credits previously in this course; students must register for one credit.

Offered: May not be offered this year, check class schedule.

Fashion Design and Clothing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

FDC 110 Clothing Construction I

3 cr. hrs. 5 periods (2 lec., 3 lab)

An introduction to basic clothing construction techniques designed for inexperienced sewers. Includes terminology, tools and equipment, garment pattern components, fabric components, interfacing, and construction sample and pressing techniques.

Offered: Fall, Spring.

FDC 111 Clothing Construction II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of FDC 110. Intermediate principles of clothing construction. Includes planning the garment, preparation of garment pieces, assembly, unit production, and evaluation.

Prerequisite(s): FDC 110 with a B or better.

Information: Prerequisite may be waived with consent of instructor.

Offered: Fall, Spring.

FDC 112 Pattern Fitting

3 cr. hrs. 5 periods (2 lec., 3 lab)

Methods of altering commercial patterns and principles of fitting garments. Includes body types, fitting commercial patterns, constructing muslin garments, fitting goals, and demonstration of fitting principles.

Prerequisite(s): FDC 110 with a grade of B or better.

Information: Prerequisite may be waived with consent of instructor.

Offered: Fall, Spring.

FDC 121 Flat Pattern Making

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the flat pattern method of pattern making for apparel production. Includes principles of pattern manipulation, practical applications, and evaluating the applications to a selected design project.

Recommendation: Completion of FDC 111 before enrolling in this course.

Offered: Spring.

FDC 122 History of Clothing

3 cr. hrs. 3 periods (3 lec.)

Introduction to clothing and personal decoration as a reflection of the wearer's culture, time and place. Includes definition of essential characteristics in the western world, evolution of clothing, geographical and chronological grouping, and areas of analysis through research and projects.

Offered: Fall.

FDC 123 Computer Patternmaking I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to patternmaking for apparel production using computer software. Includes measurements, creating a basic set of slopers, checking sloper fit, and basic pattern concepts.

Prerequisite(s): FDC 121.

Recommendation: Completion of FDC 111 before enrolling in this course.

Information: Prerequisite may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

FDC 126 Textiles

3 cr. hrs. 5 periods (2 lec., 3 lab)

Study of textile fibers, yarns, fabrication, characteristics, methods of coloration, printing, finishes, and influence on product performance. Includes fiber content, fabric construction, fabric swatches, finishes and techniques, and textile trends.

Offered: Spring.

FDC 131 Fashion Styling

3 cr. hrs. 3 periods (3 lec.)

Overview of the function of wardrobe in contemporary life. Includes U.S. and world trends, elements and principles of design applied to clothing selection and coordination, color, figure analysis, personal style, wardrobe evaluation, and hair and makeup as a key element in wardrobe and fashion styling.

Offered: Fall.

FDC 132 Global Fashion and Culture

3 cr. hrs. 3 periods (3 lec.)

Human behavior in relationship to clothing, body image, and self-concept. Includes global behavior and dress, clothing as messenger, the ritual of dress, global fashion for the masses, and life stages and clothing and image needs.

Offered: May not be offered this year, check class schedule.

FDC 135 Fashion Show/Event Planning

3 cr. hrs. 3 periods (3 lec.)

A survey of fashion direction, publicity and fashion event coordination. Includes development of an event, student fashion show production, and wrap up.

Recommendation: Completion of FDC 141 before enrolling in this course.

Offered: Spring.

FDC 141 Introduction to Fashion Design

3 cr. hrs. 3 periods (3 lec.)

Survey of the business of apparel manufacturing and fashion design. Includes history of the industry, careers in fashion, designing the garment, influences on design, and organization of a clothing line.

Offered: Fall.

FDC 144 Fashion Drawing

3 cr. hrs. 5 periods (2 lec., 3 lab)

Technical drawing of a garment on the fashion figure. Includes working on original designs and presenting them in a portfolio. Also includes fabrics and how to render them as well as a basic knowledge of garment construction.

Information: Having prior drawing coursework would be beneficial, recommend ART 110 or 213 before enrolling in this course.

Offered: Spring.

FDC 148 Costume Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to basic design techniques for theater costumes. Includes identifying and applying elements, sketching and coloring, paper fabrication of costume design, script and character analysis, application of historical research, and production scheduling and budget.

Information: Same as THE 148. May be taken two times for a maximum of six credit hours.

Offered: May not be offered this year, check class schedule.

FDC 196 Independent Studies in Fashion Design and Clothing

3 cr. hrs. 5- periods (2 lec., 3 lab)

Independent projects for continuing individual development in fashion design and clothing under the guidance of a faculty member.

Information: May be taken three times for a maximum of 9 credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Students must have taken at least twelve (12) credit hours in FDC courses before enrolling in this course.

Offered: May not be offered this year, check class schedule.

FDC 199 Co-op: Fashion Design and Clothing

1 cr. hrs. 1 periods (1 lec.)

Introduction to the work environment in the Fashion Apparel field. Includes the internship process, applying course work, oral and written communication skills, and self management on the job.

Corequisite(s): FDC 199WK

Information: Consent of instructor of department chair and successful completion of twelve (12) credit hours of FDC course work are required before enrolling in this course.

Information: May be taken four times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FDC 199WK Co-op Work: Fashion Design and Clothing

1-5 cr. hrs. 5-25 periods (5-25 lab)

A supervised work environment in the Fashion Apparel field. Includes completion of hours, knowledge of fashion industry job site, demonstration of aptitudes and abilities, journal/record of daily experiences and observations, and maintaining a written and digital contact list.

Corequisite(s): FDC 199

Information: Consent of instructor or department chair and successful completion of twelve (12) credit hours of FDC course work are required before enrolling in this course.

Information: May be taken four times for a maximum of twenty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FDC 211 Clothing Construction III

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of FDC 111. Advanced techniques in construction of clothing. Includes pattern layout options, construction techniques and principles applied to special fabrics, fabric selection for specialty garments, and evaluation.

Prerequisite(s): FDC 111 with a B or better.

Information: Prerequisite may be waived with consent of instructor.

Offered: Fall, Spring.

FDC 212 Tailoring: Jackets

3 cr. hrs. 5 periods (2 lec., 3 lab)

Traditional and speed-tailoring methods for jackets utilizing advanced techniques and materials. Includes pattern alterations for jackets, buttonholes, welt pockets, shaping the interfacing, inner structure of jackets, and complete garment evaluation.

Prerequisite(s): FDC 211 with a grade of B or better.

Recommendation: Completion of FDC 112 with a grade of B or better before enrolling in this course.

Information: Prerequisite may be waived with consent of instructor.

Offered: Fall.

FDC 213 Tailoring: Pants and Shirts

3 cr. hrs. 5 periods (2 lec., 3 lab)

Traditional and speed-tailoring methods for pants and shirts utilizing advanced techniques and materials. Includes pant construction, shirt construction, and completed garment evaluation.

Prerequisite(s): FDC 211 with a grade of B or better.

Recommendation: Completion of FDC 112 with a grade of B or better before enrolling in this course.

Information: Prerequisite may be waived with consent of instructor.

Offered: Spring.

FDC 214 Bridal and Formal Wear

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced construction techniques applied to specialty fabrics for formal wear. Includes client vs. customer, fitting the client, creating the muslin, constructing the formal wear garment, and closing contracts with the client

Prerequisite(s): FDC 211 with a grade of B or better.

Recommendation: Successful completion of FDC 212 before enrolling in this course.

Information: Prerequisite may be waived with consent of instructor.

Offered: Spring.

FDC 215 Sewing with Knits

3 cr. hrs. 5 periods (2 lec., 3 lab)

Skills and techniques used in the construction of garments made from knit fabrics. Includes pattern selection, fabric selection, tools and equipment, pattern fit and alteration; layout, cutting, and marking; and construction techniques.

Prerequisite(s): FDC 111 with a B or better.

Recommendation: Completion of FDC 211 with a grade of B or better before enrolling in this course.

Information: Prerequisite may be waived with consent of instructor.

Offered: Spring.

FDC 218 Introduction to Accessory Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to accessory design as it relates to historical and current trends. Includes construction of a simple handbag, construction techniques for hats, belts, hair accessories, and pet fashions. Also includes marketing and merchandising accessories.

Prerequisite(s): FDC 111.

Information: Proficiency test may be required for placement level.

Offered: May not be offered this year, check class schedule.

FDC 221 Flat Pattern Making II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of FDC 121. Includes measurement, marking and fitting, review of sloper slash and spread methods of design, pattern preparation, determining garment patterns, garment construction, and evaluation of individual garment design and construction.

Prerequisite(s): FDC 121.

Recommendation: Students should have a grade of C or higher in the prerequisite course before enrolling in this course.

Offered: Spring.

FDC 223 Computer Patternmaking II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of FDC 123. Includes introduction to software pattern libraries, advanced computer flat patternmaking, and using Computer-Aided pattern design.

Prerequisite(s): FDC 123.

Offered: May not be offered this year, check class schedule.

FDC 231 Flat Patternmaking III

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of FDC 221. Application and analysis of advanced patternmaking techniques and principles of grading (sizing) base patterns. Includes advanced patternmaking techniques, review of sloper for design and fitting purposes, creation of original designs, grading, and evaluation of individual garment design and construction.

Prerequisite(s): FDC 221 with a B or better

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

FDC 241 Draping I

3 cr. hrs. 5 periods (2 lec., 3 lab)

Application of design principles using the draping method of fashion design to create an original garment on a dress form. Includes review of essential design principles, muslin preparation, determining garment patterns, applying fabrics to the dress form, garment construction, and evaluation of individual garment design and construction.

Recommendation: Completion of FDC 111 and 211 with a grade of B or better before enrolling in this course.

Offered: May not be offered this year, check class schedule.

FDC 242 Draping II

3 cr. hrs. 5 periods (2 lec., 3 lab)

Continuation of FDC 241. Advanced draping techniques for fashion design to include the design and construction of a formal apparel item. Includes muslin for advanced apparel designs, yardage calculation, specialty fashion fabrics, constructing the formal wear or bridal design, and formal apparel evaluation.

Prerequisite(s): Completion of FDC 241 with a grade of B or better.

Recommendation: Completion of FDC 211 with a grade of B or better before enrolling in this course.

Information: Prerequisite may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

FDC 245 Digital Fashion Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the use of computer software to design fashion and technical drawings. Includes the fashion work arena, features and applications used to create digital fashion drawings, vocabulary, terms and technical criteria, fashion software, and developing multiple color patterns and textures.

Recommendation: Completion of ART 100, FDC 111 and 144 before enrolling in this course.

Offered: May not be offered this year, check class schedule.

FDC 288 Portfolio Preparation

3 cr. hrs. 5 periods (2 lec., 3 lab)

Overview of the development and marketing of a professional portfolio. Includes definition and evaluation of coherent bodies of work, documentation of work, preparation of portfolio production, production of a portfolio, parts of a portfolio, and marketing.

Recommendation: For advanced students who have completed coursework in their specific areas.

Information: Portfolio concentrations will be determined in a conference between student and instructor.

Information: Same as ART 288.

Offered: Fall, Spring.

FDC 289 Fashion Design and Clothing Capstone

3 cr. hrs. 5 periods (2 lec., 3 lab)

Development and creation of individual original garments incorporating skills acquired through previous courses. Includes capstone project overview, development of a five piece collection, and presenting the garment line.

Recommendation: Completion of FDC 111, 112, 121, 122, 126, 141, 144, 211, and 241 before enrolling in this course.

Offered: May not be offered this year, check class schedule.

Finance

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

FIN 100 Basic Principles of Organizational Finance

1 cr. hrs. 1 periods (1 lec.)

Introduction to the fundamental principles of finance. Includes basic financial concepts in industry and banking, the role of financial decision-makers, financial statements, common ratios, time value of money, and investment decisions.

Offered: May not be offered this year, check class schedule.

FIN 107 Business Finance

3 cr. hrs. 3 periods (3 lec.)

Fundamental principles of finance in profit-making, governmental, and not-for-profit organizations. Includes financial statements, common ratios, budgeting systems, cash forecasting, time value of money, investment decision, and break-even analysis.

Offered: May not be offered this year, check class schedule.

FIN 190 Internship in Finance

1-3 cr. hrs. 5-15 periods (5-15 lab)

Supervised internship in a financial workplace. Includes experiences supervised by a professional in the field.

Information: Consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

FIN 217 Analyzing Financial Data

1 cr. hrs. 1 periods (1 lec.)

Overview of financial data analysis. Includes income statement analysis and interpretation, retained earnings statement, balance sheets, statement of changes in financial position, sources of data, key financial ratios, and analysis procedures.

Prerequisite(s): ACC 211.

Offered: May not be offered this year, check class schedule.

Fire Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

FSC 101 Principles of Emergency Services

3 cr. hrs. 3 periods (3 lec.)

Introduction to fire protection and emergency services. Includes career opportunities in fire protection and related fields, culture and history of emergency services, fire loss analysis, organization and function of public and private fire protection services, and fire departments as part of local government. Also includes laws and regulations affecting the fire service, fire service nomenclature, specific fire protection functions, basic fire chemistry and physics, introduction to fire protection systems, introduction to fire strategy and tactics, and life safety initiatives.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: Fall, Spring.

FSC 110 Rope I

1 cr. hrs. 1 periods (1 lec.)

Introduction to basic rope rescue: safety, equipment, rope craft, anchors, mechanical advantage, belay systems, medical considerations, identifying terrain types, low angle evacuations, steep angle evacuations and steep angle rappel. Includes performance in rope craft, anchor construction, mechanical advantage construction, belay technique, patient packaging, low angle evacuations, and steep angle rappelling.

Information: This class meets State of Arizona Fire Marshal requirements: NFPA 1983, NFPA 1500 special operations, NFPA 1670.

Offered: Fall, Spring.

FSC 111 Rope II

1 cr. hrs. 1 periods (1 lec.)

Continuation of FSC 110. Concepts, techniques, and skills for rope rescue areas: safety, ropecraft, advanced anchors, applied mechanical advantage, belay systems, self-rescue, and high angle pickoffs. Also includes knot passing through technical evacuation systems, rope rescue strategy, and tactics.

Information: This class meets State of Arizona Fire Marshal requirements: NFPA 1983, NFPA 1500 special operations, NFPA 1670.

Offered: May not be offered this year, check class schedule.

FSC 112 Rope III

1 cr. hrs. 1 periods (1 lec.)

Continuation of FSC 111. Concepts, techniques, and skills for advanced rope rescue areas: safety, rope craft, anchors, applied mechanical advantage, belay systems, self-rescue, high angle pickoffs, knot passing through technical evacuation systems. Also includes rescue tactics and strategies relating to vertical rescues.

Prerequisite(s): FSC 111.

Information: This class meets State of Arizona Fire Marshal requirements: NFPA 1983, NFPA 1500 special operations, NFPA 1670.

Offered: May not be offered this year, check class schedule.

FSC 118 Swift Water Rescue for First Responders

1 cr. hrs. 1 periods (1 lec.)

Concepts and techniques to prepare the emergency responder to perform swift water rescue. Includes rescuer safety and philosophy, river dynamics, hydrology and hazards, and methods of effecting swift water rescues including boat handling operations. Includes basic water accident management techniques in still water. Also includes the water accident portion of this course taught at a swimming pool and the practical application conducted in moving water.

Prerequisite(s): FSC 110, 111, 112.

Information: This class meets State of Arizona Fire Marshal requirements: NFPA 1983, NFPA 1500 special operations, NFPA 1670.

Offered: May not be offered this year, check class schedule.

FSC 120 Fire Behavior and Combustion

3 cr. hrs. 3 periods (3 lec.)

Introduction to the theories and fundamentals of fire behavior and combustion. Includes physical and chemical properties of fire, materials and their relationship to fire as fuel, and the use of water and other fire suppression agents and strategies.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: Spring.

FSC 123 Building Construction Related to the Fire Service

3 cr. hrs. 3 periods (3 lec.)

Introduction to components of building construction as related to firefighter and life safety. Includes elements of construction and structure design shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

Prerequisite(s): FSC 101 and 120 with a C or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: Spring.

FSC 124 Fire Prevention

3 cr. hrs. 3 periods (3 lec.)

Introduction to fundamental concepts relating to the field of fire prevention. Includes history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use and application of codes and standards, plans review, fire inspections, fire and life safety education, and fire investigation.

Prerequisite(s): FSC 101 and 120 with a C or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: Fall.

FSC 125 Hydraulics and Water Supply

3 cr. hrs. 3 periods (3 lec.)

Introduction to hydraulics and water supply in fire service. Includes theoretical foundations and principles of water use in fire protection, water distribution systems, and survey of hydraulic principles to analyze and to solve water supply problems.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: May not be offered this year, check class schedule.

FSC 126 Fire Protection Systems in the Fire Service

3 cr. hrs. 3 periods (3 lec.)

Introduction to fire protection systems in the fire service. Includes features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppressions systems, water supply for fire protection, and portable fire extinguishers.

Prerequisite(s): FSC 120 with a C or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: Fall.

FSC 127 Principles of Emergency Services Safety and Survival

3 cr. hrs. 3 periods (3 lec.)

Introduction to the basic principles and history related to national firefighter life safety initiatives. Includes cultural and behavioral change, organizational health, safety profile, research investigation, national health and safety, risk management, and publication education of fire and life safety.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: Fall, Spring.

FSC 130 Strength and Fitness for the Fire Service

2.5 cr. hrs. 2.5 periods (2.5 lec.)

Overview of fitness as it pertains to prospective firefighters. Includes endurance training, flexibility training, strength conditioning and use of equipment in Fire Incident Readiness Evaluation.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring.

FSC 149 Fire Operations I

4 cr. hrs. 5 periods (3 lec., 2 lab)

Specialized classroom and practical experience in the techniques of firefighting. Includes the chemistry of fire, use of water and other agents, firefighting equipment and its uses, firefighting practices and safety.

Information: Completion of FSC 149 and 150 will help prepare the student for successful completion of State of Arizona Firefighter I and II practical evaluations. Only when taken as a part of the Pima Community College Fire Academy can students be concurrently enrolled in FSC 149 and 150.

Offered: Fall, Spring.

FSC 150 Fire Operations II

4 cr. hrs. 5 periods (3 lec., 2 lab)

Specialized classroom and practical experience in the practices and techniques of fire fighting. Includes principles of community fire defense, methods of entry, rescue, tools, apparatus, equipment, salvage, hydraulics, and fire extinguishment.

Prerequisite(s): FSC 149.

Information: Completion of FSC 149 and 150 will help prepare the student for successful completion of State of Arizona Firefighter I and II practical evaluations. Only when taken as a part of the Pima Community College Fire Academy can students be concurrently enrolled in FSC 149 and 150.

Offered: Fall, Spring.

FSC 151 Introduction to Fire Science

3 cr. hrs. 3 periods (3 lec.)

Historical and scientific background on the fire protection field. Includes the development and future of the field in America; governmental, industrial and private fire protection organizations and agencies; and employment and promotional opportunities.

Recommendation: Completion of FSC 149 prior to enrolling in this class or concurrent enrollment in FSC 149 and 150.

Offered: May not be offered this year, check class schedule.

FSC 152 Fundamentals of Fire Prevention

3 cr. hrs. 3 periods (3 lec.)

Introduction to the principles of fire prevention. Includes authority, responsibility and organization of fire prevention, inspection procedures and reports, fire hazard recognition, building construction, and occupancy classifications. Also includes site access and means of egress, water-based fire protection and water supply systems, portable extinguishers, special agent, extinguishing systems, and fire detection and alarm systems, plans review, hazardous materials and flammable and combustible liquids, and storage, handling, and use of other hazardous materials.

Prerequisite(s): FSC 149.

Offered: May not be offered this year, check class schedule.

FSC 153 Hazardous Materials

1.5 cr. hrs. 1.5 periods (1.5 lec.)

Basic chemical concepts and their applications to the field of fire science. Includes classes and properties of hazardous materials; recognition and identification of materials; management of materials in transit, in use, and in storage; and management of hazardous materials incidents.

Information: Equivalent to State of Arizona's First Responder, 40-hour course.

Offered: Fall, Spring.

FSC 154 Advanced Fire Prevention

3 cr. hrs. 3 periods (3 lec.)

Introduction to high risk and industrial fire prevention. Includes code interpretation and application, research, implementing policy, testifying in legal proceedings, and creating forms and job aids. Also includes conducting field inspections and plans review, and building and fire code applications to simulated situations.

Prerequisite(s): FSC 152.

Information: Completion of this course will allow the student to test for Arizona State Certification as Inspector II.

Offered: May not be offered this year, check class schedule.

FSC 160 Wildland Firefighting

3 cr. hrs. 3 periods (3 lec.)

Basic wildland firefighting. Includes locating and reporting the fire, incident operations and management, suppression equipment, fire behavior, size-up, methods of suppression, and safety.

Information: This course meets Arizona Center for Fire Service Excellence and Arizona Department of Forestry Guidelines for Wildland Firefighting Training.

Offered: Fall, Spring.

FSC 162 Hydraulics and Fire Suppression

3 cr. hrs. 3 periods (3 lec.)

Principles of hydraulics as applied to fire suppression. Includes physical laws affecting the movement of water through pipes, hydrants, pumpers, hoses, etc.; functions and limitations of mechanical equipment to overcome these restrictions; effect of friction loss; head and pressure; water system; fire flow requirements; and organization for fire suppression.

Prerequisite(s): FSC 149, 150 and 151.

Offered: May not be offered this year, check class schedule.

FSC 163 Fire Apparatus and Equipment

3 cr. hrs. 3 periods (3 lec.)

Overview, concepts, and techniques to use fire equipment. Includes automotive apparatus (pumpers, aerial ladders, lift platforms, hose wagons, transports and utility vehicles), water towers, heavy auxiliary mechanical equipment and appliances, generators, compressors, rescue and forcible entry tools and cutting torches.

Prerequisite(s): FSC 149, 150 and 151.

Offered: May not be offered this year, check class schedule.

FSC 167 Rescue Practices for the Fire Service

2.5 cr. hrs. 2.5 periods (2.5 lec.)

Introduction to skills necessary to assess, extricate, and care for victims in emergency situations. Includes an overview of fire service-based rescue, rescue operations and incident management, and civilian versus firefighter rescue. Also includes why firefighters become victims and an overview of technical rescues.

Prerequisite(s): FSC 149.

Offered: May not be offered this year, check class schedule.

FSC 168 Special Hazard Tactical Problems

3 cr. hrs. 3 periods (3 lec.)

Concepts and techniques designed for the experienced firefighter on successfully mitigating incidents that involve hazards that are not commonly experienced such as hazardous materials under fire conditions. Other examples may include a train derailment and biological attack. Also includes real-life incidents in order to learn from prior experiences, as well as practice with potential scenarios created from the surrounding area.

Prerequisite(s): FSC 153.

Information: Designed for experienced firefighters.

Offered: May not be offered this year, check class schedule.

FSC 170 Fire Service Leadership

3 cr. hrs. 3 periods (3 lec.)

Practical training for fire service leadership and supervision. Includes decision-making, problem solving, running a meeting, managing multiple roles, creativity, power, and ethics. Also includes situational leadership, delegation, coaching, and discipline.

Prerequisite(s): FSC 149.

Information: This course meets National Fire Academy (NFA) requirements for Leadership I, II, and III.

Information: FSC 170A, 170B, and 170C together constitute FSC 170.

Offered: May not be offered this year, check class schedule.

FSC 170A Fire Service Leadership I

1 cr. hrs. 1 periods (1 lec.)

Practical training for fire service leadership and supervision. Includes decision-making, problem solving, and running a meeting.

Prerequisite(s): FSC 149.

Information: This course meets National Fire Academy (NFA) requirements for Leadership I, II, and III.

Information: FSC 170A, 170B and 170C together constitute FSC 170.

Offered: May not be offered this year, check class schedule.

FSC 170B Fire Service Leadership II

1 cr. hrs. 1 periods (1 lec.)

Continuation of FSC 170A. Includes practical training for fire service leadership and supervision. Also includes managing multiple roles, creativity, power, and ethics.

Prerequisite(s): FSC 149.

Information: This course meets National Fire Academy (NFA) requirements for Leadership I, II, and III.

Information: FSC 170A, 170B, and 170C together constitute FSC 170.

Offered: May not be offered this year, check class schedule.

FSC 170C Fire Service Leadership III

1 cr. hrs. 1 periods (1 lec.)

Continuation of FSC 170B. Includes practical training for fire service leadership and supervision. Also includes situational leadership, delegation, coaching, and discipline.

Prerequisite(s): FSC 149.

Information: This course meets National Fire Academy (NFA) requirements for Leadership I, II, and III.

Information: FSC 170A, 170B, and 170C together constitute FSC 170.

Offered: May not be offered this year, check class schedule.

FSC 173 Records and Reports

.25-1 cr. hrs. .25-1 periods (.25-1 lec.)

Introduction to the elements and qualities of good report writing and comprehensive documentation. Includes form, style, and methodologies for writing various reports, techniques for developing an accurate narrative, and proper and improper conclusions. Also includes effective and correct use of grammar and the mechanics of writing.

Prerequisite(s): FSC 149.

Offered: Fall, Spring.

FSC 174 Fire Investigation I

3 cr. hrs. 3 periods (3 lec.)

Introduction to fundamental concepts of fire scene investigation. Includes emergency responder responsibilities and observations, conducting origin and cause interpretation, preservation of evidence and documentation, scene security, motives of the fire setter, and elements of fire dynamics.

Prerequisite(s): FSC 101, 120 and 123 with a C or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: Spring.

FSC 180 Driver Training for Fire Service

3 cr. hrs. 3 periods (3 lec.)

Techniques for driving and handling fire vehicles. Includes safe operating procedures, defensive driving, apparatus inspection, training in emergency maneuvers, and the key components of the driving system.

Prerequisite(s): FSC 149, 150 and 151.

Information: Consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

FSC 189 Current Issues in Fire Science

2 cr. hrs. 2 periods (2 lec.)

Study of current issues in the fire service. Includes developing and writing an independent, applied research project, utilizing various computer applications for formatting and design, and use of the Internet and library resources.

Prerequisite(s): WRT 101 and 102.

Information: Completion of twenty credits in FSC prefix courses is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

FSC 230 Fire Investigation II

3 cr. hrs. 3 periods (3 lec.)

Continuation of FSC 174. Principles and advanced concepts of fire investigation. Includes rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation, and courtroom testimony.

Prerequisite(s): FSC 174 with a C or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: May not be offered this year, check class schedule.

FSC 249 Occupational Safety and Health for Emergency Services

3 cr. hrs. 3 periods (3 lec.)

Concepts of occupational health and safety related to emergency service organizations. Includes risk and hazard evaluation, incident management, occupational health and safety, and control procedures for emergency service organizations.

Prerequisite(s): FSC 127 with a C or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: May not be offered this year, check class schedule.

FSC 250 Principles of Fire and Emergency Services Administration

3 cr. hrs. 3 periods (3 lec.)

Principles and concepts of administration for the fire and emergency services department. Includes relationship of government agencies to fire service, responsibility and authority, public policy, ethics, and leadership of the company officer.

Prerequisite(s): FSC 101 with a C or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: May not be offered this year, check class schedule.

FSC 251 Hazardous Materials Chemistry

3 cr. hrs. 3 periods (3 lec.)

Overview of the basic chemistry of hazardous materials. Includes recognition, identification, reactivity, and health hazards encountered by emergency services.

Prerequisite(s): FSC 120 with a C grade or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: May not be offered this year, check class schedule.

FSC 252 Fire Service Strategy and Tactics

3 cr. hrs. 3 periods (3 lec.)

Principles and tactics of fire service ground control. Includes fireground factors and management, command operations and functions, life safety, personnel, equipment, and extinguishing agents.

Prerequisite(s): FSC 120, 123 and 127 with a C grade or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: May not be offered this year, check class schedule.

FSC 253 Legal Aspects of Emergency Services

3 cr. hrs. 3 periods (3 lec.)

Overview of the federal, state, and local laws that regulate emergency services. Includes a review of national standards, regulations, and consensus standards.

Prerequisite(s): FSC 101 and 250 with a C grade or better.

Information: This class is in compliance with the Fire and Emergency Services Higher Education (FESHE) model curriculum.

Offered: May not be offered this year, check class schedule.

FSC 260 Fire and Emergency Services Instructor

2 cr. hrs. 2 periods (2 lec.)

Theoretical and practical training in developing and instructing fire and emergency services training programs. Includes an exploration of safety and legal issues, adult learning psychology, developing, planning and presenting effective instruction, evaluating student learning, teaching diverse learners, and use of instructional media.

Prerequisite(s): FSC 189.

Information: Consent of instructor is required before enrolling in this course concurrently with FSC 189.

Information: Meets the requirements for the Arizona State Fire Marshal Instructor I certification and NFPA 1041.

Offered: May not be offered this year, check class schedule.

FSC 270 Leadership I for Fire Service Executives

1 cr. hrs. 1 periods (1 lec.)

Concepts, techniques, and application of effective executive leadership. Includes leadership styles and characteristics, the effective executive, and leaders with vision, influence and motivation. Also includes being a change facilitator in a traditional organization, and the future of leadership.

Prerequisite(s): FSC 170.

Offered: May not be offered this year, check class schedule.

FSC 271 Leadership II for Fire Service Executives

1 cr. hrs. 1 periods (1 lec.)

Continuation of FSC 270. Includes organizational structure, roles and responsibilities, and organizational values. Also includes organizational vision, fiscal management and priorities, innovative organizations, and executive leadership.

Prerequisite(s): FSC 270.

Offered: May not be offered this year, check class schedule.

FSC 272 Leadership III for Fire Service Executives

1 cr. hrs. 1 periods (1 lec.)

Continuation of FSC 271. Includes communication skills, presentation skills, and verbal and writing skills at an executive level. Also includes interpersonal skills, labor relations, conflict management, ethical and unethical persuasion, and the media.

Prerequisite(s): FSC 271.

Offered: May not be offered this year, check class schedule.

FSC 273 Leadership IV for Fire Service Executives

1 cr. hrs. 1 periods (1 lec.)

Continuation of FSC 272. Includes the local fire department in relation to its city government, local policy development. Also includes legal aspects of the city and department procedures, relationships with organized labor, networking and community relations, relations with local and state fire service providers, and understanding the national and international fire service.

Prerequisite(s): FSC 272.

Offered: May not be offered this year, check class schedule.

FSC 274 Leadership V for Fire Service Executives

1 cr. hrs. 1 periods (1 lec.)

Continuation of FSC 273. Includes reasoning, thinking patterns, problem identification, and problem solving strategies. Also includes problem solving styles, decision-making models and approaches, personal decision making, and evaluation.

Prerequisite(s): FSC 273.

Offered: May not be offered this year, check class schedule.

FSC 280 Fire Chief Preparation

4 cr. hrs. 4 periods (4 lec.)

Preparation for professional fire personnel to become chief officers. Includes incident command, communication, and disaster management.

Offered: May not be offered this year, check class schedule.

Fitness and Sport Sciences

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

FSS 155 Athletic-Academic Success

2 cr. hrs. 2 periods (2 lec.)

Survey of successful educational strategies in support of individual academic plans, career goals and personal decision making. Includes taking the first step, goals and time, creative thinking, memory, note-taking skills, disarm tests, and communicating. Also includes health and nutrition, diversity, and resources.

Information: May be taken three times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

FSS 208 Professional Activities: Group Fitness

2 cr. hrs. 3 periods (1 lec., 2 lab)

Fitness and teaching methods for the Fitness and Sport Sciences major to prepare for group fitness certification. Includes introduction to components of group fitness, teaching a fitness class, choreography basics, specific populations and health concerns, and legal and professional responsibilities.

Prerequisites(s): FSS 234 or FSS 234A and 234B or concurrent enrollment.

Recommendation: FSS 208 and 277 taken concurrently is highly recommended. Completion of WRT 090 or 096 or placement into WRT 101 on the writing assessment is also highly recommended.

Information: This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

Offered: Fall.

FSS 218 Professional Activities: Weight Training

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction to basic resistance training principles. Includes history, anatomy and physiology, biomechanics, weight training principles and concepts, program development, and assessment and programming.

Prerequisite(s): FSS 234A or 234B or concurrent enrollment.

Recommendation: Completion of WRT 090 or 096 or placement into WRT 101 on the writing assessment test before enrolling in this course.

Information: This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

Offered: Spring.

FSS 234 Fundamentals of Exercise Science

4 cr. hrs. 4 periods (4 lec.)

Overview of various systems, reactions, and adaptations to exercise and movement. Includes muscular system and anatomy, nervous system, kinesiology, metabolism, principles of exercise training, adaptations to exercise training; and the cardiovascular, respiratory, and endocrine systems.

Prerequisite(s): REA 091 or placement into REA 112 on the reading assessment, and WRT 090 or 096 or placement into WRT 101 on the writing assessment.

Recommendation: Completion of BIO 160IN or BIO 201IN and 202IN is highly recommended before enrolling in this course.

Information: FSS 234A and 234B together constitute FSS 234.

Offered: Fall, Spring.

FSS 234A Fundamentals of Exercise Science: Module A

2 cr. hrs. 2 periods (2 lec.)

Overview of various systems, reactions, and adaptations to exercise and movement. Includes muscular system and anatomy, nervous system, kinesiology, metabolism, and principles of exercise training.

Prerequisite(s): REA 091 or placement into REA 112 on the reading assessment, and WRT 090 or 096 or placement into WRT 101 on the writing assessment.

Recommendation: Completion of BIO 160IN or BIO 201IN and 202IN is highly recommended before enrolling in this course.

Information: FSS 234A and 234B together constitute FSS 234.

Offered: Fall.

FSS 234B Fundamentals of Exercise Science: Module B

2 cr. hrs. 2 periods (2 lec.)

Overview of various systems, reactions, and adaptations to exercise and movement. Includes exercise training, metabolism; and the cardiovascular, respiratory, and endocrine systems.

Prerequisite(s): REA 091 or placement into REA 112 on the reading assessment, and WRT 090 or 096 or placement into WRT 101 on the writing assessment.

Recommendation: Completion of BIO 160IN or BIO 201IN and 202IN is highly recommended before enrolling in this course.

Information: FSS 234A and 234B constitute FSS 234.

Offered: Spring.

FSS 236 Communication and Exercise Adherence

2 cr. hrs. 2 periods (2 lec.)

Communication skills and interviewing techniques for personal trainers. Includes theories of motivation, the trans-theoretical model and stages of change, and communication techniques.

Recommendation: WRT 090 or 096 or placement into WRT 101 on the writing assessment test.

Information: This course is intended for the Fitness Professional program and continuing education for fitness professionals, coaches, and physical education teachers.

Offered: Fall.

FSS 238 Introduction to Sports Injury Management

3 cr. hrs. 3 periods (3 lec.)

Introduction to principles and techniques of preventing, recognizing, treating, and rehabilitating sports related injuries. Includes overview of sports injury management, recognition of common sports injuries, taping/wrapping techniques, principles of rehabilitation, and event preparation and risk management.

Recommendation: WRT 090 or 096 or placement into WRT 101 on the writing assessment.

Offered: Fall, Spring.

FSS 241 Nutrition for Exercise and Sport

3 cr. hrs. 3 periods (3 lec.)

Examination of the relationship between nutrition and the human body. Includes optimal nutrition, energy expenditure, body composition assessment, regulating the body through exercise, and recent research findings.

Recommendation: MAT 086 (or placement into MAT 092), REA 091 (or placement into REA 112), and WRT 090 or 096 (or placement into WRT 101).

Information: This course is intended for the Fitness Professional and professional development for coaches.

Offered: Fall.

FSS 260 Business Practices for the Personal Trainer

3 cr. hrs. 3 periods (3 lec.)

Practices associated with employment and creating and managing a personal training business. Includes introduction to the fitness industry, training business formats, marketing and managing a personal training business, legal and professional responsibilities, financing and accounting principles, and developing a business plan.

Prerequisite(s): WRT 090 or 096 or placement into WRT 101 on the writing assessment.

Information: This course is intended for the Fitness Professional program and continuing education for fitness professionals, coaches, and physical education teachers.

Offered: Spring.

FSS 262 Personal Trainer: Special Populations

2 cr. hrs. 3 periods (1 lec., 2 lab)

Exercise management for persons with chronic diseases. Includes medical model health appraisal, allied health profession referrals, chronic disease and disabilities, and functional exercise adaptations.

Recommendation: FSS 218 and 276.

Information: This course is intended for students in the Fitness Professional Certificate program or for current physical education teachers or healthcare providers for continuing education credit. Students who are not currently certified as personal trainers must be in the second or later semester of the certificate program before enrolling in this course.

Offered: Fall.

FSS 270 Advanced Principles for Athletic Conditioning

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Advanced theory and application of training principles for athletes. Includes safety and personal health issues, strength and conditioning principles, testing and evaluation, exercise techniques, and program design.

Recommendation: FSS 218, 234, 276, and WRT 090 or 096 (or placement into WRT 101 on the writing assessment).

Information: This course requires physical activity. This course is intended for the Fitness Professions Certificate program and continuing education for fitness professionals, coaches, and physical education teachers.

Offered: May not be offered this year, check class schedule.

FSS 271 Sport Psychology

3 cr. hrs. 3 periods (3 lec.)

Development of the basics of sport psychology. Includes psychological perspective, psychology skills for coaches, psychological skills for athletes, and implementing skills training.

Recommendation: WRT 090 or 096 or placement into WRT 101 on the writing assessment.

Information: This course is intended for the Coaching Certificate program and continuing education for fitness professionals, coaches, and physical education teachers.

Offered: Spring, Summer.

FSS 272 Coach Techniques/Practices

3 cr. hrs. 3 periods (3 lec.)

Coaching Techniques and Practices Concepts and strategies for teaching athletes both new skills and fine tuning of existing skills. Includes preparing to teach skills, presenting, developing and maintaining skills, and cognitive processes involved in skills.

Information: To be successful in this course, the student should have basic writing skills equivalent to the completion of WRT 090 or 096.

Offered: Fall.

FSS 273 Sport Physiology

3 cr. hrs. 3 periods (3 lec.)

Principles of fitness training for peak performance. Includes sport physiology and the athlete, training for muscular and energy fitness, designing training programs, and producing peak performance.

Recommendation: WRT 090 or 096 or placement into WRT 101 on the writing assessment.

Information: This course is intended for the Coaching Certificate program and continuing education for fitness professionals, coaches, and physical education teachers.

Offered: Spring.

FSS 276 Personal Trainer: Muscular Strength, Endurance, Flexibility

3 cr. hrs. 4 periods (2 lec., 2 lab)

Assessment and interpretation of results for individualized programs designed for muscular strength, endurance and flexibility. Includes pre-activity screening, assessment, interpretation of results, manipulative variables in program design, and concept of periodization.

Prerequisite(s): FSS 234A or 234B or concurrent enrollment.

Recommendation: Completion of REA 091 or placement into REA 112 on the reading assessment test, and WRT 090 or 096 (or placement into WRT 101 on the writing assessment test) before enrolling in this course.

Information: This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

Offered: Fall.

FSS 277 Personal Trainer: Cardiovascular Endurance/Body Composition

3 cr. hrs. 4 periods (2 lec., 2 lab)

Assessment and interpretation of testing results for individualized program design for cardiovascular training, and the skill development of body composition assessment techniques. Includes assessment issues, development of SMART (Specific/Measurable/Action-Oriented/Realistic/Time Bound) goals, program development, and special considerations.

Prerequisite(s): FSS 234A or 234B or concurrent enrollment.

Recommendation: Completion of REA 091 or placement into REA 112 on the reading assessment test, and WRT 090 or 096 or placement into WRT 101 on the writing assessment test before enrolling in this course.

Information: This course requires physical activity and is intended for students pursuing the Fitness Professional Certificate.

Offered: Spring.

FSS 280 Lifestyle and Weight Management Consultant

1 cr. hrs. 1 periods (1 lec.)

Emphasis on evaluating fad diets, educating clients on proven techniques for weight loss (diet and exercise), and supporting clients with specific activities at various stages of change. Includes the trans-theoretical model, basic nutritional guidelines, exercise/activity guidelines and safety precautions, and developing personal strategies.

Recommendation: FSS 236 or concurrent enrollment.

Information: This course is intended for the Fitness Professional program and continuing education for fitness professionals, coaches, and physical education teachers.

Information: Students must complete a Nutrition course at the 100 level or higher prior to, or concurrently with this course.

Offered: Fall.

FSS 281 Personal Trainer Exam Preparation

1 cr. hrs. 1 periods (1 lec.)

Summation of the curriculum presented in the Fitness Professional Certificate program. Includes exam content areas, study strategies, and test taking strategies to prepare for a nationally recognized certificate examination for personal trainers.

Prerequisite(s): Successful completion of or current enrollment in FSS 208, 218, 234, 276, and 277.

Information: Prerequisites may be waived with consent of instructor.

Offered: Fall, Spring.

FSS 285 Principles of Athletic Coaching

3 cr. hrs. 3 periods (3 lec.)

Introduction to the principles of athletic coaching. Includes principles of behavior, teaching, physical training, and management.

Recommendation: WRT 090 or 096 or placement into WRT 101 on the writing assessment.

Offered: May not be offered this year, check class schedule.

FSS 291 Fitness and Sport Sciences Internship

3-4 cr. hrs. 7-10 periods (1 lec., 6-9 lab)

Volunteer fitness professional field experience at an approved work site. Includes communication in the fitness facility, positive work attitudes and practices, fitness professional ethics, progress review, fitness professional systems, and professional development. Also includes employment strategies, final evaluation, employment interview, and fitness professional field experience.

Prerequisites(s): FSS 208, 218, 234, 236, 276, and 277 or concurrent enrollment.

Information: May be taken concurrently with above prerequisites in the last semester and/or program electives. Designed for students in their final semester of course work in the Fitness Professional Certificate program. This course requires approximately 90 - 135 hours of supervised internship time at two or more facilities, in addition to weekly one hour lecture periods.

Offered: Fall, Spring.

FSS 296 Independent Study in Fitness and Sport Sciences

1-4 cr. hrs. 1-4 periods (1-4 lec.)

Students independently continue their academic development in health, physical education, recreation, coaching, dance or fitness, with the help of faculty member.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

FSS 299 Co-op: Fitness Professional

1 cr. hrs. 1 periods (1 lec.)

Introduction to Cooperative Education which provides for success in securing and retaining a job related to subject area. Includes communication skills, time and energy management, stress and its management, and careers. Also includes placing yourself on the job market, principles, theories, and practices in the career field, and problems in the work situation.

Corequisite(s): FSS 299WK

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is intended for the Fitness Professional program and may be taken in the 2nd semester or later upon satisfactory completion of either FSS 276 or FSS 277.

Offered: May not be offered this year, check class schedule.

FSS 299WK Co-op Work: Fitness Professional

2 cr. hrs. 10 periods (10 lab)

A supervised cooperative work program for students in an occupation related area. Teacher-coordinators work with students and their supervisors.

Corequisite(s): FSS 299

Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is intended for the Fitness Professional program and may be taken in the 2nd semester or later upon satisfactory completion of either FSS 276 or FSS 277.

Offered: May not be offered this year, check class schedule.

Fitness and Wellness

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

FAW 104F1 Conditioning: For Physically Demanding Jobs

1 cr. hrs. 2 periods (2 lab)

Total body conditioning designed to prepare or enhance fitness required for physically demanding professions such as law enforcement, fire fighting, or the military. Includes personal safety and preparation, fitness assessments and goal setting, designing an individualized program, programmatic instruction and conditioning, and reassessment and goal setting.

Information: This course is intended for individuals who are preparing for a job related physical fitness test or who have physically demanding jobs.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

FAW 104F2 Conditioning: Speed, Agility, and Quickness

1 cr. hrs. 2 periods (2 lab)

Total body conditioning designed to enhance sport-related fitness for athletes or fitness enthusiasts. Includes personal safety and preparation, fitness assessments and goal setting, relationship of sport to health related fitness components, designing an individualized program, programmatic instruction and conditioning, and reassessment and goal setting. Also includes focus on the development of agility, balance, coordination, power, reaction time, and speed in sports or activities requiring these skills.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is intended for individuals who have been participating in regular conditioning or sport activities.

Offered: Fall, Spring.

FAW 106F2 Individual Fitness: Running

1 cr. hrs. 2 periods (2 lab)

Cardiovascular conditioning through running and walk/run workouts intended for the beginning and intermediate runner. Includes an introduction to running, components of training, heart rate zone training, the distances, running health and safety, and designing your training program. Also includes stride technique, proper alignment, cardiovascular fitness assessment, goal setting, and workout types for specific goals and distances.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is suitable for students who wish to run a few miles a week to those training for distances up to a marathon.

Offered: May not be offered this year, check class schedule.

FAW 106F3 Individual Fitness: Swimming

1 cr. hrs. 2 periods (2 lab)

Cardiovascular conditioning through lap swimming. Includes basic stroke review, techniques of endurance swimming, and assessment and improvement of cardiovascular fitness level.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is not suitable for students with a fear of water or who do not have some initial swimming skill (novices).

Offered: Fall, Spring.

FAW 106F4 Individual Fitness: Walking

1 cr. hrs. 2 periods (2 lab)

Cardiovascular conditioning, improved fitness, and weight management through various walking workouts. Includes introduction to walking, components of training, heart rate zone training, common faults, walking health and personal safety, designing your training program, and race walking techniques. Also includes stride technique, proper alignment, cardiovascular fitness assessment, goal setting, and workout types for specific goals and distances.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FAW 108 Senior Fitness

1 cr. hrs. 2 periods (2 lab)

Introduction to a personalized fitness program using resistance, cardiovascular, and flexibility training for older adults. Includes orientation to the fitness facility, evaluation of personal fitness status and needs, principles of basic program design, and benefits of healthy lifestyle choices. Also includes choosing appropriate exercises to meet individual goals, and developing initial training strategies for improving body total fitness.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is appropriate for healthy older adults who have a desire to maintain or increase their activity levels.

Offered: May not be offered this year, check class schedule.

FAW 110F1 Weight Training and Cardiovascular Fitness Level I

1 cr. hrs. 2 periods (2 lab)

Introduction to a personalized fitness program using resistance, cardiovascular, and flexibility training. Includes orientation to the fitness facility, evaluation of personal fitness status and goal setting, principles of basic program design, and benefits of healthy lifestyle choices.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is appropriate for students desiring to improve either health fitness or athletic performance and may NOT be taken concurrently with FAW 110F2 or FAW 110F3.

Offered: Fall, Spring, Summer.

FAW 110F2 Weight Training and Cardiovascular Fitness Level I Extended

2 cr. hrs. 4 periods (4 lab)

Introduction to a personalized fitness program using resistance, cardiovascular, and flexibility training. Includes orientation to the fitness facility, evaluation of personal fitness status and goal setting, principles of basic program design, and benefits of healthy lifestyle choices.

Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is appropriate for students desiring to improve either health fitness or athletic performance and may NOT be taken concurrently with FAW 110F1 or FAW 110F3.

Information: This course requires twice the time commitment for working out as FAW 110F1.

Offered: Fall, Spring.

FAW 110F3 Weight Training and Cardiovascular Fitness Level II

2 cr. hrs. 4 periods (4 lab)

Continuation of FAW 110F1 or FAW 110F2. Includes orientation to the fitness facility, evaluation of personal fitness status and needs, principles of program design, and benefits of healthy lifestyle choices.

Prerequisite(s): FAW 110F1 or 110F2.

Information: May be taken two times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is appropriate for students desiring to improve either health fitness or athletic performance and may NOT be taken concurrently with FAW 110F1 or FAW 110F2.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: Fall, Spring.

FAW 112F1 Ballroom/Latin Dance I

1 cr. hrs. 2 periods (2 lab)

Introduction to ballroom and Latin dancing with emphasis on basic steps, turns, and varied techniques of traditional dances. Includes key components of each dance, floorwork/locomotor skills, dancing as a total activity, and evaluation.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Traditional ballroom dances covered are the six majors: Foxtrot, Waltz, East Coast Swing, Tango, Cha Cha, and Rumba.

Information: Other popular social dances that may be covered are the Salsa/Mambo, Night Club Two Step, and West Coast Swing.

Information: This course is intended for recreational ballroom dance and will not be accepted for the Associate of Fine Arts Dance Concentration.

Offered: Fall, Spring.

FAW 112F2 Ballroom/Latin Dance II

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 112F1. Includes key components of each dance, floorwork/locomotor skills, dancing as a total activity, and evaluation. Also includes emphasis on combinations, smooth transitions, and complex rhythmic patterns for the six major Ballroom dances.

Prerequisite(s): FAW 112F1.

Information: Other popular social dances that may be covered are the Salsa/Mambo, Night Club Two Step, and West Coast Swing.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is intended for recreational ballroom dance and will not be accepted for the Associate of Fine Arts Dance Concentration.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

FAW 113F1 Belly Dance I

1 cr. hrs. 2 periods (2 lab)

Introduction to Egyptian, Turkish, and American belly dance with emphasis on foot placement and efficient execution of basic skills. Includes key components of belly dance and dancing as a total activity. Also includes history of belly dance; dance terminology; developing stamina, strength, balance, flexibility, endurance, and coordination; organizing dancing patterns into complete routines; and learning to improvise.

Information: This course is intended for recreational belly dance and will not be accepted for the Associate of Fine Arts Dance Concentration.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

FAW 113F2 Belly Dance II

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 113F1. Includes key components of each dance, class protocol, dancing as a total activity and evaluation.

Prerequisite(s): FAW 113F1.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Prerequisite(s) may be waived with consent of instructor.

Information: This course is for those experienced in Belly Dance.

Offered: May not be offered this year, check class schedule.

FAW 123F1 Salsa/Latin Dance I

1 cr. hrs. 2 periods (2 lab)

Introduction to salsa and other Latin dances with emphasis on basic steps, turns, and techniques to build confidence for dancing socially. Includes key components of each dance, floorwork/locomotor skills, dancing as a total activity, and evaluation. Also includes history of salsa, dance terminology, developing stamina, strength and balance, organizing dancing patterns into complete routines, and learning to improvise.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is intended for recreational Salsa dance and will not be accepted for the Associate of Fine Arts Dance Concentration.

Offered: Fall, Spring.

FAW 128F3 Cardio Cross-Training

1 cr. hrs. 2 periods (2 lab)

Cardiovascular and muscular exercises generally set to music and performed rhythmically. Includes personal safety and preparation, personal fitness assessment and activity modifications, and cardio and interval training.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course will utilize a variety of aerobic modalities which may include floor exercise, steps, and interval training.

Offered: Fall, Spring, Summer.

FAW 128F4 Cardio-Kickboxing

1 cr. hrs. 2 periods (2 lab)

Cardio training and muscular exercises generally set to music, performed rhythmically, and patterns simulate the movements of kickboxing (upper and lower body strikes) without physical contact. Includes personal safety and preparation, and personal fitness assessment and activity modifications.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FAW 128F6 Cardio: Step

1 cr. hrs. 2 periods (2 lab)

Cardiovascular and muscular exercises set to music, performed rhythmically using basic to complex stepping patterns on the floor and on a raised platform. Includes personal safety and preparation, personal fitness assessment and activity modifications, and cardio training.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FAW 129F3 Zumba®

1 cr. hrs. 2 periods (2 lab)

Cardiovascular and muscular exercises inspired by Latin dance and music using Zumba® techniques. Includes personal safety and preparation, personal fitness assessment and activity modifications, and elements of rhythmic aerobic routines.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

FAW 130 Boot Camp Style Circuit Training

1 cr. hrs. 2 periods (2 lab)

Total body conditioning using various exercises, stations, and equipment which provide a cardiovascular challenge while emphasizing development of muscular strength and endurance. Includes personal safety and preparation, personal fitness assessment and activity modifications, and techniques and considerations for exercise. Also includes work on flexibility, agility, balance, and coordination with emphasis on personal fitness development.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

FAW 131 Indoor Cycling

1 cr. hrs. 2 periods (2 lab)

Cardiovascular conditioning set to music and performed on a stationary bicycle. Includes personal safety and preparation, key concepts, personal fitness assessment and activity modifications, and elements of indoor cycling training. Also includes determination of cardiovascular endurance level and challenging that system, improving local muscular endurance, and flexibility.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

FAW 132 Kickboxing

1 cr. hrs. 2 periods (2 lab)

Total body conditioning using various kickboxing exercises, stations, and equipment that provide a cardiovascular challenge while emphasizing development of muscular strength and endurance through upper and lower body striking activities. Includes personal safety and preparation, personal fitness assessment and activity modifications, and kickboxing skill development.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Students are expected to provide their own bag gloves or hand wraps for contact with the bags and pads.

Information: Music may be used for motivation during the course but this is not a choreographed class.

Offered: Fall, Spring, Summer.

FAW 134F1 Pilates

1 cr. hrs. 2 periods (2 lab)

Introduction to the six core principles of Pilates in individual exercises and sequences of movements. Includes key components of Pilates, integrative practice and personalizing one's practice. Also includes total body conditioning to improve strength, flexibility, coordination, proper body alignment, breath control, and overall body awareness.

Information: This course does not use reformers and is primarily mat based.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

FAW 136 Stretch and Tone

1 cr. hrs. 2 periods (2 lab)

Muscular strength, endurance, and flexibility exercises designed to improve total body fitness with exercises generally set to music. Includes personal safety and preparation, personal fitness assessment and activity modifications, and techniques and considerations for exercise.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course includes some cardiovascular challenge but primary emphasis is on local muscular development (strength and flexibility) and assessment of personal fitness.

Offered: Fall, Spring, Summer.

FAW 138F1 Yoga I

1 cr. hrs. 2 periods (2 lab)

Introduction to stress reduction through yoga. Includes key components of yoga, essential movements and postures, mind-body practice, and personalizing one's practice.

Information: May be taken three times for a maximum of three hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: There are many styles of yoga and the specific philosophy offered in a given section will reflect that of the instructor; however, this course is gentle to moderate intensity.

Offered: Fall, Spring, Summer.

FAW 138F2 Yoga II

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 138F1. Includes key components of yoga, essential and complex movements and postures, mind-body practice, and personalizing one's practice.

Prerequisite(s): FAW 138F1.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is designed for students who have begun to establish a personal home practice and involves a deepening of the foundations established in Yoga I with more challenging postures, breathing techniques, length of sequences of skills, meditation, and philosophy.

Information: There are many styles of yoga and the specific philosophy offered in a given section will reflect that of the instructor and may differ slightly from other Yoga II instructors.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

FAW 148F1 Golf I

1 cr. hrs. 2 periods (2 lab)

Fundamentals of golf intended for the novice or player with limited experience. Includes emphasis on grips, stance, swing, shot selection, putting, rules, and etiquette of the game. Also includes key components of each shot, essentials for game play, and game management.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: A required range and/or course fee will be payable to the golf course.

Offered: Fall, Spring.

FAW 148F2 Golf II

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 148F1. Includes review of the fundamentals, key components of each shot, essentials for game play, and game management.

Prerequisite(s): FAW 148F1.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: A required range and/or course fee will be payable to the golf course.

Information: This course is intended for golfers with some experience or who play regularly and wish to refine physical skills and mental strategies to improve performance.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

FAW 155F1 Tennis I

1 cr. hrs. 2 periods (2 lab)

Fundamentals of tennis intended for the novice or player with limited experience. Includes key components of tennis, fundamental stroke development, and game management.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is intended for skill development and recreational play.

Offered: Fall, Spring.

FAW 155F2 Tennis II

1 cr. hrs. 2 periods (2 lab)

Continuation of FAW 155F1. Includes review of the key components of tennis, fundamental strokes, shot variations, and game management.

Prerequisite(s): FAW 155F1.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: This course is intended for players with some playing experience who wish to refine physical skills and mental strategies to improve performance.

Information: Recreational competitive play with more emphasis on game strategy is stressed.

Information: Prerequisite(s) may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

FAW 157F1 Aikido

1 cr. hrs. 2 periods (2 lab)

Introduction to the fundamentals of Aikido. Includes key components of Aikido, physical and mental preparation, ukemi and basic stances, neutralizing attacks, and budo implements.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FAW 163 Self Defense for Women

1 cr. hrs. 2 periods (2 lab)

Introduction to the mental attitudes and physical skills needed to defend oneself against an attack. Includes knowing your surroundings, basic safety location techniques, and defensive physical skills.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FAW 165 T'ai-chi Chuan

1 cr. hrs. 2 periods (2 lab)

Fundamentals of T'ai-chi Chuan, a form of martial arts. Includes an introduction, principles, T'ai-chi for a healthier lifestyle, solo exercises, and self defense.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FAW 167 Baseball

1 cr. hrs. 2 periods (2 lab)

Fundamental baseball skills for the recreational player. Includes key components of baseball, individual skills, and team skills.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Summer.

FAW 168 Basketball

1 cr. hrs. 2 periods (2 lab)

Fundamental basketball skills for the recreational player. Includes key components of basketball, individual skills, and team skills.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

FAW 170 Soccer

1 cr. hrs. 2 periods (2 lab)

Fundamental soccer skills for the recreational player. Includes key components of soccer, individual skills, and team skills.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

FAW 173 Volleyball

1 cr. hrs. 2 periods (2 lab)

Fundamental volleyball skills for the recreational player. Includes offensive and defensive systems and strategies, conditioning, and game play.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

FAW 182 Healthy Living and Wellness

3 cr. hrs. 3 periods (3 lec.)

Promotion of self-awareness of our daily lifestyle choices which impact our health and well-being. Includes dynamic alignment training, assessment training, wellness model, nutrition, somatic training, relaxation techniques, and self-care techniques.

Offered: Spring.

FAW 183 Lifestyle Wellness Coaching

2 cr. hrs. 2 periods (2 lec.)

Introduction to lifestyle wellness coaching and developing productive coaching techniques. Includes background and core ingredients of coaching, paths of change, flow model of coaching, setting the foundations for effective coaching, and the coaching relationship. Also includes the art of listening, the power of questioning, direct communication, awareness and action, and building enduring futures.

Offered: Spring.

FAW 184 Health, Wellness, and Physical Activity

3 cr. hrs. 3 periods (3 lec.)

Development of skills for personal lifestyle changes that promote health, wellness, and fitness over a lifetime. Includes physical activity, special considerations, nutrition and body composition, and stress and health.

Offered: Fall.

Food Science and Nutrition

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

FSN 127HC Human Nutrition and Biology: Honors

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles of nutrition presented in the context of human biology. Includes chemistry, digestion, absorption, and metabolism of nutrients. Also includes biological and nutritional perspectives on various health issues such as cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis, including genetic and epigenetic effects. Also covers analysis of scientific studies relating to nutrition. Also includes additional Honors content.

Information: Same as BIO 127HC. Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

Honors Content: Intensive research using the highest standards and best practices for the discipline; a significant number/variety of readings of both primary and secondary sources; a "publishable quality", peer reviewed paper or project in format appropriate for this discipline; and presentation of research, in class or to a wider audience.

Offered: Fall, Spring.

FSN 127IN Human Nutrition and Biology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Principles of nutrition presented in the context of human biology. Includes chemistry, digestion, absorption, and metabolism of nutrients. Also includes biological and nutritional perspectives on various health issues such as cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis, including genetic and epigenetic effects. Also covers analysis of scientific studies relating to nutrition.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously. Same as BIO 127IN.

Offered: Fall, Spring, Summer.

FSN 154 Nutrition

3 cr. hrs. 3 periods (3 lec.)

Examination of nutrients and their use by the body for growth and development. Includes maintenance of health through proper diet.

Information: Same as SSE 154.

Offered: Fall, Spring, Summer.

French

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

FRE 101 Elementary French I

4 cr. hrs. 4 periods (4 lec.)

Introduction to French. Includes basic listening, reading, and writing skills and cultural and geographic awareness.

Offered: Fall, Spring.

FRE 102 Elementary French II

4 cr. hrs. 4 periods (4 lec.)

Continuation of FRE 101. Includes increased proficiency in pronunciation, communication, and basic grammar. Also includes French cultural traditions.

Prerequisite(s): FRE 101.

Offered: Fall, Spring.

FRE 201 Intermediate French I

4 cr. hrs. 4 periods (4 lec.)

Continuation of FRE 102. Includes an intensive review of pronunciation, communication, and advanced grammar. Also includes French cultural traditions.

Prerequisite(s): FRE 102.

Information: Prerequisite(s) may be waived with two years of high school French.

Information: This course will be conducted primarily in French.

Offered: Fall.

FRE 202 Intermediate French II

4 cr. hrs. 4 periods (4 lec.)

Continuation of FRE 201. Includes an intensive review of pronunciation, communication, and advanced grammar. Also includes French cultural traditions.

Prerequisite(s): FRE 201.

Information: This course will be conducted primarily in French.

Offered: Spring.

FRE 296 Independent Study in French

1-4 cr. hrs. 1-4 periods (1-4 lec.)

Independent study in French literature, grammar, or special projects under the supervision of an instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Game Design

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GAM 101 Game Design I

4 cr. hrs. 4 periods (4 lec.)

Textual analysis of game play. Includes history of games, defining play, use of rules, impact of games on culture, psychological impact of games, and working in the game industry.

Offered: Fall, Spring.

GAM 102 Game Design II

4 cr. hrs. 5 periods (3 lec., 2 lab)

Continuation of GAM 101. Includes the role of the game designer, structure of the game, formal and dramatic elements of the game, game play fun, and storyboard development.

Prerequisite(s): GAM 101.

Offered: Fall.

GAM 120 Introduction to Game Programming

4 cr. hrs. 5 periods (3 lec., 2 lab)

Introduction to game engine programming. Includes Unity 3D game engine, JavaScript language features, input interaction, object-oriented JavaScript and ActionScript features, image maps, particle engine, and artificial intelligence techniques.

Prerequisite(s): GAM 101.

Recommendation: Previous or concurrent enrollment in MAT 145 (preferred) or MAT 142 (or higher).

Offered: Spring.

GAM 150 Game Programming I

4 cr. hrs. 5 periods (3 lec., 2 lab)

Basic concepts of game programming using managed Direct X and C. Includes getting started with Direct 3D, Direct 3D devices, rendering, meshes, and creating a game.

Prerequisite(s): CIS142.

Offered: Spring.

GAM 151 Game Programming II

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of GAM 150. Intermediate concepts of game programming using managed Direct X and C. Includes graphic concepts, High Level Shader, sound, and user input.

Prerequisite(s): GAM 150.

Offered: Fall.

GAM 201 Game Design III

4 cr. hrs. 5 periods (3 lec., 2 lab)

Continuation of GAM 102. Includes conceptualizing a game; prototyping; playtesting; functionality, completeness, and balance, controls and interface; design team; and storyboarding.

Prerequisite(s): GAM 102 and 120.

Offered: Fall.

GAM 218 Game Design Portfolio Capstone

4 cr. hrs. 5 periods (3 lec., 2 lab)

Production of a professional quality game design portfolio with a focus on a comprehensive capstone project. Includes production of a digital art portfolio, development of a game trailer, playable prototype, project management, current digital arts tools and processes, resumes and interviews, and presentation of a portfolio.

Prerequisite(s): GAM 201.

Offered: Spring.

GAM 296 Independent Study in Game Design

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed projects in game programming at the advanced level. Includes defining a project, tool and medium, conceptualize and execute a project, professional environment, and completing and critiquing the project.

Recommendation: Completion of CIS 142, CIS 278 and GAM 150 is highly recommended before enrolling in this course.

Information: May be taken four times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

Gender and Women's Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GWS 100 Introduction to Feminist Studies

3 cr. hrs. 3 periods (3 lec.)

Interdisciplinary survey and analysis of women's issues in structured inequalities and globalization. Includes feminist studies: study of gender, culture, and society; theoretical approaches to gender; learning gender socialization; contemporary feminist issues: socialization, work, and family; body and health issues; gender issues and intimacy; gender and the economy; gender, politics, government, and the military; gender, education, creativity, and language; and gender and spirituality.

Offered: Fall.

GWS 201 La Chicana

3 cr. hrs. 3 periods (3 lec.)

Interdisciplinary analysis of Chicanas/Mexicanas' status in the United States. Includes Chicana/Mexicana scholarship and Social Justice Movements, and Chicana/Mexicana feminism in the Southwest, Chicana/Mexicana community empowerment, Chicanas/Mexicanas on the U.S.-Mexico border.

Information: Same as MAS 201.

Offered: May not be offered this year, check class schedule.

GWS 202 Sexuality, Gender and Culture

3 cr. hrs. 3 periods (3 lec.)

Anthropological examination of gender identity, roles, relations, and variation. Includes theories and methods of the anthropology of sex and gender, historical origins and development of the sub-discipline, and sex, gender and sexuality in cross-cultural, ethnographic perspective. Also includes selected case studies and cross-cultural frameworks for analysis.

Information: same as ANT 202.

Offered: Fall.

GWS 280 Feminist Research Methods

3 cr. hrs. 3 periods (3 lec.)

Introduces research methods applied in contemporary feminist research. Includes introduction to feminist research, research methods, methodologies, and epistemology, feminist construction of knowledge, feminist research as Theory in Action, qualitative research methods/cross-cultural approaches, feminist research issues of power, academic visibility, empowerment, ethics, social justice and agency, and implications of feminist research.

Offered: May not be offered this year, check class schedule.

General Technical Writing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GTW 101 Writing for Trades and Technical Occupations

3 cr. hrs. 3 periods (3 lec.)

Applied technical reading and writing components necessary for trade and industrial occupations. Includes review of grammar; spelling and sentence building basics; reading trade and technical texts critically; and practical application of writing including writing for clarity, accuracy and professionalism as they relate to job functions, occupational requirements and effective communications across trades.

Prerequisite(s): WRT 070 or 075 with a C or better, or required score on the writing assessment test for WRT 090.

Offered: May not be offered this year, check class schedule.

General Technologies Mathematics

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GTM 105 Applied Technical Mathematics

3 cr. hrs. 3 periods (3 lec.)

Applied geometry and trigonometry operations. Includes review of basic math operations, review of pre-algebra, elements of geometry, plane trigonometry, and practical applications.

Prerequisite(s): MAT 086 or completion of module 15 in MAT 089 or satisfactory score on the mathematics assessment test.

Offered: Fall, Spring.

GTM 105V Applied Technical Mathematics for Aviation

3 cr. hrs. 3 periods (3 lec.)

Applied geometry and trigonometry operations. Includes review of basic math operations, review of pre-algebra, elements of geometry, plane trigonometry, and aviation practical applications.

Prerequisite(s): MAT 086 or completion of Module 15 in MAT 089 or satisfactory score on the mathematics assessment test.

Offered: May not be offered this year, check class schedule.

Geography

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GEO 101 Physical Geography: Weather and Climate

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the physical elements. Includes earth-sun relationships, atmospheric processes, global heat balance, global pressure and temperature patterns, annual weather and climate patterns, weather and air pollution, urban influences on weather and climate, and climatic change. Also includes weather and people, wave cyclones of middle latitudes, weather maps and weather prediction, basic ecological principles, and energy.

Offered: Fall, Spring.

GEO 102 Physical Geography: Land Forms and Oceans

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the surface of the earth and the forces of nature that shape it. Includes continental drift and plate tectonics, geomorphic processes, the hydrologic cycle, pollution esthetics of landforms, recreation and other utilization, and map reading and interpretation.

Offered: Fall, Spring.

GEO 103 Cultural Geography

3 cr. hrs. 3 periods (3 lec.)

Examination of the human world from a geographic perspective. Includes geography as a discipline, culture and human geography, the changing Earth, descriptive fundamentals of population geography, migration, and geography of language and religion. Also includes rural traditions and livelihoods, urban geography, economic changes and industrialization, as well as political and medical geography.

Offered: Fall, Spring, Summer.

GEO 104 World Regional Geography

3 cr. hrs. 3 periods (3 lec.)

Geographic concepts and information organized by conventional regions and nations. Includes geographic perspectives, physical environment, regions and cultures, realms and population, and the regional framework.

Offered: Fall, Spring.

GEO 250 Introduction to Medical Geography

3 cr. hrs. 3 periods (3 lec.)

Introduction to the spatial aspects of health and disease. Includes disease mapping, etiology, statistical associations, health care inequities, and spatial distribution of health care facilities.

Offered: May not be offered this year, check class schedule.

GEO 265 Mapping Concepts

1 cr. hrs. 1 periods (1 lec.)

Introduction to the practical use of maps. Includes map basics and attributes, scales and measurements, direction, geographic coordinate systems, relief and contours, and aerial photography.

Information: Same as ANT/ARC/GIS 265.

Offered: Fall.

GEO 267 Introduction to Geographic Information Systems

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the technology of geographic information systems. Includes the evolution of technology, system components, database concepts, applications, and implementation.

Prerequisite(s): ANT/ARC/GEO/GIS 265 or concurrent enrollment.

Information: Basic computer skills are required before enrolling in this course.

Information: Same as ANT/ARC/GIS 267.

Offered: Fall.

GEO 284 Computer Cartography and CAD

3 cr. hrs. 5 periods (2 lec., 3 lab)

Cartographic techniques and hardware for computer generation of maps. Includes an introduction to methods and techniques, and application projects.

Prerequisite(s): ANT/ARC/GEO/GIS 265 or concurrent enrollment.

Information: Same as ANT/ARC/GIS 284.

Offered: Spring.

GEO 296 Independent Studies in Geography

.5-6 cr. hrs. 1-12 periods (.25-3 lec., .75-9 lab)

Students independently continue their studies in Geography under the supervision of a faculty member.

Information: Consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

Geology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GLG 101IN Physical Geology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the physical aspects of the Earth's crust. Includes scientific measurements, maps, and the scientific method; hands-on identification and assessment of rocks and minerals; and introduction to geology, earth composition, surface processes, subsurface processes, investigative tools, geologic structures, geologic resources, and earth history. Also includes a field trip to observe and interpret geologic processes in a natural setting.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

GLG 102IN Historical Geology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the physical, chemical, and biological history of the Earth, including hands-on identification and classification of major fossil groups according to their phyla, ages, and ecosystems. Includes scientific measurements, maps, scientific method, history of historical geology (Uniformitarianism, Catastrophism); identification and interpretation of rocks and sedimentary textures, environments, and structures; geologic time, the evolution of life, planetary evolution, plate tectonics, evolution of the Earth's surface (including the physical environments, resources, and life of the Precambrian, Paleozoic, Mesozoic, and Cenozoic); and human evolution and human impacts. Also includes a field trip to observe rocks and structures and interpret geologic history and fossils in a natural outdoor setting.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

GLG 110IN Geological Disasters and Environmental Geology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Survey of geologic processes with respect to the interactions between humans and the Earth. Includes identifying geologic hazards, understanding the challenges of predicting and preventing natural disasters, and mitigating and preventing pollution; the relationship of natural resources to population distribution, resource usage and impacts, and waste management and pollution prevention; and the hydrologic cycle, plate tectonics, volcanoes, earthquakes, and catastrophic events, such as floods, fires, landslides, earthquakes, and volcanic action. Also includes water quality, resource availability, toxic and radioactive waste disposal problems and proposed solutions, global climate change, sea level rise, greenhouse gases, and extreme weather. Also includes a field trip to investigate local geologic hazards.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

GLG 296 Independent Studies in Geology

.5-3 cr. hrs. 1.5-9 periods (1.5-9 lab)

Independent studies, projects, and/or laboratory exercises in geology. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Geospatial Information Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GIS 181 Global Positioning Systems Basics

1 cr. hrs. 1 periods (1 lec.)

Introduction to the use of Global Positioning Systems (GPS) receivers in a field setting for non-technical applications. Includes GPS vocabulary, operation, field data collection and data transfer. Also includes using equipment, resources and facilities of the Archaeology Centre.

Information: Same as ANT/ARC 181.

Offered: Fall.

GIS 265 Mapping Concepts

1 cr. hrs. 1 periods (1 lec.)

Introduction to the practical use of maps. Includes map basics and attributes, scales and measurements, direction, geographic coordinate systems, relief and contours, and aerial photography.

Information: Same as ANT/ARC/GEO 265.

Offered: Fall.

GIS 267 Introduction to Geographic Information Systems

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the technology of geographic information systems (GIS). Includes the evolution of the technology, applications, benefits and costs, characteristics of geographic data, data types, database concepts, and operations and functionality. Also includes hardware, software, implementation, legal issues, and the future of geographic information systems.

Prerequisite(s): ANT/ARC/GEO/GIS 265 or concurrent enrollment.

Information: Prerequisite may be waived with consent of instructor. Basic computer skills are required before enrolling in this course. Same as ANT/ARC/GEO 267.

Offered: Fall.

GIS 281 Global Positioning Systems

1 cr. hrs. 3 periods (3 lab)

Introduction to the technical use of Global Positioning Systems (GPS) receivers in a field setting. Includes review of GPS vocabulary and concepts, comprehensive initialization of handheld GPS receivers, data collection with handheld GPS, the use of mapping software with data from handheld GPS, concepts of differential GPS, operation of and field data collection with static and RTK precision GPS, use of software packages for differential correction and map production. Also includes using equipment, resources and facilities of the Archaeology Centre.

Prerequisite(s): ANT/ARC/GIS 181

Information: Prerequisite(s) may be waived with equivalent experience or consent of instructor. Same as ANT/ARC 281

Offered: Spring.

GIS 284 Computer Cartography and CAD

3 cr. hrs. 5 periods (2 lec., 3 lab)

Cartographic techniques and hardware for computer generation of maps. Includes an introduction to methods and techniques, and application projects.

Prerequisite(s): ANT/ARC/GEO/GIS 265 or concurrent enrollment.

Information: Same as ANT/ARC/GEO 284.

Offered: Spring.

GIS 286 Electronic and Digital Field Mapping

4 cr. hrs. 8 periods (2 lec., 6 lab)

Overview of the creation of electronic and digital maps in a field setting. Includes an introduction to instrument operation, field data, producing maps, and computer applications.

Prerequisite(s): ANT/ARC 265 and ANT/ARC/GIS 281.

Recommendation: Consult instructor for alternative prerequisite(s).

Information: Same as ANT/ARC 286.

Offered: May not be offered this year, check class schedule.

German

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GER 101 Elementary German I

4 cr. hrs. 4 periods (4 lec.)

Introduction to the German language in developing proficiency in listening to, speaking, reading, and writing. Includes nouns and pronouns pronunciation, communication, basic grammar, and introduction to German culture.

Offered: Fall, Spring.

GER 102 Elementary German II

4 cr. hrs. 4 periods (4 lec.)

Continuation of GER 101. Includes increased proficiency in listening to, speaking, reading, and writing the German language. Also includes pronunciation, communication, intermediate grammar, and German cultural traditions.

Prerequisite(s): GER 101.

Information: One year of high school German may fulfill prerequisite.

Offered: Fall, Spring.

GER 201 Intermediate German I

4 cr. hrs. 4 periods (4 lec.)

Continuation of GER 102. Includes an intensive review of grammar, pronunciation, communication, advanced grammar, readings of selected authors, and German culture.

Prerequisite(s): GER 102.

Information: Two years of high school German may fulfill prerequisite.

Offered: Fall, Spring.

GER 202 Intermediate German II

4 cr. hrs. 4 periods (4 lec.)

Continuation of GER 201. Includes pronunciation, communication, advanced grammar, and German culture.

Prerequisite(s): GER 201.

Offered: Fall, Spring.

GER 296 Independent Study in German

1-4 cr. hrs. 3-12 periods (3-12 lab)

Independent study in German literature, or special projects under the supervision of an instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

Global Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

GLS 109 Introduction to Global Studies

3 cr. hrs. 3 periods (3 lec.)

Survey of modern globalization. Includes the study of dimensions of globalization, global organizations, global politics, cultural globalization, the global economy, global environmental independence, and global social movements and counter movements. Also includes global interactions and their current effects on the restructuring of cultural, political, and economic institutions worldwide.

Information: Same as ANT 109 and SOC 109.

Offered: May not be offered this year, check class schedule.

Health Care

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

HCA 103 Orientation to Pharmacology

3 cr. hrs. 3 periods (3 lec.)

An overview of pharmacology for allied health professionals. Includes pharmacological principles and the chemical, generic, and trade names for drugs. Also includes drug measurement and calculations, prescription preparation, administration, and Federal and Arizona regulations.

Offered: May not be offered this year, check class schedule.

HCA 119 Orientation to Human Anatomy and Physiology

2 cr. hrs. 2 periods (2 lec.)

Orientation to basic anatomy and physiology appropriate for the health care setting. Includes the application of medical terminology for the health care environment.

Offered: May not be offered this year, check class schedule.

HCA 152 Advanced Cardiac Life Support

2 cr. hrs. 2 periods (2 lec.)

Evaluation and management of patients in pre-arrest and cardiac arrest as required by guidelines of the American Heart Association. Includes advanced cardiac life support (ACLS) overview, review of prerequisite material, case overview, discussion, and demonstration of appropriate treatment for various cardiac emergencies, and practical examination of knowledge and skills.

Information: Provides the didactic portion and the competency skill stations required by the American Heart Associate (AHA) course in Advanced Cardiac Life Support (ACLS). Healthcare provider basic life support (BLS) card is required at the beginning of the class. This course is designed for students enrolled in the PCC Respiratory Care program. Students must have completed the first year of the Respiratory Care program before enrolling in this course.

Offered: May not be offered this year, check class schedule.

HCA 154 Introduction to Health Care Delivery

3 cr. hrs. 3 periods (3 lec.)

Overview of the health care field. Includes health care delivery systems, medical terminology, ethics and professionalism, patient rights and responsibilities; communication; basic patient assessment; and workplace and personal safety.

Offered: May not be offered this year, check class schedule.

Health Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

HED 136 Introduction to Health Sciences

3 cr. hrs. 3 periods (3 lec.)

Contemporary health-related issues for all dimensions of the individual. Includes understanding health for ourselves and others, a lifetime of wellness, responsible sexuality, and avoiding harmful habits.

Offered: May not be offered this year, check class schedule.

HED 140 First Aid and Cardiopulmonary Resuscitation

1 cr. hrs. 1 periods (1 lec.)

Theory and practice for treatment of infants, children, and adults. Includes standard first aid and cardiopulmonary resuscitation (CPR).

Offered: May not be offered this year, check class schedule.

Health Information Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

HIT 100 Introduction to Health Information Management

3 cr. hrs. 3 periods (3 lec.)

An overview of health care delivery systems and mechanisms in the U.S. Includes the medical model of healthcare and delivery in the U.S, public policy, professional roles, legal and regulatory issues, ancillary services, health record and payment systems including the Electronic Health Record (EHR) and computer systems. Also includes health reform initiatives in the U.S.

Offered: Fall.

HIT 101 Introduction to ICD Coding

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to principles and application of the International Classification of Diseases (ICD) coding system and the Healthcare Common Procedure Coding System (HCPCS). Includes overview of coding, introduction to ICD 9th Revision Clinical Modifications (9-CM), and ICD 10th Revision Clinical Modifications/Procedural Coding System (10-CM/PCS). Includes coding conventions, coding guidelines, hospital inpatient, outpatient and physician office coding and overview of HCPCS.

Recommendation: HIT 105.

Offered: Spring.

HIT 102 CPT Coding

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to principles and application of Current Procedural Terminology (CPT) Coding System. Includes overview of CPT and CPT coding. Also includes the following CPT sections: Anesthesia, Evaluation and Management, Medicine, Radiology, Surgery, and Pathology and Laboratory.

Recommendation: Completion of HIT 105 is recommended before enrolling in this course.

Offered: Spring.

HIT 105 Medical Terminology

3 cr. hrs. 3 periods (3 lec.)

Terminology used in the medical field. Includes word parts and forms, terms pertaining to the body as a whole, anatomy and structural organization of the body. Also includes terminology of body systems, organs and function including disease processes and symptoms, laboratory tests, clinical procedures and use of medical dictionaries and other resource materials for research and practice.

Offered: Fall.

HIT 108 Health Information Employment Policies

1 cr. hrs. 2.5 periods (.5 lec., 2 lab)

Prepares students for employment in Health Information Technology. Includes employer requirements for CPR training, employment resources, resume development, Privacy and Security, immunizations and the criminal background check.

Offered: Spring.

HIT 112 Health Insurance and Medical Billing

3 cr. hrs. 3 periods (3 lec.)

Overview and principles of the basics of health insurance and medical billing. Includes principles of health insurance and medical billing, health insurance contracts, claims process, insurance terminology, abbreviations, and symbols, diagnostic and procedural coding (with emphasis on medical terminology, anatomy and physiology), client eligibility and reimbursement processes, health care statistics, and supervision and management.

Prerequisite(s): HIT 101 and 102.

Recommendation: Completion of HIT 100 and 105 are recommended before enrolling in the course.

Offered: Fall.

HIT 125 Pathophysiology and Pharmacology for HIT

4 cr. hrs. 4 periods (4 lec.)

Principals of pharmacology and pathophysiology. Includes disease processes according to body system, causes, diagnosis and treatment with emphasis on drug actions and classifications. Includes pharmacotherapy and laboratory findings; basic concepts in pharmacology, pharmacokinetics, dosage calculations, and pharmacology as applied to disease and conditions distinct to each body system.

Offered: Fall.

HIT 150 Introduction to Health Management Information Systems

3 cr. hrs. 3 periods (3 lec.)

Introduction to Health Information Management systems (HIMS). Includes evolution of HIMS; networks, data collection, data sources, secondary data presentations, data quality, data sets and standards, principles and applications of secondary data sources, protected health information, database design and HIMS selection and implementation.

Offered: Spring.

HIT 165 Medical Office Procedures

3 cr. hrs. 4 periods (2 lec., 2 lab)

Services and procedures used in a medical office. Includes qualities of the office worker, healthcare industry, communications and human relations, telephone techniques, financial reports, word processing, administrative support and medical billing, filing, mail processing, content of medical health record and documentation, insurance and claims, and employment in a medical office/facility and the interview.

Recommendation: HIT 105.

Offered: May not be offered this year, check class schedule.

HIT 175 Health Information Statistics and Research

4 cr. hrs. 4 periods (4 lec.)

Principles of health information statistics and research. Includes a statistical approach to healthcare, sources of data collection, data sources and databases. Also includes health care research processes and strategies, project development, data collection, design and analysis, report structure and presentation.

Offered: Fall.

HIT 201 Advanced ICD Coding

3 cr. hrs. 4 periods (2 lec., 2 lab)

Advanced use of references, source documents, and computer software for diagnostic coding in health care settings for outpatient and inpatient hospital coding. Includes interpretation of ICD codes relative to inpatient and outpatient hospital reimbursement, analysis of inpatient and outpatient hospital source documents in a variety of settings to determine proper coding, prospective payment systems, auditing and analysis of patient charts, application of inpatient and outpatient diagnostic codes in the: integumentary, musculoskeletal, respiratory, cardiovascular, digestive, urinary, female and male reproductive, endocrine and nervous systems. Also includes codes for interventional radiology services; development of compliance program for enforcement of regulatory and governmental rules; application of confidentiality and privacy policies and procedures; abstracting data; and computer applications.

Prerequisite(s): HIT 102.

Offered: Spring.

HIT 202 Advanced Classification Systems Applications

3 cr. hrs. 5 periods (2 lec., 3 lab)

Advanced application and demonstration of coding skills. Includes use of references and source documents for International Classification of Diseases Clinical Modification and Procedural Coding System (ICD-CM and PCS) and Current Procedural Terminology (CPT) coding and evaluation, Uniform Hospital Discharge Data Set (UHDDS), diagnostic-related group (DRG) guidelines and regulations.

Prerequisite(s): HIT 101 and HIT 102.

Offered: Spring.

HIT 210 Medical Quality Assurance and Supervision

3 cr. hrs. 3 periods (3 lec.)

Principles of medical quality assurance and supervision. Includes health information management skills and human resource roles and responsibilities. Also includes HIPAA regulations, accreditation and licensure, organizational models, technologies and planning for a professional career in health care.

Prerequisite(s): HIT 100 and 105.

Offered: Spring.

HIT 211 Medicolegal Aspects in Health Information Management

3 cr. hrs. 3 periods (3 lec.)

Introduction to regulatory requirements in health care and application of general principles of law in health information management and legal proceedings. Includes American legal system, court systems and legal procedures, principles of liability, patient record requirements, access to health information, patient rights and confidentiality, judicial process of health information, specialized patient records, risk management and quality management, HIV information, computerized patient records, health care fraud and abuse, and ethics.

Prerequisite(s): HIT 100 and 105.

Offered: Fall.

HIT 225 Advanced Health Management Information Systems

3 cr. hrs. 5 periods (2 lec., 3 lab)

Applied concepts in Health Information Management (HIM) Systems. Includes healthcare legislation and standards, federal regulations, electronic health record system implementation and applications, roles and responsibilities of health care providers, information security and use of real world software applications.

Offered: Fall.

HIT 290 Health Information Technology Internship

3 cr. hrs. 11 periods (1 lec., 10 lab)

Volunteer Health Information Technology field experience at an approved work site. Includes communications, positive work attitudes, ethics, progress review, health information systems, professional development, employment strategies, and final evaluation within a classroom seminar setting.

Prerequisite(s): HIT 105 and permission of the instructor.

Information: Designed for students in their final semester of course work in the Health Information Technology option.

Offered: May not be offered this year, check class schedule.

History

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

HIS 101 Introduction to Western Civilization I

3 cr. hrs. 3 periods (3 lec.)

Pre-history to the Wars of Religion, a period extending from 10,000 BCE to 1648 CE. Includes transition from pre-historic to the historic period, Greco-Roman world, Early, Central, and Late Middle Ages, and Renaissance and Reformation.

Offered: Fall, Spring, Summer.

HIS 101HC Introduction to Western Civilization I: Honors

3 cr. hrs. 3 periods (3 lec.)

Pre-history to the Wars of Religion, a period extending from 10,000 BCE to 1648 CE. Includes transition from pre-historic to the historic period, Greco-Roman world, Early, Central, and Late Middle Ages, and Renaissance and Reformation. Also includes Honors content.

Prerequisite(s): Must qualify for Honors program.

Information: Faculty or Advisor approval is required before enrolling in this course.

Honors Content: Intensive research using the highest standards and best practices for the discipline; a significant number/variety of readings of both primary and secondary sources; a publishable quality peer reviewed paper or project in a format appropriate for the discipline; and presentation of research, in class or to a wider audience.

Offered: Fall.

HIS 102 Introduction to Western Civilization II

3 cr. hrs. 3 periods (3 lec.)

History of the origins and development of the modern Western world. Includes Wars of Religion, the Enlightenment, the Eighteenth century, the Nineteenth century, and the Twentieth century.

Offered: Fall, Spring, Summer.

HIS 102HC Introduction to Western Civilization II: Honors

3 cr. hrs. 3 periods (3 lec.)

History of the origins and development of the modern Western world. Includes Wars of Religion, the Enlightenment, the Eighteenth century, the Nineteenth century, and the Twentieth century. Also includes Honors content.

Prerequisite(s): Must qualify for Honors program.

Information: Faculty or Advisory approval is required before enrolling in this course.

Honors Content: Intensive research using the highest standards and best practices for the discipline; a significant number/variety of readings of both primary and secondary sources; a publishable quality peer reviewed paper or project in a format appropriate for the discipline; and presentation of research, in class or to a wider audience.

Offered: May not be offered this year, check class schedule.

HIS 105 Introduction to Chicano Studies

3 cr. hrs. 3 periods (3 lec.)

Chicano(a) life in historical context since 1848. Includes defining Chicano(a) ideologies and realities from an interdisciplinary perspective. Also includes Chicano(a) history and culture within the world systems of Native Americans, New Spain, Mexico and the United States.

Offered: Fall, Spring.

HIS 113 Chinese Civilization

3 cr. hrs. 3 periods (3 lec.)

Introductory survey of the civilization of China from its origins to the present. Formative Period (prehistory - 221 B.C.), unification and expansion (221 B.C. - A.D. 221), period of disunity (222-588), flowering of Chinese culture (589-1279), impact of the Mongols on Chinese civilization (1280-1368), Ming Dynasty peace and prosperity (1368-1644), Qing Dynasty - The Manchu Conquest (1644-1911), Republican China (1912-1949), and People's Republic of China (1949-).

Offered: Spring.

HIS 114 Japanese Civilization

3 cr. hrs. 3 periods (3 lec.)

Introductory survey of the civilization of Japan from its origins to the present. Includes the Formative Period (prehistory-A.D. 250); influence of Chinese civilization on Japan (300-794); Heian Period - emergence of uniquely Japanese cultural forms (794-1185); Kamakura Shogunate - establishment of military government (1185-1336); Ashikaga Shogunate - civil war and the reunification of Japan (1336-1573); Tokugawa Period (1600-1867); Meiji Period (1868-1912); Taisho Period (1912-1925); Showa Period (1926-1989); and Heisei Period (1990-present).

Offered: Fall.

HIS 122 Tohono O'odham History and Culture

3 cr. hrs. 3 periods (3 lec.)

Survey of Tohono O'odham culture, historical development, and modern issues. Includes development of culture and world view, sources of Tohono O'odham history, role in economic and social development of Northwestern Mexico and Southwestern United States, and contemporary Tohono O'odham issues.

Information: Same as AIS 122.

Offered: Spring.

HIS 124 History and Culture of the Yaqui People

3 cr. hrs. 3 periods (3 lec.)

Survey of the cultural heritage of the Yaqui people and the history of their struggles to protect Yaqui land and customs. Includes Yaqui origins, pre-Columbian Yaqui society, oral traditions and world view, early Spanish contacts, Catholic influences, economic development, rebellions, resistance and leadership, and policies regarding Native Americans. Also includes the deportation and enslavement of the Yaqui from the 17th to the 20th centuries by the Spanish and American governments and the deportation of the Yaqui by the United States in the 1880's. Also examines acts of genocide and subjugation against the Yaqui in revolutionary Mexico, 20th century relocation and adaptation strategies of the Yaqui in the United States and the Yaqui culture of the 21st century.

Information: Same as AIS 124.

Offered: May not be offered this year, check class schedule.

HIS 127 History and Culture of the Mexican-American in the Southwest

3 cr. hrs. 3 periods (3 lec.)

Historical survey of Mexicano(a)/Chicano(a) people from their indigenous origins in Meso-America and the Gran Chichimeca to the present in the United States. Includes historical writings, movements north under Spain and Mexico, repression and resistance. Also covers the political, economic, religious and social movements of the 19th, 20th and early 21st centuries.

Information: Same as ANT 127.

Offered: Fall, Spring.

HIS 141 History of the United States I

3 cr. hrs. 3 periods (3 lec.)

Survey of the major developments in American history from the Columbian voyages to the Era of Reconstruction. Includes Colonial America, the Formative Years - 1776-1815, the Early National Period - 1815-1850, and the coming of the Civil War and its aftermath. Also includes the social, intellectual, and political aspects of early American life.

Offered: Fall, Spring, Summer.

HIS 141HC History of the United States I: Honors

3 cr. hrs. 3 periods (3 lec.)

Survey of the major developments in American history from the Columbian voyages to the Era of Reconstruction. Includes Colonial America, the Formative Years - 1776-1815, the Early National Period - 1815-1850, and the coming of the Civil War and its aftermath. Includes the social, intellectual, and political aspects of early American life. Also includes Honors content.

Prerequisite(s): Must qualify for Honors program.

Information: Faculty or Advisor approval is required before enrolling in this course.

Honors Content: Intensive research using the highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; a publishable quality peer reviewed paper or project in a format appropriate for the discipline: presentation of research, in class or to a wider audience.

Offered: May not be offered this year, check class schedule.

HIS 142 History of the United States II

3 cr. hrs. 3 periods (3 lec.)

Survey of the major developments in American history from era of Reconstruction to the present. Includes the era of Reconstruction, the emergence of modern America, the Early 20th Century, and America as a world power. Also includes the social, intellectual, and political aspects of contemporary American life.

Offered: Fall, Spring, Summer.

HIS 142HC History of the United States II: Honors

3 cr. hrs. 3 periods (3 lec.)

Survey of the major developments in American history from Era of Reconstruction to the present. Includes the era of Reconstruction, the emergence of modern America, the Early 20th Century, and America as a world power. Also includes the social, intellectual, and political aspects of contemporary American life. Also includes Honors content.

Prerequisite(s): Must qualify for Honors program.

Information: Faculty or Advisor approval is required before enrolling in this course. *Honors Content:* Intensive research using the highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; a publishable quality peer reviewed paper or project in a format appropriate for the discipline: presentation of research, in class or to a wider audience.

Offered: May not be offered this year, check class schedule.

HIS 147 History of Arizona

3 cr. hrs. 3 periods (3 lec.)

Survey of the major developments in the history of Arizona. Includes the Pre-Columbian period through the Spanish era, the Mexican Republic, the years as a U.S. territory, and the time since statehood to the present. Also includes the contributions of the various peoples who have formed the unique cultural and ethnic fabric of this area.

Offered: Fall, Spring, Summer.

HIS 148 History of Indians of North America

3 cr. hrs. 3 periods (3 lec.)

History of the cultural development of Native Americans of North America and the interrelations of cultures. Includes Native American origins, early economic and social development, Europeans, eras in Native American history, modern leadership, and research studies.

Information: Same as AIS/ANT 148.

Offered: Spring.

HIS 150 African-American History and People

3 cr. hrs. 3 periods (3 lec.)

African-American history from the colonial period to the present. Includes identity, double consciousness, culture and arts, and political protest.

Offered: May not be offered this year, check class schedule.

HIS 160 Latin America Before Independence

3 cr. hrs. 3 periods (3 lec.)

Survey of the history and people of Latin America from indigenous origins to independence. Includes theory and geography, indigenous Latin America, European background, colonial economy and society, and resistance and movements for independence in Latin America.

Recommendation: Placement on PCC assessment tests above REA 091 and into WRT 101.

Information: Course meets the AGEC Special Requirements of "I" (Intensive Writing), "G" (Global Awareness) and "C" (Cultural Diversity). Students will have writing assignments that require college level skills, and writing quality will be graded.

Offered: Fall.

HIS 161 Modern Latin America

3 cr. hrs. 3 periods (3 lec.)

Survey of the history and people of Latin America from Independence to the present. Includes Post-Colonial consolidation, early Twentieth Century, United States - Latin America relations, guerrilla movements and reaction and Latin America today.

Recommendation: HIS 160, and placement on PCC assessment exams above REA 091 and into WRT 101.

Information: Course meets the AGEC Special Requirements of "I" (Intensive Writing), "G" (Global Awareness), and "C" (Cultural Diversity). Students will have writing assignments that require college level skills, and writing quality will be graded.

Offered: Spring.

HIS 180 Women in Western History

3 cr. hrs. 3 periods (3 lec.)

Survey of women's history in the Western World from Antiquity to the Modern Age. Includes Ancient Near Eastern civilizations, women of the Classical World, medieval women, reformation and revolution in early modern and progressive eras, women and war in the Western World, and postwar social developments and movements.

Offered: May not be offered this year, check class schedule.

HIS 232 The Politics and History of Immigration

3 cr. hrs. 3 periods (3 lec.)

Examines the politics of immigration in the United States and the phenomenon of emigration in a global context. Includes analyses of the history of immigration as a result of the country's political economy and its evolution and the role of immigration in the socio-political and economic development of the nation.

Information: Same as POS 232.

Offered: May not be offered this year, check class schedule.

HIS 240 Medieval History

3 cr. hrs. 3 periods (3 lec.)

A survey of the medieval period of Western Civilization from A.D. 410-1453. Includes an examination of the major political, military, social, economic, religious, artistic, and intellectual events of the Middle Ages.

Offered: Fall.

HIS 245 Abraham Lincoln and the American Civil War

3 cr. hrs. 3 periods (3 lec.)

Overview of the American Civil War. Includes a survey of conditions that led to the American Civil War; an examination of the major political, military, social and economic events of the Civil War; and a treatment of the impact of the Civil War on the United States and the impact of the Civil War on the United States and the Confederate States of America. Also includes an emphasis on the political career of Abraham Lincoln and the destruction of slavery.

Offered: May not be offered this year, check class schedule.

HIS 254 History of Women in the United States: The 20th Century

3 cr. hrs. 3 periods (3 lec.)

Survey of American women's history from 1900 to the present. Includes early 20th century gender, race/ethnicity, class formation, women and war, civil rights, feminist, and other social movements, and feminism's change since the 1970's.

Offered: Fall.

HIS 274 The Holocaust

3 cr. hrs. 3 periods (3 lec.)

Examines the causes, events and legacies of the Nazi assault on humanity. Includes the history of hate against the Jews in Europe, historical antecedents and preconditions of the Holocaust, the Third Reich and the creation of a racial state, the "Final Solution" and the aftermath.

Offered: Fall, Spring, Summer.

HIS 280 History of the World Wars

3 cr. hrs. 3 periods (3 lec.)

Survey of the two world wars of the twentieth century. Includes prelude to war, outbreak of the Great War, war of two fronts, inter-war years, World War II, and post war world. Also includes changes created in society, government, and international relations as a result of the two wars.

Offered: Spring.

HIS 281 Cold War: Soviet Confrontations and Vietnam

3 cr. hrs. 3 periods (3 lec.)

Causes and effects of US-Soviet confrontations from WW II to 1994. Includes origins of the Cold War from WW II, initial Soviet probes, challenges in the Far East, probes and rhetoric, Soviet globalism, Vietnam, period of detente, end of detente, new challenge to Soviet Expansionism, and new vision and new world order.

Information: This is a continuation course to HIS 280 History of the World Wars; however, HIS 280 is not a prerequisite. This course will require a college level reading ability.

Offered: May not be offered this year, check class schedule.

HIS 296 Independent Study in History

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Independent study in history. Includes topic identification, research plan, data gathering, and presentation of findings.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Histotechnology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

HTP 101 Histology

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to the microscopy of human cells and tissues. Includes histology, cytoplasm, nucleus, extracellular matrix, epithelia, connective tissues, muscle, and systems of the human body. Also includes regeneration, and molecular mechanisms of cellular identity.

Prerequisite(s): BIO 156IN or appropriate score on placement exam, CHM 130IN or higher, and MAT 097 or higher.

Recommendation: CSA 100 prior to enrollment in course.

Information: Computer proficiency expected of students in Histotechnology program.

Offered: Fall.

HTP 105 Histotechniques I

4 cr. hrs. 8 periods (2 lec., 6 lab)

Introduction to the fundamental techniques of histology. Includes fixation, processing, instrumentation, safety, and routine staining.

Prerequisite(s): HTP 101.

Offered: Spring.

HTP 200 Histotechniques II

4 cr. hrs. 8 periods (2 lec., 6 lab)

Continuation of HTP 105. Introduction to the fundamental techniques of histology. Includes connective and muscle tissue, nerves, microorganisms, pigments, minerals, cytoplasmic granules, carbohydrates, and amyloid.

Prerequisite(s): HTP 105.

Offered: Fall.

HTP 201 Histotechniques III

4 cr. hrs. 6 periods (3 lec., 3 lab)

Continuation of HTP 200. Survey of special histotechniques. Includes immunohistochemistry, enzyme histochemistry, immunofluorescent staining, antigen detection, and cellular organelle staining. Also includes use of epitope tags in histochemistry, diagnostic immunohistochemistry, and microscopy.

Prerequisite(s): HTP 200.

Offered: Fall.

HTP 202 Histotechniques IV

3 cr. hrs. 3 periods (3 lec.)

Continuation of HTP 201. Preparation for the American Society for Clinical Pathologists (ASCP) Certification. Includes ASCP organization and testing. Also includes safety in the histology lab, fixation, processing, microtomy, nuclear and cytoplasmic staining, and special staining.

Prerequisite(s): HTP 201 and HTP 291 (or concurrent enrollment in HTP 291).

Offered: Fall.

HTP 291 Histotechnology Internship

1-5 cr. hrs. 3-15 periods (3-15 lab)

Supervised work experience in a clinical and research setting. Includes emphasis on the observation and enhancement of professional and management skills, team communication and interaction. Also includes the application of research principles, procedures, protocols, and regulations in the workplace. Student may rotate through a variety of clinical and research sites agreed upon by the instructor and student.

Prerequisite(s): HTP 101, 105, 200, 201, and 202, or concurrent enrollment in HTP 202.

Information: Consent of instructor is required before enrolling in this course. May be taken five times for a maximum of five credit hours.

Offered: Fall.

Honors Program

For courses numbered 098, 198, 298, see “Topic Courses” on page 281

HON 101 Honors Colloquium

3 cr. hrs. 3 periods (3 lec.)

An interdisciplinary course introducing honors students to scholarly research, writing, and conversation. Includes defining and debating contemporary issues in the arts, humanities, sciences, social sciences, business, technology, and/or math. Also includes opportunities for students to develop their critical thinking and creativity; to enhance their practices of research, critical reflection, argumentation, and collaboration; to identify and clarify “real world” issues; to improve their problem-solving capabilities using appropriate group interaction; and to explore their understandings of cultural diversity in local and global contexts.

Information: Students must be eligible for Honors courses based on placement tests, and have a 3.5 GPA or higher, and/or be a Pima Scholar before enrolling in this course.

Offered: Fall, Spring.

HON 210 College Honors Advisory Council

1 cr. hrs. 1 periods (1 lec.)

Student representatives to the College Honors Advisory Council (CHAC) attend CHAC meetings and participate in discussions and decision making; participate in Honors Program events and engagement activities, including local campus events; and take on leadership roles in the Honors Program, the Honors Club, PTK, and/or their local campuses.

Prerequisite(s): HON 101 or concurrent enrollment.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

HON 244 Honors Field Excursions

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Field excursions provide academic development through travel and study. Students study issues and ideas related to the arts, humanities, sciences, social sciences, businesses, technology, and/or math in real world settings. Excursions provide students with direct experience of domestic cultures and subcultures. Excursions may include a range of visits to domestic or foreign cultural and educational sites; to scientific or business locations; local field excursions; or attendance at conferences and meetings.

Recommendation: Consult instructor for prerequisite(s) and/or corequisite(s) specific to planned excursions.

Information: Must qualify for Honors program. Faculty or Advisor approval may be required. Depending on the nature of the excursion, there may be additional prerequisite(s) and/or corequisite(s). May require domestic or foreign travel expenses.

Offered: May not be offered this year, check class schedule.

HON 280 Advanced Honors Colloquium

1-3 cr. hrs. 1-3 periods (1-3 lec.)

In-depth interdisciplinary course enhancing honors students' scholarly research, writing, and conversation. Includes defining, discussing, and debating contemporary issues in the arts, humanities, sciences, social sciences, business, technology, and math. Also includes opportunities for students to develop their creativity; to improve their practices of critical reflection, argumentation, research, and collaboration; to identify and clarify “real world” issues; and to improve problem-solving capabilities using appropriate group interaction. Course content may be organized around special topics, themes,

Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

HON 296 Honors Independent Study Project

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Exploration of special interest areas for Honors students. Content to be determined jointly by student and faculty mentor.

Prerequisite(s): HON 101.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Hotel and Restaurant Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

HRM 100 Introduction to the Hospitality Industry

3 cr. hrs. 3 periods (3 lec.)

Overview of the hospitality industry, including the food service business, restaurants and hotels, and the meeting and conference industry. Also includes hospitality industry management and leadership; human resources; marketing and promotion; franchising; and ethics in hospitality management.

Offered: Fall, Spring, Summer.

HRM 101 Front Office Procedures

3 cr. hrs. 3 periods (3 lec.)

Principles and procedures for front office operations in hotels and resorts. Includes classification of hotels, organizational structure, front office operations planning and evaluation, and human resources management. Also includes reservations, registration, front office accounting, check out and settlement, night audit, and revenue management.

Offered: Fall, Spring.

HRM 104 Hotel Food and Beverage Management

3 cr. hrs. 3 periods (3 lec.)

Hotel food and beverage operations and management. Includes management structure and functions, personnel management, cost control/quality assurance, tools and equipment, facilities, and purchasing and storage. Also includes volume food management; beverage management and service; food products and preparation techniques; menus and recipes; sanitation; and liability issues.

Offered: Fall.

HRM 110 Food Service Systems Management

3 cr. hrs. 3 periods (3 lec.)

Introduction the various components of systematic food service management. Includes investigation of management principles, various management control methods, and critical operational functions.

Offered: Fall, Spring.

HRM 111 Commercial Food

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to all facets of hot food preparation in a commercial kitchen. Includes the application of proper cooking skills and techniques. Also includes the use and/or preparation of a variety of food items, such as sauces, thickening agents, soups, vegetables, starches, meats, and pastries.

Prerequisite(s): HRM 110

Information: This course requires 10 hours of commercial kitchen demonstration.

Offered: Fall, Spring.

HRM 120 Meetings and Convention Management

3 cr. hrs. 3 periods (3 lec.)

Basic principles for planning and operating meetings, conventions, and trade shows. Includes types of events and their economic impact, meetings as a social phenomenon, and the role of the meeting planner. Also includes practical tools for preliminary planning and needs analysis, program design and budgeting, site selection, and on-site management.

Offered: Spring.

HRM 140 Introduction to Bar and Beverage Management

3 cr. hrs. 3 periods (3 lec.)

Introduction to the fundamental areas of beverage operations. Includes planning of the bar, bar staffing and training, legal regulations, standardized recipes, drink costing and pricing, and beverage production methods and mixology. Also includes product identification; purchasing, receiving, storing and issuing beverages; service of spirits, wine and beer products; marketing and menu development; and cost controls of a beverage operation.

Prerequisite(s): HRM 110.

Recommendation: Students should be at least 21 years of age.

Offered: Spring.

HRM 150 Hospitality Property Management

3 cr. hrs. 3 periods (3 lec.)

An examination of planning, implementing, and monitoring the hospitality operation environment with the aim of enhancing the guest experience by fostering a proactive approach to compliance, conformance to standards and competitiveness. Includes design and layout of guestrooms, lobbies, food outlets, and recreation outlets as it pertains to maintenance and housekeeping; product and service analysis; inventory control; preventative maintenance; renovations; liability; protecting guests and their property; asset protections; grounds and landscaping; ecology; and transportation.

Offered: Spring.

HRM 199 Introductory Co-op: Hotel and Restaurant Management

1 cr. hrs. 1 periods (1 lec.)

Introduction to cooperative education for first-year students. Includes instruction that supports success in securing and retaining a training job related to hotel and restaurant management. Also includes communication skills; time, energy, and stress management; career information and its uses; the job market; principles, theories, and practices in the career field; and problems in the work environment.

Corequisite(s): HRM 199WK

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

HRM 199WK Co-op Work: Hotel and Restaurant Management

1-8 cr. hrs. 5-40 periods (5-40 lab)

A supervised cooperative work program for students in hotel and restaurant management. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

Corequisite(s): HRM 199

Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

HRM 210 Managing Customer Service for the Hospitality Industry

3 cr. hrs. 3 periods (3 lec.)

Introduction to managing customer service expectations and experiences, with strategies and tactics for managing the customer service experience in all hospitality enterprises. Emphasis on customer satisfaction, customer retention, company profitability, and differing customer service approaches analyzed and evaluated. Topics include: exceptional customer service, communication with the internal customer, handling guest complaints, and managing customer relations. Also includes: how to create a positive customer service climate that harnesses the natural talents of service professionals; guidance on the hiring, training, supporting, retention, and empowerment of service professionals.

Prerequisite(s): HRM 100.

Offered: Spring.

HRM 235 Hospitality Law

3 cr. hrs. 3 periods (3 lec.)

Examination of legal aspects of hospitality management. Includes basic legal principles governing hospitality operations; the hotel-guest relationship; the hotel's duties to guests and others; laws governing restaurants, foodservice, and bars; and laws relating to hotel employees.

Prerequisite(s): HRM 100.

Offered: May not be offered this year, check class schedule.

HRM 245 Hospitality Human Resource Management

3 cr. hrs. 3 periods (3 lec.)

Examination of personnel issues in hospitality management. Includes recruitment, selection, orientation, training, wages and benefits, legal issues, and employee evaluation.

Prerequisite(s): HRM 100 with a grade of C or better.

Offered: May not be offered this year, check class schedule.

HRM 299 Intro to Advanced Co-op: Hotel and Restaurant Management

1 cr. hrs. 1 periods (1 lec.)

Advanced cooperative education class that supports success in securing and retaining a training job in hotel and restaurant management. Includes communication skills; time, energy, and stress management; career information and its uses; the job market; principles, theories, and practices in the career field; and problems in the work environment.

Corequisite(s): HRM 299WK

Information: A minimum of 12 credit hours of Hotel and Restaurant Management (HRM) prefix courses or one year of related industry work experience is required before enrolling in this course. May be taken two times for a maximum of two credit hours.

Offered: Fall, Spring.

HRM 299WK Advanced Co-op Work: Hotel and Restaurant Management

1-3 cr. hrs. 5-15 periods (5-15 lab)

A supervised cooperative work program for advanced students in hospitality management. Instructor-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

Corequisite(s): HRM 299

Information: A minimum of 12 credit hours of Hotel and Restaurant Management (HRM) prefix courses or one year of related industry work experience is required before enrolling in this course. May be taken for a maximum of three credit hours.

Offered: May not be offered this year, check class schedule.

Human Resources Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

HRS 101 Introduction to Human Resources Management

3 cr. hrs. 3 periods (3 lec.)

Practical applications for success in personnel management. Includes human resources management in perspective, meeting requirements, the challenge, function/environment, recruitment, compensation, incentive plans, training and development, and labor relations.

Offered: Fall, Spring, Summer.

HRS 102 Human Resource Law

3 cr. hrs. 3 periods (3 lec.)

Legal issues associated with human resources management. Includes hiring, personnel practices, wages and hours, taxes employee benefits, family and medical leave, health and safety, illegal discrimination, workers with disabilities, and termination. May also include issues associated with independent contractors, unions, and lawyers and legal research.

Offered: Fall, Spring.

HRS 103 Benefits and Compensation

3 cr. hrs. 3 periods (3 lec.)

Study of benefits and compensation management. Includes strategic compensation planning, components of the wage mix, job evaluation systems, the compensation structure, governmental regulation of compensation, significant compensation issues, employee benefits programs, employee benefits required by law, discretionary major employee benefits, employee services, reasons and requirements for incentive plans, setting performance measures, administering incentive plans, incentive for non-management employees, incentive for management employees, incentives for executive employees, and gain-sharing incentive plans.

Offered: Fall, Spring, Summer.

HRS 104 Job Requirements, Recruitment, and Personnel Selection

3 cr. hrs. 3 periods (3 lec.)

Concepts, techniques, and regulation that apply to job requirements, recruitment, and personnel selection. Includes relationships of job requirements and HRS functions, job analysis, job design, matching people and jobs, sources of information about job candidates, employment tests, the employment interview, and reaching a selection decision.

Offered: Fall, Spring, Summer.

HRS 105 Training and Development

3 cr. hrs. 3 periods (3 lec.)

Introduction to training, career development, and appraising and improving performance. Includes the scope of training, conducting the needs assessment, designing the training program, implementing the training program, evaluating the training program, special topics in training and development, elements of career development programs, career development and management succession, career development for a diverse workforce, personal career development, performance appraisal programs, developing an effective appraisal program, performance appraisal methods, and appraisal interview.

Offered: Fall, Spring.

HRS 106 Labor Relations

3 cr. hrs. 3 periods (3 lec.)

Exploration of issues in the area of labor relations. Includes employee rights, disciplinary policies and procedures, appealing disciplinary actions, organizational ethics in employee relations, government regulation of labor relations, the labor relations process, structures, functions, and leadership of labor unions, labor relations in the public sector, contemporary challenges to labor organizations, the bargaining process, trends in collective bargaining, the labor agreement, and administration of the labor agreement.

Offered: Fall, Spring.

Humanities

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

HUM 131 Mythology

3 cr. hrs. 3 periods (3 lec.)

Myths, legends, and folktales of the Greeks and Romans. Includes basic concepts of myths, myths of the Greeks and Romans, major Greek divinities and their Roman counterparts, stories about the major divinities, artistic representation of myths, effects of ancient myths on western literary movement, similarities and differences between major mythic systems, and anthropological and psychological approaches to mythic systems. Also includes a humanistic approach to the study of Greek and Roman sacred narratives, stories derived from oral traditions, and cultural events, which invite symbolic analysis.

Offered: Fall, Spring.

HUM 196 Independent Studies in Humanities

3 cr. hrs. 3 periods (3 lec.)

Reading and research to be determined between the student and the instructor.

Offered: Fall, Spring.

HUM 251 Western Humanities I

3 cr. hrs. 3 periods (3 lec.)

Introduction to major cultures from rise of city-states through the early Roman Christian era. Includes general history of ideas, art, architecture, religion, philosophy, drama, music, and literature from ancient Near Eastern civilizations, and Greek, Roman, and Early Roman Christian civilizations. Also includes readings such as the Epic of Gilgamesh, Homer, Sophocles, Aristophanes, Plato, Aristotle, Virgil's Aeneid, Hebrew and the Christian Scriptures, and St. Augustine.

Offered: Fall, Spring.

HUM 252 Western Humanities II

3 cr. hrs. 3 periods (3 lec.)

Introduction to major western cultures from the early Medieval through AD 1600. Includes general history of ideas, art, architecture, religion, philosophy, drama, music, and literature from early and late Medieval periods, Renaissance-Reformation, and Counter-Reformation. Also includes readings such as heroic and religious works of the Middle Ages, Dante, Chaucer, Machiavelli, Shakespeare, and Cervantes.

Offered: May not be offered this year, check class schedule.

HUM 253 Western Humanities III

3 cr. hrs. 3 periods (3 lec.)

Introduction to the culture of the modern western world from AD 1600 to the present. Includes general history of ideas, art, architecture, religion, philosophy, drama, music and literature from Enlightenment, Baroque, Romantic, Pre-Modern, and Contemporary periods. Also includes readings such as Voltaire, Rousseau, Goethe, Romantic, pre-modern and contemporary literature, poetry, and drama.

Offered: Fall, Spring, Summer.

HUM 260 Intercultural Perspectives

3 cr. hrs. 3 periods (3 lec.)

Literary and artistic works of American Indians and Asian, Black, and Hispanic Americans, both men and women. Includes traditional and modern works and contributions to American civilization.

Offered: Fall, Spring, Summer.

Industrial and Commercial Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ICT 100 Energy Industry Fundamentals

3 cr. hrs. 3 periods (3 lec.)

Introduction to various types of energy and their conversion to useable energy such as electrical power. Includes how generated electrical power is transmitted and distributed to the point of use.

Offered: Fall.

ICT 101 Introduction to the Natural Gas Industry

3 cr. hrs. 3 periods (3 lec.)

Introduction to the natural gas industry. Includes the history of the gas industry, safety issues, and field operations.

Offered: Fall.

ICT 102 Introduction to Natural Gas Operations

2 cr. hrs. 2 periods (2 lec.)

Introduction to natural gas operations. Includes natural gas facts, natural gas networks, general security awareness, basic fire training, abnormal and unusual operating conditions, emergency response, and operations of MSA valves. Also includes visual inspection for atmospheric corrosion, meter locations, energy diversion, turn offs, above ground coatings, and leak test at operating pressure.

Offered: May not be offered this year, check class schedule.

Industrial Maintenance

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

IMO 121 NCCER Industrial Maintenance Electrical and Instrumentation L1

9.5 cr. hrs. 10.4 periods (6.6 lec., 3.8 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes orientation to the trade, tools of the trade, fasteners and anchors, oxyfuel cutting, gaskets and packing, craft-related mathematics, construction drawings, pumps and drivers, valves, test equipment introduction, material handling and hand rigging, mobile and support equipment, and lubrication.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121A NCCER Industrial Maintenance Electrical and Instrumentation L1 Trade Orientation

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Trade orientation to the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes work performed by industrial maintenance craftworkers, career opportunities, apprenticeship program objectives, craftworker responsibilities and desirable characteristics, and craftworker safety.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121B NCCER Industrial Maintenance Electrical and Instrumentation L1 Tools Orientation

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Orientation to tools used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes pipe vise, pipe threading machine, cut-off machine, portable power drivers, and the inspection and basic maintenance of tools.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121C NCCER Industrial Maintenance Electrical and Instrumentation L1 Fasteners/Anchors

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Fasteners and anchors used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes threaded fasteners, screws, anchors, and toggle bolts.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121D NCCER Industrial Maintenance Electrical and Instrumentation L1 Oxyfuel Cuttings

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Oxyfuel cutting in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes equipment set up, using the oxyfuel torch, shutting down and disassembling equipment, performing basic oxyfuel cuts and track burner.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121E NCCER Industrial Maintenance Electrical and Instrumentation L1 Gaskets and Packing

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Gaskets and packing used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes gasket layout and installation, cut and install packing, and O-ring installation.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121F NCCER Industrial Maintenance Electrical and Instrumentation L1 Craft Math

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Craft-related mathematics used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes special measuring devices, tables of weights and measures, basic formulas; problems involving area, volume, circumference and right triangles.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121G NCCER Industrial Maintenance Electrical and Instrumentation L1 Construction Drawings

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Construction drawings used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes special parts of construction drawings and types of drawings.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121H NCCER Industrial Maintenance Electrical and Instrumentation L1 Pumps and Drivers

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Pumps and drivers used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes pumps and drivers common to industrial maintenance operations.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121I NCCER Industrial Maintenance Electrical and Instrumentation L1 Valves

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Valves used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes valve functions, including start and stop flow, regulate flow, relieve pressure, regulate the direction of flow, and valve locations, positions, storage and handling.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121J NCCER Industrial Maintenance Electrical and Instrumentation L1 Test Equipment

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Test equipment used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes types of test equipment and automated diagnostic tools.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121K NCCER Industrial Maintenance Electrical and Instrumentation L1 Material Handling/Rigging

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Material handling and rigging used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes safety procedures, rigging equipment, knots used in rigging, center of gravity of a load, rigging hardware, hand signals and sling tension calculation.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121L NCCER Industrial Maintenance Electrical and Instrumentation L1 Mobile and Support Equipment

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Mobile and support equipment used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes safety precautions, motor-driven equipment, preventive maintenance and aerial lift inspection.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 121M NCCER Industrial Maintenance Electrical and Instrumentation L1 Lubrication

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Lubrication used in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level one. Includes federal guidelines, Material Safety Data Sheet (MSDS), lubricants and greases.

Information: IMO 121A, 121B, 121C, 121D, 121E, 121F, 121G, 121H, 121I, 121J, 121K, 121L and 121M comprise IMO 121. These courses are equivalent to the NCCER Level One Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills curriculum.

Offered: May not be offered this year, check class schedule.

IMO 122 NCCER Industrial Maintenance Electrical and Instrumentation L2

11.25 cr. hrs. 13.5 periods (9 lec., 4.5 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes industrial safety, the National Electrical Code®, electrical theory, alternating current, test equipment, flow, pressure, level and temperature, process mathematics, hand bending, tubing, instrument drawings and documents, conductors and cables, and conductor terminations and splices.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: May not be offered this year, check class schedule.

IMO 122A NCCER Industrial Maintenance Electrical and Instrumentation Industrial Safety

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Industrial safety basics in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes safe work practices, electrical safety, protective equipment, energy control and environmental hazards.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: May not be offered this year, check class schedule.

IMO 122B NCCER Industrial Maintenance Electrical and Instrumentation National Electrical Code®

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Introduction to the National Electrical Code® (NEC®) in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes the purpose and history of the NEC®, layout of the NEC® and other organizations involved with the standards for the manufacture and use of electrical products.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: May not be offered this year, check class schedule.

IMO 122C NCCER Industrial Maintenance Electrical and Instrumentation Electrical Theory

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Electrical theory in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes atomic theory, electrical power, schematic representations, resistors and circuits.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: May not be offered this year, check class schedule.

IMO 122D NCCER Industrial Maintenance Electrical and Instrumentation Alternating Current

1.25 cr. hrs. 1.5 periods (1 lec., .5 lab)

Electrical theory in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes sine waves, AC phase relationships, AC circuits, capacitance and transformers.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: May not be offered this year, check class schedule.

IMO 122E NCCER Industrial Maintenance Electrical and Instrumentation Test Equipment

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Test equipment in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes electrical meters and instrumentation test equipment.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: May not be offered this year, check class schedule.

IMO 122F NCCER Industrial Maintenance Electrical and Instrumentation Flow/Pressure/Level/Temp

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Flow, pressure, level and temperature in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes flow, pressure, level and temperature in common instrument control systems.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: May not be offered this year, check class schedule.

IMO 122G NCCER Industrial Maintenance Electrical and Instrumentation Process Mathematics

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Process mathematics in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes common metric measurements, calculators and instrumentation applications used by industrial maintenance electrical and instrumentation technicians.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: Fall, Spring, Summer.

IMO 122H NCCER Industrial Maintenance Electrical and Instrumentation Hand Bending

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Hand bending of conduits in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes equipment for hand bending conduit, and cutting, reaming and threading conduit.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: Fall, Spring, Summer.

IMO 122I NCCER Industrial Maintenance Electrical and Instrumentation Tubing

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Tubing in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes the sizes and types of tubing common to commercial plants and other facilities, the storage of tubing and the installation of tubing.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: Fall, Spring, Summer.

IMO 122J NCCER Industrial Maintenance Electrical and Instrumentation Tube and Pipe System Maintenance

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Tube and pipe systems maintenance in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes cleaning and purging tubing and piping systems, and pressure and leak testing of tube and pipes.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: Fall, Spring, Summer.

IMO 122K NCCER Industrial Maintenance Electrical and Instrumentation Introduction to Instrument Drawings and Documents

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Introduction to instrument drawings and documents in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes instrument symbols and identification, instrument index, instrument specifications, notes and details; installation details, drawings, and control loops.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills, NCCER Industrial Maintenance Electrical, and Instrumentation Level One curriculum.

Offered: Fall, Spring, Summer.

IMO 122L NCCER Industrial Maintenance Electrical and Instrumentation Conductors and Cables

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Conductors and cables in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes conductors and insulation, and installing conductors in conduit systems.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curriculum.

Offered: Fall, Spring, Summer.

IMO 122M NCCER Industrial Maintenance Electrical and Instrumentation Conductor Termination and Splices

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Conductor terminations and splices in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level two. Includes stripping and cleaning conductors, wire connections, control and signal cable, low voltage connectors and terminals, and connector installation.

Prerequisite(s): IMO 121.

Information: IMO 122A, 122B, 122C, 122D, 122E, 122F, 122G, 122H, 122I, 122J, 122K, 122L and 122M comprise IMO 122. These courses are equivalent to the NCCER Level Two Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Level One curricula.

Offered: Fall, Spring, Summer.

IMO 123 NCCER Industrial Maintenance Electrical and Instrumentation L3

12.25 cr. hrs. 14.7 periods (9.8 lec., 4.9 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes hazardous locations, electronic components, electrical and instrumentation drawings, motor controls, distribution equipment, transformer applications, conductors, temporary grounding, layout and installation of tubing and piping systems, machine bending of conduit, hydraulic controls, pneumatic controls and motor-operated valves.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123A NCCER Industrial Maintenance Electrical and Instrumentation L3 Hazardous Locations

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes hazardous locations, electronic components, electrical and instrumentation drawings, motor controls, distribution equipment, transformer applications, conductors, temporary grounding, layout and installation of tubing and piping systems, machine bending of conduit, hydraulic controls, pneumatic controls and motor-operated valves.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123B NCCER Industrial Maintenance Electrical and Instrumentation L3 Electronic Components

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Electronic components in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes semiconductor fundamentals, diodes, rectifiers, light-emitting diodes, photo diodes, opto-isolators, zener diodes, transistors, silicon-controlled rectifiers, diacs and triacs, printed circuit boards, operational amplifiers and basic digital gates.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123C NCCER Industrial Maintenance Electrical and Instrumentation L3 Electrical Instrumentation Drawings

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Electrical and instrumentation drawings in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes electrical drawings, instrumentation drawings and standardized design methods.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123D NCCER Industrial Maintenance Electrical and Instrumentation L3 Motor Controls

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Motor Controls in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes electromagnetic relays, magnetic contactors, overload protection, magnetic and manual motor starters, control transformers and pilot devices, drum switches, enclosures, diagrams, NEC® regulations for installation of motor circuits, and connecting motor controllers for specific applications.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123E NCCER Industrial Maintenance Electrical and Instrumentation L3 Distribution Equipment

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Distribution Equipment in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes voltage classifications, switchboards, switchgear, testing and maintenance, NEC® requirements for switchboards, ground faults, HVL switches, bolted pressure switches, transformers, instrument transformers, circuit breakers, panelboards, and NEC® requirements for services.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123F NCCER Industrial Maintenance Electrical and Instrumentation L3 Transformer Applications

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Transformer applications in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes transformer types, specialty transformers sizing Buck-and-Boost transformers, and harmonics.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123G NCCER Industrial Maintenance Electrical and Instrumentation L3 Conductor Selection and Calculation

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Conductor selection and calculation in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes conductor applications, conductor properties, and voltage drop.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123H NCCER Industrial Maintenance Electrical and Instrumentation L3 Temporary Grounding

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Temporary grounding in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes electrical safety analysis, temporary grounding purpose and terms, sources of hazardous energy, temporary grounding preparations, temporary grounding devices, ground cable assemblies, and installing and removing temporary grounding devices.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123I NCCER Industrial Maintenance Electrical and Instrumentation L3 Layout of Tubing Grid Piping Systems

1.5 cr. hrs. 1.8 periods (1.2 lec., .6 lab)

Layout and installation of tubing and piping systems in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes tubing and piping system layout, measuring and bending tubing and piping, and support tubing and piping.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123J NCCER Industrial Maintenance Electrical and Instrumentation L3 Machine Bending Conduit

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Machine bending of conduit in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes NEC® requirements for the machine bending of conduit, types of bends, conduit bending geometry, mechanical benders, mechanical stub-ups, mechanical offsets, electric and hydraulic benders, segment bending techniques, tricks of the trade, PVC conduit installations and bending PVC conduit.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123K NCCER Industrial Maintenance Electrical and Instrumentation L3 Hydraulic Controls

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Hydraulic controls in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes system safety, principles of hydraulics, fluids, system parts, pumps, motors, inspecting and troubleshooting, and applications.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123L NCCER Industrial Maintenance Electrical and Instrumentation L3 Pneumatic Controls

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Pneumatic controls in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes system safety, physical characteristics of gases, effects of atmospheric pressure, compressing gases, pneumatic transmission of energy, compressor operation and types, treatment of compressed air, pneumatic system components, pneumatic symbols, and troubleshooting pneumatic systems.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 123M NCCER Industrial Maintenance Electrical and Instrumentation L3 Motor-Operated Valves

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Motor-operated valves in the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level three. Includes safety, types of motor-operated valves, and set up.

Prerequisite(s): IMO 121 and 122.

Information: IMO 123A, 123B, 123C, 123D, 123E, 123F, 123G, 123H, 123I, 123J, 123K, 123L and 123M comprise IMO 123. These courses are equivalent to the NCCER Level Three Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One and Two curricula.

Offered: Fall, Spring, Summer.

IMO 124 NCCER Industrial Maintenance Electrical and Instrumentation L4

11 cr. hrs. 13.2 periods (8.8 lec., 4.4 lab)

National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes standby and emergency systems, basic process control elements, transducers, and transmitters, instrumentation calibration and configuration, pneumatic control valves, actuators, and positioners, performing loop checks, troubleshooting and commissioning a loop, process control loops and tuning, data networks, programmable logic controllers, and distributed control systems.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124A NCCER Industrial Maintenance Electrical and Instrumentation L4 Standby and Emergency Systems

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Standby and emergency systems for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes system components, storage batteries, static uninterruptible power supply, NEC® requirements for emergency systems and emergency system circuits for lights and power.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124B NCCER Industrial Maintenance Electrical and Instrumentation L4 Process Control Elements

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Process control elements, transducers and transmitters for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes the fundamentals of process control, detectors, secondary elements, transducers and transmitters.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124C NCCER Industrial Maintenance Electrical and Instrumentation L4 Instrument Calibration

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Instrument calibration and configuration for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes defining calibration, pneumatic calibration equipment and calibrating procedures, analog calibration equipment and calibrating procedures, smart transmitters and transducers.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124D NCCER Industrial Maintenance Electrical and Instrumentation L4 Pneumatic Control Valves

2.5 cr. hrs. 3 periods (2 lec., 1 lab)

Pneumatic control valves, actuators and positioners for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes pneumatic control valves, valves that regulate flow, pneumatic valve actuators, positioners, valve stems and leak prevention, replacing bonnet gaskets, packing valves, storing and handling valves, installing valves, valve markings and nameplate information and troubleshooting actuators and positioners.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124E NCCER Industrial Maintenance Electrical and Instrumentation L4 Performing Loop Checks

.5 cr. hrs. .6 periods (.4 lec., .2 lab)

Performing loop checks for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes verifying mechanical installation, loop continuity tests, providing a loop and calibrating a loop.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124F NCCER Industrial Maintenance Electrical and Instrumentation L4 Troubleshooting Loop

.75 cr. hrs. .9 periods (.6 lec., .3 lab)

Troubleshooting and commissioning a loop for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes fundamentals of troubleshooting a loop, troubleshooting an oscillating process, proving a loop and commissioning a loop.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124G NCCER Industrial Maintenance Electrical and Instrumentation L4 Process Control Loops

1.5 cr. hrs. 1.8 periods (1.2 lec., .6 lab)

Process control loops and tuning for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes process control theory, process control loop basics, control loops, control modes, types of control applications, loop tuning methods, open-loop methods, visual loop tuning and application of process control.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124H NCCER Industrial Maintenance Electrical and Instrumentation L4 Data Networks

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Data networks for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes the data highway, transfer medium, OSI reference model, network topologies, access control, common network nomenclature, the internet, industrial networks, microcomputer-based LANs, proprietary control networks, bridge, routers and gateways, network cabling, optical fiber cable and cable testing.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

IMO 124I NCCER Industrial Maintenance Electrical and Instrumentation L4 Programmable Logic Controllers

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Programmable logic controllers (PLC) for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes PLC architecture, number systems, PLC hardware, processor modules, software, hardware to program correlation and guidelines for programming and installation.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall Spring, Summer.

IMO 124J NCCER Industrial Maintenance Electrical and Instrumentation L4 Distributed Control System

1 cr. hrs. 1.2 periods (.8 lec., .4 lab)

Distributed control systems for the National Center for Construction Education and Research (NCCER) industrial maintenance electrical and instrumentation technician skills, level four. Includes system architecture, controllers and their I/O, software server and engineering station, operator workstation, the network, installation and commissioning, maintenance and troubleshooting, and troubleshooting plant equipment with a distributed control system.

Prerequisite(s): IMO 121, 122, and 123.

Information: IMO 124A, 124B, 124C, 124D, 124E, 124F, 124G, 124H, 124I, and 124J comprise IMO 124. These courses are equivalent to the NCCER Level Four Industrial Maintenance Electrical and Instrumentation Technician curriculum. Students desiring to earn this NCCER credential must first complete the NCCER Core Introductory Craft Skills and NCCER Industrial Maintenance Electrical and Instrumentation Levels One, Two, and Three curricula.

Offered: Fall, Spring, Summer.

Integrated College Skills

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ICS 079 Integrated College Skills (Reading and Writing)

4 cr. hrs. 6 periods (3 lec., 3 lab)

Knowledge, skills and techniques required to be successful in college. Includes foundational skills in digital literacy, reading and writing. Also includes study techniques, goal setting, time management, note taking systems, and test taking strategies.

Information: This course can be taken twice for a maximum of 8 credit hours.

Offered: Fall, Spring.

ICS 081 Integrated College Skills (Mathematics)

3 cr. hrs. 5 periods (2 lec., 3 lab)

Knowledge, skills and techniques required to be successful in college. Includes foundational skills in digital literacy and mathematics. Also includes study techniques, goal setting, time management, note taking systems, and test taking strategies.

Information: This course can be taken twice for a maximum of 6 credit hours.

Offered: Fall, Spring.

International Business Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

IBS 120 Cultural Environment of International Business

3 cr. hrs. 3 periods (3 lec.)

Examination of the cultural values of the foreign country in comparison to those of the United States. Includes social and religious customs, roles of men and women, attitudes toward time, humor, drugs and alcohol, and patterns of communication. Also includes political, educational and legal structures, health care values, attitudes toward shopping and conducting business, business structure, ethics and values.

Offered: May not be offered this year, check class schedule.

Interpreter Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ITP 201 Ethics and Social Justice of Interpreting

3 cr. hrs. 3 periods (3 lec.)

Focuses on identifying personal ethics and beliefs as well as ethics as it relates to the field of interpreting and the Code of Professional Conduct. Also includes discussions of social justice theory and how it relates to ASL and English speaking communities.

Prerequisite(s): ASL 201 with a grade of B or better.

Offered: Fall, Spring.

ITP 211 Fundamentals of Interpreting I

3 cr. hrs. 3 periods (3 lec.)

Foundation skills required for effective translation and interpretation. Includes critical analysis and application for systemically analyzing interactions and texts in order to ascertain where meaning lies. Also includes understanding and developing the cognitive skills for translating and interpreting.

Prerequisite(s): ASL 201 with a grade of B or better.

Offered: Fall.

ITP 212 Fundamentals of Interpreting II

3 cr. hrs. 3 periods (3 lec.)

Focuses on the foundation skills required for effective translation and interpretation. Includes intralingual translation and interpretation text analysis techniques through main point abstraction, summarization, paraphrasing and restructuring a message while retaining its meaning. Discussions will address theoretical aspects of translating and interpreting techniques as well as specific issues related to interpreting skills. Also includes introduction to the interpreting field.

Prerequisite(s): ASL 202 with a grade of B or better.

Offered: May not be offered this year, check class schedule.

Italian

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

ITA 101 Elementary Italian I

4 cr. hrs. 4 periods (4 lec.)

Introduction to Italian. Includes basic oral and written forms, grammatical structures, interpersonal transactions, and geographical and cultural awareness.

Offered: Fall.

ITA 102 Elementary Italian II

4 cr. hrs. 4 periods (4 lec.)

Continuation of ITA 101. Includes additional Italian grammar and structure, transactions and topics in Italian, Italian compositions, manipulating meaning from readings, and interpreting meaning from listening.

Prerequisite(s): ITA 101.

Offered: May not be offered this year, check class schedule.

Japanese

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

JPN 085 Introductory Japanese

4 cr. hrs. 4 periods (4 lec.)

Elementary Japanese conversation. Includes an overview of the Japanese language, writing and pronunciation, and useful daily expressions. Also includes Japanese culture and communication.

Offered: May not be offered this year, check class schedule.

JPN 101 Elementary Japanese I

5 cr. hrs. 5 periods (5 lec.)

Introduction to the Japanese language. Includes an overview of the Japanese language, speaking and listening, writing and reading, grammar, personal transactions, and the cultural context within which Japanese conversation takes place. Also includes writing and reading of Hiragana, Katakana, and 23 Kanji characters.

Offered: Fall, Spring.

JPN 102 Elementary Japanese II

5 cr. hrs. 5 periods (5 lec.)

Continuation of JPN 101. Includes oral and written forms, grammatical structures, interpersonal transactions, and the cultural component of communication competency.

Prerequisite(s): JPN 101.

Offered: Fall, Spring.

JPN 201 Intermediate Japanese I

5 cr. hrs. 5 periods (5 lec.)

Continuation of Japanese 102. Includes speaking and listening, grammar, personal transactions, and the cultural context to which Japanese conversations take place. Also includes reading and writing Hiragana, Katakana, and 250 Kanji characters.

Prerequisite(s): JPN 102.

Offered: May not be offered this year, check class schedule.

JPN 202 Intermediate Japanese II

5 cr. hrs. 5 periods (5 lec.)

Continuation of Japanese 201. Includes speaking and listening, grammar, personal transactions, and using more complex sentence structure in a cultural context within which Japanese conversations take place. Also includes Hiragana, Katakana, and 365 Kanji characters.

Prerequisite(s): JPN 201.

Offered: May not be offered this year, check class schedule.

Journalism

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

JRN 101 Introduction to Reporting and Media Writing

3 cr. hrs. 3 periods (3 lec.)

Introduction to news reporting. Includes journalism as a career, the journalist and the organization of the newsroom, defining news, news style, elements of a news story, fundamentals of writing news, and news gathering and reporting. Also includes organizing and writing the story, revision of stories, and ethics, libel and media law.

Prerequisite(s): WRT 090 or required score on the writing assessment test.

Offered: Fall, Spring.

JRN 102 Survey of Media Communications

3 cr. hrs. 3 periods (3 lec.)

Survey of theory, function and impact of mass media. Includes analysis of book and magazine publishing, newspapers, recorded music, radio, television, film, the Internet, public relations, advertising, and media uses and effects. Also includes media law, ethics, and global communication.

Offered: Fall, Spring.

JRN 185 Newspaper Publishing

3 cr. hrs. 7 periods (1 lec., 6 lab)

Print and online publication of the college's biweekly student newspaper. Includes elements of news, research mastery, information gathering, qualities of good writing, copy for publication, qualities of good reporting and copy editing, photographs, video and audio, media law, ethics, content and diversity, and using computers.

Prerequisite(s): JRN 101.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

JRN 186 Writing for the Web

3 cr. hrs. 3 periods (3 lec.)

Introduction to techniques for writing on the World Wide Web. Includes Web technology; adding photos, graphics, video, audio, hypertext and hypermedia; and linear and nonlinear writing forms. Also includes media law and journalistic ethics.

Prerequisite(s): JRN 101.

Offered: May not be offered this year, check class schedule.

JRN 235 Writing/Reporting for Broadcast Journalism

3 cr. hrs. 3 periods (3 lec.)

Introduction to news writing and reporting for television and radio. Includes broadcast news, formats, terminology and readability; shifting from print to broadcast writing; broadcast copy, news gathering and reporting; and reporting assignments and coverage. Also includes writing for radio and television newscasts; short and long packages for radio and television; live shots; breaking news coverage; influence of the Web and new distribution sources; basic video and audio editing; and broadcast law and ethics.

Prerequisite(s): JRN 101.

Recommendation: Completion of JRN 102 before enrolling in this course or concurrent enrollment.

Offered: Fall.

JRN 240 Editing, Layout, and Design

3 cr. hrs. 3 periods (3 lec.)

Principles of news editing, layout, and design. Includes hands-on copy editing, fact-checking, proofreading, electronic page layout, typography, design, headline and caption writing, as well as, legal and professional responsibilities. Also includes grammar, language, and Associated Press style.

Offered: Fall, Spring.

JRN 260 Magazine and Feature Writing

3 cr. hrs. 3 periods (3 lec.)

Writing newspaper and magazine feature articles for publication. Includes types of features, generating story ideas, guidelines for research, interviewing and writing; composing query letters, and submitting feature stories for publication.

Offered: May not be offered this year, check class schedule.

JRN 280 Photojournalism

3 cr. hrs. 3 periods (3 lec.)

Practical applications of photographic skills to communicate news stories and document life. Includes basic camera operations, multimedia, digital imaging, and editing software, as well as, ethical and legal considerations. Also includes analysis of visual images, composition, technical concepts, cropping and sizing, layout of photo essays, video editing, and writing captions.

Information: Access to a digital camera is required.

Offered: Fall, Spring.

JRN 285 Advanced News Publication

3 cr. hrs. 7 periods (1 lec., 6 lab)

Advanced work on print and online publication of the college's biweekly student newspaper. Includes news coverage; qualities of high-level writing, reporting, and copy editing; research and the use of computers, newsroom management, page design, and newspaper legal and ethical considerations.

Prerequisite(s): JRN 185.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

JRN 290 Journalism Internship

1-5 cr. hrs. 5-25 periods (5-25 lab)

Volunteer internship work experience at an approved site in the journalism field. Includes hands-on work experience, interpersonal communication, learning objectives and progress, and journalism internship assessment.

Prerequisite(s): JRN 101.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken four times for a maximum of twenty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

Korean

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

KOR 101 Elementary Korean I

4 cr. hrs. 4 periods (4 lec.)

Introduction to Korean. Includes basic oral and written Korean language forms, basic Korean grammatical structures, reading simple text, and Korean cultures and traditions.

Offered: May not be offered this year, check class schedule.

KOR 102 Elementary Korean II

4 cr. hrs. 4 periods (4 lec.)

Continuation of KOR 101. Includes additional phonetics in the Korean language, additional grammatical structures, reading additional simple text, and additional Korean culture and traditions.

Prerequisite(s): KOR 101.

Offered: May not be offered this year, check class schedule.

Landscape Technician

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

LTP 119 Plants for Landscape Design

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of plant identification and usage. Includes environmental influences, landscape design basic principles, planting and plant care, plant taxonomy, general and specific applications for plants, and plant selection.

Offered: May not be offered this year, check class schedule.

LTP 129 Landscape Design

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of landscape design. Includes determination of project requirements, site analysis, measuring, design principles, preliminary design, landscape plan drawing, and development of a practice project and final project.

Offered: May not be offered this year, check class schedule.

LTP 140 Landscape Sustainability and Water Harvesting

3 cr. hrs. 3 periods (3 lec.)

Principles and strategies for sustainability in landscapes. Includes environmental impacts, techniques in water harvesting, environmental pollution, and the protection and maintenance of natural systems.

Offered: May not be offered this year, check class schedule.

Latin

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

LAT 101 Elementary Latin I

4 cr. hrs. 4 periods (4 lec.)

Introduction to the Latin language through reading and composition. Includes all regular verb tenses in active voice; future perfect and pluperfect tenses in passive voice; the irregular verbs *sum*, *possum*, *eo*, *volo*, *nolo*, *fero*; all five noun declensions; all classes of adjective declensions; present infinitives; commands and questions; adverbs; pronouns: personal, demonstrative, reflexive, and relative pronouns; subordinate clauses; expressions of time and place; numerals; participles: present, perfect passive, and future active; and topics in ancient Roman history and culture.

Offered: May not be offered this year, check class schedule.

LAT 102 Elementary Latin II

4 cr. hrs. 4 periods (4 lec.)

Continuation of LAT 101. Comparative study of English and Latin grammar. Includes emphasis on analytical thinking, memorization, and familiarization with new terminology. Also includes translation to English from original works in Latin and from English to Latin, and topics in ancient Roman history and culture.

Prerequisite(s): LAT 101.

Offered: May not be offered this year, check class schedule.

Law Enforcement Academy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

LEA 110 Law Enforcement Academy Part I

24 cr. hrs. 24 periods (24 lec.)

Development of basic concepts, techniques, and applications utilized in law enforcement. Includes an introduction to ethics and leadership, law and legal matters, multicultural issues, as well as community and police relations. Also includes academic and proficiency skill standards required of law enforcement personnel as defined by the Arizona Peace Officer Standards and Training Board (AZ POST).

Information: Admission to the Law Enforcement Program is restricted and requires completion of program specific application. Please contact the Public Safety and Emergency Services Institute for enrollment information and assistance.

LEA 210 Law Enforcement Academy Part II

23 cr. hrs. 23 periods (23 lec.)

Continuation of LEA 110. Includes increased proficiency of concepts, techniques, and applications utilized in law enforcement, academic and proficiency skills, effective police testimony techniques, review of the United States Constitution, Arizona Revised Statutes (ARS) Title 13, and common civil and criminal liability facing law enforcement agencies and officers. Also includes academic and proficiency skill standards required of law enforcement personnel as defined by the Arizona Peace Officer Standards and Training Board (AZ POST).

Prerequisite(s): LEA 110.

Library and Information Sciences

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

LIS 150 Social Media and Ourselves

3 cr. hrs. 3 periods (3 lec.)

Distinguish how social media sites are influenced and impacted by users, as well as the role of social media in interpersonal relationships. Includes a focus on social media sites and the various implications and functions of social media in contemporary times. Also includes the study of new media taking place across disciplinary divides and from multiple theoretical perspectives.

Offered: May not be offered this year, check class schedule.

Literature

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

LIT 124 Introduction to Writers of the Southwest

3 cr. hrs. 3 periods (3 lec.)

Introduction to reading Mexican-American/Chicano, American Indian, and Anglo writers of the Southwest. Includes short stories, novels, poetry, and creative non-fiction. Also includes relevant comparisons of social, political, and environmental themes in different cultures.

Information: Students do not need to have a writing prerequisite.

Offered: May not be offered this year, check class schedule.

LIT 224 Southwestern Literature

3 cr. hrs. 3 periods (3 lec.)

Reading of Mexican-American/Chicano, American Indian, and Anglo writers of the Southwest. Includes short stories, novels, poetry, and creative non-fiction. Also includes relevant comparisons of social, political, and environmental themes in different cultures.

Offered: May not be offered this year, check class schedule.

LIT 225 Science Fiction Literature

3 cr. hrs. 3 periods (3 lec.)

Survey of science fiction work from the nineteenth through the twenty-first centuries in a variety of forms and media. Includes the development and components of the genre, its subgenres, and critical analysis of science fiction literary works. Also includes the role of technology and social issues in science fiction.

Offered: May not be offered this year, check class schedule.

LIT 231 Introduction to Shakespeare

3 cr. hrs. 3 periods (3 lec.)

Investigation of a number of Shakespeare's major works. Includes sonnets, comedies, histories, and tragedies. Also includes history, social and cultural conditions, literary background, staging, and writing.

Prerequisite(s): WRT 102 or 108.

Offered: May not be offered this year, check class schedule.

LIT 240 American Literature of Opposition

3 cr. hrs. 3 periods (3 lec.)

Protest and anti-establishment literature of the nineteenth and twentieth centuries in a variety of genres and media. Includes oppositional works from across the political and cultural spectrums. Also includes essay writing and critical thinking. May include contemporary Internet and alternative media.

Prerequisite(s): WRT 102 or 108.

Offered: May not be offered this year, check class schedule.

LIT 261 Modern Literature

3 cr. hrs. 3 periods (3 lec.)

Critical analysis of literature of the modern period and from a variety of nations and cultures. Includes analyzing literary texts for meaning and form, understanding the contexts of literature, and writing about literature. Also includes selections from various literary genres, which may include fiction, drama, and poetry, as well as other literary forms.

Prerequisite(s): WRT 102 or 108.

Offered: Fall, Spring.

LIT 261HC Modern Literature: Honors

3 cr. hrs. 3 periods (3 lec.)

Critical analysis of literature of the modern period and from a variety of nations and cultures. Includes analyzing literary texts for meaning and form, understanding the contexts of literature, and writing about literature. Also includes selections from various literary genres, which may include fiction, drama, and poetry, as well as other literary forms. Also may include the following honors content: intensive research using highest standards and best practices for the discipline, a significant number/variety of readings of both primary and secondary sources, a "publishable quality" peer reviewed paper or project in format appropriate for this discipline, and a presentation of research, either in class or to a wider audience.

Prerequisite(s): WRT 102 or WRT 108

Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

Offered: Spring.

LIT 262 American Poets

3 cr. hrs. 3 periods (3 lec.)

Study of the voices and visions of American poets. Includes American poetic visions, distinct styles and voices of poets, and writing assignments.

Prerequisite(s): WRT 102 or 108.

Offered: May not be offered this year, check class schedule.

LIT 263 Postmodern Literature

3 cr. hrs. 3 periods (3 lec.)

Examination of postmodern literary works and voices from the United States, South America, Europe, and a variety of other nations and cultures. Includes analysis of the literature and context of the postmodern period (1945 to the present) with a focus on social and historical influences including technology, mass communication, globalization, politics, protest, and war. Also includes exploration of conventional genres and newer emerging forms, such as metafiction, magic realism, language poetry, and hypertext.

Prerequisite(s): WRT 102 or 108.

Offered: May not be offered this year, check class schedule.

LIT 265 Major American Writers

3 cr. hrs. 3 periods (3 lec.)

Survey of selected works by major American authors from the colonial period to the present. Includes extensive writing and reading and emphasizes relating works to their social and historical contexts. Also includes analysis of literary texts of various genres, such as poetry, drama and fiction, for meaning and form.

Prerequisite(s): WRT 102 or 108.

Offered: May not be offered this year, check class schedule.

LIT 267 World Literature: Narrative

3 cr. hrs. 3 periods (3 lec.)

Multicultural readings of great narrative works of western literary tradition. Includes an introduction to narrative literature and works from major periods, such as ancient, classical, renaissance, and romantic, up to and including present. Also includes comparisons of form and theme to works from diverse cultural traditions, and an emphasis on verbal and written analysis of cultural and historical significance.

Prerequisite(s): WRT 102 or 108.

Offered: May not be offered this year, check class schedule.

LIT 280 Introduction to Literature

3 cr. hrs. 3 periods (3 lec.)

Critical analysis of literature from a variety of nations and cultures. Includes analyzing literary texts for meaning and form, understanding the contexts of literature, and writing about literature. Also includes selections from various literary genres, which may include fiction, drama, and poetry, as well as other literary forms.

Prerequisite(s): WRT 102 or WRT 108.

Offered: Fall.

LIT 289 Literature and Film

3 cr. hrs. 3 periods (3 lec.)

Criticism of film's dramatic forms, elements and genres. Includes development of film as an art form, comparative approaches to literature and film, performed drama, critical analysis and film production personnel.

Prerequisite(s): WRT 102 or 108.

Offered: Fall, Spring.

LIT 289HC Literature and Film: Honors

3 cr. hrs. 3 periods (3 lec.)

Criticism of film's dramatic forms, elements and genres. Includes development of film as an art form, comparative approaches to literature and film, performed drama, critical analysis and film production personnel. Also may include the following Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; high quality peer reviewed paper or project in format appropriate for discipline: presentation of research, in class or to a wider audience.

Prerequisite(s): WRT 102 or WRT 108.

Information: Must qualify for Honors program. Faculty or Advisor approval is required before enrolling in this course.

Offered: Fall.

Logistics and Supply Chain Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

LGM 101 Principles of Logistics and Supply Chain Management

3 cr. hrs. 3 periods (3 lec.)

Introduction to the field of logistics and supply chain management. Includes development of logistics systems, careers in logistics, distribution planning, supply chain security, and customer service. Also includes roles and functions of: purchasing, inventory control, physical distribution, warehousing, transportation methods, packaging, and customs.

Offered: Fall, Spring.

LGM 102 Inventory Control

3 cr. hrs. 3 periods (3 lec.)

A study of inventory control concepts and techniques. Includes, cost concepts, determining size and nature of inventory, forecasting, and inventory planning and control. Also includes ordering methods, controlling pilferage, and matching customer demand with supply.

Offered: Spring.

LGM 103 Contracts and Freight Claims

3 cr. hrs. 3 periods (3 lec.)

A study of the considerations involved in the drafting and negotiation of freight and logistics contracts, and of loss avoidance and mitigation in transit. Includes legal and regulatory requirements applicable to contracts for product transportation, and logistics functions and considerations for drafting and negotiating contracts with freight carriers, warehousemen and other logistics service providers. Also includes customer satisfaction, claim preparation, filing procedures, and claim dispute resolution.

Offered: Spring.

LGM 104 Computerized Logistics

3 cr. hrs. 4 periods (2 lec., 2 lab)

Analysis of the use of computers in the logistics industry and an introduction to available logistics software. Includes the need for computers, the history and future of computers in the logistics industry, and the impact of computers on customer service. Also includes logistics software availability, selection and implementation, and security measures.

Offered: Spring.

LGM 105 Warehouse Management

3 cr. hrs. 3 periods (3 lec.)

Survey of warehouse function, process, organization and operations. Includes analysis of warehouse location, operation, and management. Also includes controls and procedures, financial analysis, security, cargo/materials handling, and productivity.

Offered: Fall.

LGM 106 Transportation and Traffic Management

3 cr. hrs. 3 periods (3 lec.)

A study of the domestic freight transportation system. Includes demand for freight movement, laws, regulations, pricing, and policies. Also includes traffic management, customer service, security, and international transportation issues.

Offered: Fall.

LGM 107 Introduction to Purchasing

3 cr. hrs. 3 periods (3 lec.)

Survey of basic purchasing functions. Includes establishing requirements and quantities, developing policies and procedures for purchasing, making purchasing decisions, receiving acceptable goods, arranging packaging and shipping, and managing inventory levels.

Offered: Fall.

LGM 108 International Logistics

3 cr. hrs. 3 periods (3 lec.)

An introduction to the role of logistics in global business. Includes the economic and service characteristics of international transportation providers, the government's role, documentation and terms of sale used in global business, and the fundamentals of effective export and import management.

Offered: Spring.

LGM 109 Readiness Skills for Logistics Careers

1 cr. hrs. 1 periods (1 lec.)

Development of career and learning goals. Includes learning and the world of work, careers in Logistics, and skill development in context. Also includes a focus on the common requirements of all jobs, the skills basic to employment success, and the formal and informal learning necessary for career advancement.

Offered: Spring.

LGM 190 Logistics and Supply Chain Internship

3 cr. hrs. 11 periods (1 lec., 10 lab)

Culmination of logistics program. Includes guidelines and procedures for workplace learning, application of learned concepts on the job. Also includes initiation, management, and completion of capstone project.

Information: Consent of instructor is required before enrolling in this course.

Information: Students must complete 125 hours at a program-approved employer worksite.

Offered: Fall, Spring, Summer.

LGM 196 Independent Study in Logistics and Supply Chain Management

3 cr. hrs. 3 periods (3 lec.)

Independent study projects or applied special interest projects in logistics and supply chain management under the supervision of a faculty member.

Prerequisite(s): LGM 101 and LGM 105, 106, or 107.

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

Machine Tool Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MAC 100 Introduction to Machine Tool

3 cr. hrs. 3 periods (3 lec.)

Principles and procedures for basic machine tool operations. Includes careers in manufacturing, machine tool history, safety, materials, manufacturing process planning, measurement, layout tools and procedures, principles of metal cutting, bench and hand tools, power saws, drill presses, and abrasive machine.

Offered: Fall, Spring, Summer.

MAC 110 Manual Machine Shop

4 cr. hrs. 6 periods (2 lec., 4 lab)

Introduction to basic machine shop practices. Includes safety, lathes, vertical milling machines, and grinding machines.

Prerequisite(s): MAC 100.

Information: Prerequisite may be waived with a score of 80% or better on the Machine Tool assessment test. See a machine tool instructor or advisor for prerequisite information.

Offered: Fall, Spring.

MAC 120 Machine Shop II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of MAC 110. Includes a more in depth application of safety, lathes, milling machines, and grinding machines.

Prerequisite(s): MAC 110 or equivalent with department advisor approval.

Offered: May not be offered this year, check class schedule.

MAC 125 Mechanical Inspection

4 cr. hrs. 6 periods (2 lec., 4 lab)

Principles and applications of dimensional measurement. Includes line graduated measuring instruments, fixed gages, gauge blocks, comparative measurements, optical comparators and projectors, angle measurement, straightness, flatness, and perpendicularity measurement, and coordinated measuring machines.

Prerequisite(s): GTM 105 and MAC 110.

Information: Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

MAC 130 Machine Setup and Fixture Making

3 cr. hrs. 5 periods (1 lec., 4 lab)

Concepts, techniques, and skills in machine setup. Includes how to translate blueprints into fixture making; the application of machine setup; and the making of fixtures.

Prerequisite(s): MAC 110.

Information: Prerequisite may be waived with industry experience. See a machine tool faculty instructor for prerequisite information.

Offered: Fall, Spring.

MAC 140 Introduction to Electrical Discharge Machining

4 cr. hrs. 6 periods (2 lec., 4 lab)

Application of electrical discharge machining (EDM) in industry today. Includes overview of EDM, EDM machines and processes, spark generation and dielectric fluids, electrodes, and surface finishes.

Prerequisite(s): MAC 110.

Information: Prerequisite may be waived with Industry experience. See a machine tool instructor for prerequisite information.

Offered: May not be offered this year, check class schedule.

MAC 150 Computer Numerical Control (CNC) Mill Programming I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Operations and procedures for automated machining systems. Includes Numerical Control (NC) and Computer Numerical Control (CNC) machining system, positioning and coordinate systems used in NC/CNC programming, part programming, diagnosis and correction of programming errors, and programming procedures.

Prerequisite(s): GTM 105 and MAC 110.

Recommendation: Completion of CAD 101 before enrolling in this course.

Information: Industry experience may be substituted for prerequisite requirements. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

MAC 155 Computer Numerical Control (CNC) Mill Programming II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of MAC 150. Includes review of Computer Numerical Control (CNC), mill programming, diagnosis and correction of programming errors, advanced programming techniques use in production and prototype machining, introduction to lathe programming, and introduction to sub-programming.

Prerequisite(s): MAC 150.

Information: Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

MAC 160 Computer Numerical Control (CNC) Lathe Programming

4 cr. hrs. 6 periods (2 lec., 4 lab)

Operations and procedures for Computer Numerical Control (CNC) Lathe. Includes review of CNC concepts and programming, diagnosis and correction of programming errors, advanced programming for CNC Lathes, and introduction to Computer-Aided Manufacturing (CAM) programs.

Prerequisite(s): GTM 105 and MAC 150.

Information: Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

MAC 245 Wire Electrical Discharge Machining and Programming

4 cr. hrs. 6 periods (2 lec., 4 lab)

Operations and procedures for EDM machining system. Includes wire EDM overview, EDM operating processes, EDM machine functions, EDM manual part programming, and EDM machining operations.

Prerequisite(s): MAC 140 and 150.

Offered: May not be offered this year, check class schedule.

MAC 257 Computer-Aided Machining CAM I

4 cr. hrs. 6 periods (2 lec., 4 lab)

Computer-Aided Machining (CAM) I Programming automated machine tools using Computer-Aided Manufacturing (Mastercam) software. Includes review of Computer Numerical Control (CNC) and Computer-Aided Drafting (CAD), introduction to a CAM environment, creating geometry, operating manager, and code generation.

Prerequisite(s): MAC 155.

Information: Prerequisite may be waived with industry experience. See a machine tool instructor for prerequisite information.

Offered: Fall, Spring.

MAC 258 Computer-Aided Machining (CAM) II

4 cr. hrs. 6 periods (2 lec., 4 lab)

Continuation of MAC 257. Includes profile surface, 3D surfaces, editing surfaces and preparing geometry for wire part.

Prerequisite(s): MAC 257.

Offered: Fall.

MAC 259 Computer-Aided Machining (CAM) III: Solid Modeling

4 cr. hrs. 7 periods (1 lec., 6 lab)

Continuation of MAC 258. Includes profile surfaces of tool path, solid model features in three-dimension (3-D), and editing solid model surfaces.

Prerequisite(s): MAC 258.

Offered: Spring.

MAC 275 Applied Metallurgy

4 cr. hrs. 6 periods (2 lec., 4 lab)

Application of metallurgical concepts, procedures, and testing. Includes materials, alloy classification systems, industrial and manufacturing concepts, properties and testing, and industrial and manufacturing processes and applications.

Offered: Fall, Spring.

MAC 296 Machine Tool Independent Projects

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes establishing objectives, procedures and a method of evaluation.

Information: May be taken sixteen times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor must be obtained before enrolling in this course.

Offered: May not be offered this year, check class schedule.

Management

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MGT 110 Human Relations in Business and Industry

3 cr. hrs. 3 periods (3 lec.)

Examination of human relations as it relates to business and industry. Includes the roles of the employees, supervisors, and management. Also includes management concepts and functions, communication, leadership, managing change and stress, human motivation, creativity, diversity and culture, and decision making.

Offered: Fall, Spring, Summer.

MGT 122 Supervision

3 cr. hrs. 3 periods (3 lec.)

Theories and concepts of supervision. Includes the role of the supervisor, management concepts and functions, communication, managing change and stress, human motivation, building relationships, supervision of groups, leadership and management styles, selection, orientation, training, appraisal, and discipline. Also includes complaints, grievances, working with the union, security, safety, and health at work.

Recommendation: It is recommended that students complete MGT 110 before enrolling in this course.

Information: This course consists of study and application. The student will first review all of the major concepts in supervision.

The student will then utilize all of the major concepts presented to examine and evaluate a series of case studies. At the end of the course, a final and cumulative case study will be evaluated.

Offered: Fall, Spring, Summer.

MGT 124 Small Business Management

3 cr. hrs. 3 periods (3 lec.)

Analysis of the practical problems of organizing, managing and starting a small business. Includes introduction and overview, selecting employees, forms of ownership, managing the business, business plan, pricing, managing cash flow, creating sales forecast, income statements, breakeven analysis, source of funds, international operations, contract, risk, and international opportunities.

Offered: Fall, Spring.

MGT 130 Retail Analysis

3 cr. hrs. 3 periods (3 lec.)

Overview of retail analysis that emphasizes the financial performance and standards used within the retailing industry. Includes the fundamentals of business analysis and managing the company's strategic service direction with a focus on the company's business model and its strategic performance. Also includes customer/supplier interactions, quality indicators, cash and profit, fundamentals of business analysis, financial literacy and transparency signs, and service quality benchmarking process.

Recommendation: Completion of ACC 211 and MKT 139 before enrolling in this class.

Offered: Spring.

MGT 135 International Management

3 cr. hrs. 3 periods (3 lec.)

Overview of concepts and techniques for international management. Includes topics in international management such as cultural and ethical issues faced by managers in the international marketplace. Also includes the functional areas of international business such as human resources, communication, culture, and business practices.

Offered: Fall, Spring.

MGT 230 Dynamics of Leadership

3 cr. hrs. 3 periods (3 lec.)

Overview of the theoretical and applied foundations of leadership. The theoretical component includes the historical and contemporary theories and models of leadership, effective followership, multiculturalism, and ethics. The applied component includes the importance and use of vision and mission, inclusive leadership practices, responding to change, developing a personal philosophy of leadership, and creating a personal profile of strengths and assets. Communication and facilitation skills will be practiced with the completion of a leadership project.

Information: Same as STU 230.

Offered: Fall, Spring.

MGT 270 Computer Applications for Managers

3 cr. hrs. 3 periods (3 lec.)

Development of management skills in computer applications for business. Includes state of computing technology, electronic commerce and the economy, international issues, work and the virtual workplace, project management, and presentations.

Recommendation: Completion of CIS/CSA 104 Computer Fundamentals or proficiency with Microsoft Office software before enrolling in this course.

Offered: Fall.

MGT 276 Human Resources

3 cr. hrs. 3 periods (3 lec.)

Practical aspects of personnel management and support. Includes roles and concepts, acquiring human resources, administering the personnel program, developing employee potential, employee retention, equal employment opportunities, staffing and training, labor relations, and future outlook for personnel management.

Recommendation: Completion of BUS 100 before enrolling in this course.

Offered: Fall, Spring, Summer.

MGT 280 Business Organization and Management

3 cr. hrs. 3 periods (3 lec.)

Overview of the functions performed and issues faced by managers in business. Includes managers and management, the managerial environment, planning and decision support systems, project management, managerial control, and leadership. Also includes motivation and performance, control, and creating and sustaining high performance teams.

Recommendation: Completion of BUS 100 and any other MGT course before enrolling in this course.

Offered: Fall, Spring, Summer.

Marketing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MKT 100 Customer Service Skills

3 cr. hrs. 3 periods (3 lec.)

Overview of the behavior exhibited by successful customer service professionals featuring simulated business settings. Includes conventional behaviors of the workplace, professional communication in the customer service setting, grooming and clothing for a business setting, telephone and email service, effective answers to sales questions, punctuality and the work ethic, professionalism in the workplace, basic qualitative activities, behavior with co-workers, customer service challenges, exceptional customer service, and career advancement strategies in customer service.

Offered: Fall, Spring.

MKT 105 Retail Math

3 cr. hrs. 3 periods (3 lec.)

Develop merchandising and purchasing policies, procedures, concepts, practices and formulas used in retailing with an emphasis on retail mathematics. Includes how to apply a six-month stock and sales plan setting for retail business.

Prerequisite(s): Within the last three years: MAT 086 with a C or better or MAT 089 through module 15 or required score on the mathematics assessment test.

Offered: May not be offered this year, check class schedule.

MKT 111 Principles of Marketing

3 cr. hrs. 3 periods (3 lec.)

Introduction to marketing communication, principles, and strategies. Includes global diversity in the marketing environment, product classification, pricing considerations, distribution of products/services, and promotion using traditional and social media strategies.

Offered: Fall, Spring.

MKT 113 Salesmanship

3 cr. hrs. 3 periods (3 lec.)

Basic principles and techniques of selling and their practical application. Includes selling as a profession, preparation for relationship selling, the selling process, and planning and managing a sales territory.

Offered: Spring.

MKT 125 Advertising

3 cr. hrs. 3 periods (3 lec.)

Advertising principles and concepts as applied in a business setting. Includes advertising perspectives, developing marketing and advertising strategies, creating advertisements and commercials, and advertising media mix.

Offered: Fall.

MKT 139 Retailing

3 cr. hrs. 3 periods (3 lec.)

Business activities of selling goods and services to final customers. Includes overview of the industry of retailing, environmental framework, consumer demographics and behavior, retail outlet characteristics, the retailing mix, retail information and control systems, the changing nature of retailing, and retailing careers.

Offered: Fall.

MKT 140 Fashion Merchandising

3 cr. hrs. 3 periods (3 lec.)

Overview of enterprises involved in clothing and accessories. Includes design, production, and sourcing of fashion; marketing, distribution, and the fashion consumer; different silhouettes of apparel and textile characteristics, methods of research for retailing, careers in fashion merchandising, and case studies. Also includes a managerial perspective on apparel product quality and profit in a retail setting.

Offered: Fall.

MKT 196 Independent Study in Marketing and Business

.5-3 cr. hrs. 1.5-9 periods (1.5-9 lab)

Student independently continue their studies in Marketing and Business under the supervision of a faculty member.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

MKT 240 Fashion Merchandising Planning and Control

4 cr. hrs. 4 periods (4 lec.)

Survey of analytical skills for the process of merchandising. Includes evaluation of merchandise in clothing sales, merchandise planning, developing the presentation of apparel lines, and finalizing apparel lines through merchandising and budget review. Also includes the application of Web PDM.

Prerequisite(s): MKT 140.

Offered: Spring.

MKT 290 Apparel Merchandising Internship

3 cr. hrs. 15 periods (15 lab)

Volunteer apparel merchandising field experience at an approved work site. Includes development of a business plan, retail strategies, internship goals and evaluation, and report of day-to-day operations.

Prerequisite(s): MKT 240.

Information: Enrollment and placement contingent upon earned grade point average for students in their final semester of the Apparel Merchandising program. Application and acceptance required.

Offered: May not be offered this year, check class schedule.

Mathematics

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MAT 082 Basic Mathematics

3 cr. hrs. 3 periods (3 lec.)

Fundamentals and applications of arithmetic. Includes operations on whole numbers, fractions, decimal numbers, ratio and proportion, percent, and measurement.

Offered: May not be offered this year, check class schedule.

MAT 086 Prealgebra

3 cr. hrs. 3 periods (3 lec.)

Transition from arithmetic to algebra. Includes signed numbers, commutative, associative, and distributive laws, order of operations, algebraic expressions, polynomials, fractions, and linear equations. Also includes percents, ratio and proportion, graphing, perimeter, area, volume, and optional topics.

Prerequisite(s): Within the last three years: MAT 082 with a C or better or required score on the Mathematics assessment test.

Information: Access to a scanner required for Math class taken online.

Offered: Summer.

MAT 089A Foundational Studies in Mathematics

3 cr. hrs. 3 periods (3 lec.)

Fundamentals and applications of basic math, elementary algebra, and intermediate algebra.

Information: The course content is offered in 35 modules which are divided between MAT 089A and MAT 089B. They are computer delivered in a structured, individualized learning environment with on-demand instruction assistance. Attendance at regularly scheduled classes is required. The course may be taken two times for a maximum of six credit hours. To earn a passing grade, students must successfully complete a minimum of 9 modules.

Offered: Fall, Spring, Summer.

MAT 089B Foundational Studies in Mathematics II

3 cr. hrs. 3 periods (3 lec.)

Continuation of the fundamentals and applications of basic math, elementary algebra, and intermediate algebra.

Prerequisite(s): MAT 089A.

Information: The course content is offered in 35 modules which are divided between MAT 089A and MAT 089B. They are computer delivered in a structured, individualized learning environment with on-demand instruction assistance. Attendance at regularly scheduled classes is required. The course may be taken two times for a maximum of six credit hours. To earn a passing grade, students must successfully complete a minimum of 9 modules.

Offered: Fall, Spring.

MAT 092 Elementary Algebra

3 cr. hrs. 3 periods (3 lec.)

Introduction to basic algebra. Includes translating written statements into algebraic expressions, linear equations, linear inequalities, graphing, integer exponents, and polynomials. Also includes factoring, simple rational expressions, square roots, quadratic equations, and optional topics.

Prerequisite(s): Within the last three years: MAT 086 with a grade of C or better, completion of Mini-mod 22 in MAT 089A or 089B, or satisfactory score on the mathematics assessment test.

Offered: Fall, Spring, Summer.

MAT 095 Pre-College Algebra

5 cr. hrs. 5 periods (5 lec.)

Basic and intermediate algebra concepts. Includes translating written statements into algebraic expressions, linear equations, linear inequalities, graphing, integer exponents, and polynomials. Also includes factoring, rational and radical expressions and equations, square roots, quadratic equations, functions, exponential and logarithmic expressions.

Prerequisite(s): Within the last three years: MAT 086 with a B or better or required score on the mathematics assessment.

Information: Access to a scanner required for Math classes taken online.

MAT 097 Intermediate Algebra

3 cr. hrs. 3 periods (3 lec.)

Basic algebraic functions. Includes lines in the plane, systems of linear equations, inequalities, absolute value, polynomials, rational expressions and equations, and radical expressions and equations. Also includes quadratic equations, literal equations, exponents and logarithms, functions, and optional topics.

Prerequisite(s): Within the last three years: C or better in MAT 092 or satisfactory score on the mathematics assessment exam.

Information: Access to a scanner required for Math classes taken online.

Offered: Fall, Spring, Summer.

MAT 106 Elementary Data Analysis with Spreadsheets

2 cr. hrs. 2 periods (2 lec.)

Introduction to statistics. Includes the collection and presentation of data, statistical measures, algebra topics, Excel topics, and data analysis topics.

Prerequisite(s): Within the last three years: MAT 086 with a C or better or MAT 089A or 089B through Module 15 or required score on the mathematics assessment test.

Offered: Fall, Spring.

MAT 108 Practical Geometry and Trigonometry

2 cr. hrs. 2 periods (2 lec.)

Fundamentals of geometry and trigonometry with applications. Includes basic geometric properties, properties of triangles, Pythagorean Theorem and special triangles, polygons, circles, volumes, radian measure, trigonometric functions, and oblique triangles.

Prerequisite(s): Within the last three years: MAT 086 with a C or better or MAT 089A or 089B through Module 15 or satisfactory score on the mathematics assessment test.

Offered: May not be offered this year, check class schedule.

MAT 142 Topics in College Mathematics

3 cr. hrs. 3 periods (3 lec.)

Survey of mathematical topics and applications. Includes application of mathematics to the social services, management science, growth, and probability and statistics.

Prerequisite(s): Within the last three years: MAT 095, 097, 122, 122Z, or 123 with a C or better or required score on the mathematics assessment exam.

Offered: Fall, Spring, Summer.

MAT 145 Mathematics for Game Design

4 cr. hrs. 4 periods (4 lec.)

Survey of mathematical topics and applications as applied to game design. Includes 2D and 3D geometry, geometric symmetry, trigonometry, vectors, logic, probability, statistics, and problem solving.

Prerequisite(s): Within the last three years: MAT 095, 097, 122, 122Z or 123 with a C or better, or satisfactory score on the Mathematics assessment exam.

Offered: Summer.

MAT 146 Mathematics for Elementary Teachers I

3 cr. hrs. 3 periods (3 lec.)

An overview of mathematical concepts, principles and applications specifically for elementary teachers. Includes real number properties and patterns, arithmetic operations and algorithms in subsets of real numbers, alternative numbers systems, set theory, and algebraic reasoning and problem solving. Also includes the technology to teach mathematics.

Prerequisite(s): Within the last three years: MAT 142 or 151 or higher with a C or better, or mathematics assessment into MAT 167 or higher.

Information: Access to a scanner required for math classes taken online.

Offered: Fall, Spring, Spring.

MAT 147 Mathematics for Elementary Teachers II

3 cr. hrs. 3 periods (3 lec.)

Continuation of MAT 146. Includes measurement, basic geometry, probability, and statistics. Also includes the technology to teach mathematics.

Prerequisite(s): Within the last three years: MAT 146 with a C or better.

Information: Access to a scanner required for math classes taken online.

Offered: Fall, Spring, Summer.

MAT 151 College Algebra

4 cr. hrs. 4 periods (4 lec.)

Introduction to college-level algebra. Includes functions, exponential and logarithmic functions, linear 2x2 and higher systems, graphing, and calculator use. A graphing calculator is required.

Prerequisite(s): Within the last three years: MAT 095, 097, 122, 122Z, or 123 with a C or better, or required score on the Mathematics assessment test.

Information: Credit for only one course will be awarded to students completing MAT 151 and MAT 188. See course description or advisor to choose your best option. No more than 7 credits may be applied toward graduation from the following list of courses: MAT 151, 182, 187, 188, and 189. A graphing calculator is required. See your instructor for details. Access to a scanner required for math classes taken online.

Offered: Fall, Spring, Summer.

MAT 167 Introductory Statistics

3 cr. hrs. 3 periods (3 lec.)

Introduction to statistics. Includes the nature of statistics, quantitative data, probability, probability distributions and the central limit theorem. Also includes estimates for population parameters, hypothesis testing, correlation with regression, and additional topics with choices from chi square distribution, ANOVA and/or nonparametric methods.

Prerequisite(s): Within the last three years: MAT 151 with a C or better, or required score on the Mathematics assessment test.

Information: Use of a graphing calculator and/or computer programs may be required at the discretion of the instructor. Access to a scanner required for math classes taken online.

Offered: Fall, Spring, Summer.

MAT 172 Finite Mathematics

3 cr. hrs. 3 periods (3 lec.)

Sampling of finite mathematics which includes mathematics of finance, linear business functions, systems of equations, matrices, geometric and simplex methods of solving linear programming problems, logic, sets, combinatorics, basic probability, probability distributions, and Markov chains.

Prerequisite(s): Within the last three years: C or better in MAT 151 or satisfactory score on the mathematics assessment exam.

Offered: Fall, Spring, Summer.

MAT 188 Precalculus I

4 cr. hrs. 4 periods (4 lec.)

College-level algebra. Includes equations, algebraic and transcendental functions, inequalities, systems of equations, and calculator use. Also includes intensive preparation for analytic geometry and calculus.

Prerequisite(s): Within the last three years: MAT 097 with a C or better, or required score on the Mathematics assessment test.

Recommendation: This course is intended for students who plan to continue to Calculus.

Information: Credit for only one course will be awarded to students completing MAT 151 and MAT 188. See course description or advisor to choose your best option. No more than 7 credits may be applied toward graduation from the following list of courses: MAT 151, 182, 187, 188, and 189. A graphing calculator is required for this course and will be used extensively.

Offered: Fall, Spring, Summer.

MAT 189 Precalculus II

3 cr. hrs. 3 periods (3 lec.)

College-level trigonometry. Includes trigonometric functions, vectors, conic sections, sequences and series, and calculator use. Also includes intensive preparation for analytic geometry and calculus.

Prerequisite(s): Within the last three years: MAT 188 with a C or better, or satisfactory score on the mathematics assessment test.

Recommendation: This course is intended for students who plan to continue with Calculus.

Information: Credit for only one course will be awarded to students completing MAT 182 and MAT 189. See course description or advisor to choose your best option. No more than 7 credits may be applied toward graduation from the following list of courses: MAT 151, 182, 187, 188, and 189. A graphing calculator is required for this course and will be used extensively.

Offered: Fall, Spring, Summer.

MAT 212 Topics in Calculus

3 cr. hrs. 3 periods (3 lec.)

Introductory topics in differential and integral calculus to include limits, continuity, differentiation, and integration of functions with particular emphasis on business applications. Microsoft Excel and/or graphing calculators will be used as tools for further understanding of these concepts.

Prerequisite(s): Within the last three years: C or better in MAT 151 or satisfactory score on the mathematics assessment exam.

Information: A graphing calculator (technology) is required. See your instructor for details.

Offered: Fall, Spring, Summer.

MAT 220 Calculus I

5 cr. hrs. 5 periods (5 lec.)

Introduction to analytical geometry and calculus. Includes limits and continuity, derivatives, applications of the derivative, and integration.

Prerequisite(s): Within the last three years: MAT 187; or MAT 188, and 189 with a C or better; or required score on the Mathematics assessment exam.

Information: Students who have completed MAT 151 between Summer 2012 and Summer 2015 and MAT 182 between Fall 2012 and Fall 2015 will have met the prerequisite for MAT 220.

Offered: Fall, Spring, Summer.

MAT 220HC Calculus I: Honors

5 cr. hrs. 5 periods (5 lec.)

Introduction to analytical geometry and calculus. Includes limits and continuity, derivatives, applications of the derivative, and integration. Also includes additional Honors content.

Prerequisite(s): Within the last three years: MAT 187; or MAT 188, and 189 with a C or better; or required score on the Mathematics assessment exam.

Information: Students who have completed MAT 151 between Summer 2012 and Summer 2015 and MAT 182 between Fall 2012 and Fall 2015 will have met the prerequisite for MAT 220.

Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course. Honors Content: Intensive theoretical-based and/or application-based projects using highest standards and best practices for the discipline; team problem solving projects in formats appropriate for this discipline: presentation of results, in class or to a wider audience.

Offered: May not be offered this year, check class schedule.

MAT 227 Discrete Mathematics in Computer Science

4 cr. hrs. 4 periods (4 lec.)

Mathematical concepts applicable to computer science. Includes logic, set theory, counting techniques, proof techniques, relations and functions, binary relations, big-oh notation, mathematical induction, and recursion.

Prerequisite(s): Within the last three years: MAT 220 or higher with a C or better.

Recommendation: Completion of CIS 129 or programming experience is recommended prior to enrolling in this course.

Offered: May not be offered this year, check class schedule.

MAT 231 Calculus II

4 cr. hrs. 4 periods (4 lec.)

Continuation of MAT 220. Includes techniques and applications of integration, numerical integration, improper integrals, separable integrals, separable differential equations, sequences, infinite series, and other related topics.

Prerequisite(s): Within the last three years: MAT 220 with a C or better.

Offered: Fall, Spring, Summer.

MAT 231HC Calculus II: Honors

4 cr. hrs. 4 periods (4 lec.)

Continuation of MAT 220. Includes techniques and applications of integration, numerical integration, improper integrals, separable differential equations, sequences, infinite series, and other related topics. Also includes additional Honors content.

Prerequisite(s): Within the last three years: MAT 220 with a C or better.

Information: Must qualify for Honors program. Faculty or Advisor approval may be required before enrolling in this course.

Honors Content: Intensive theoretical-based and/or application-based projects using highest standards and best practices for the discipline; team problem solving projects in formats appropriate for this discipline: presentation of results, in class or to a wider audience.

Offered: May not be offered this year, check class schedule.

MAT 241 Calculus III

4 cr. hrs. 4 periods (4 lec.)

Continuation of MAT 231. Includes vectors in two and three dimensions, vector-valued functions, differentiation and integration of multivariable functions, and calculus of vector fields.

Prerequisite(s): Within the last three years: MAT 231 with a C or better.

Offered: Fall, Spring, Summer.

MAT 252 Introduction to Linear Algebra

3 cr. hrs. 3 periods (3 lec.)

Introduction to vector spaces and linear transformations. Includes systems of linear equations, vector spaces, inner product spaces, matrices, and linear transformations.

Prerequisite(s): Within the last three years: MAT 231 with a C or better.

Offered: Spring.

MAT 262 Differential Equations

3 cr. hrs. 3 periods (3 lec.)

Introduction to differential equations. Includes first order differential equations, higher order differential equations, systems of linear differential equations, Laplace transforms, and approximating methods. Also includes applications.

Prerequisite(s): Within the last three years: MAT 231 with a C or better.

Offered: Fall, Spring, Summer.

MAT 296 Independent Studies in Mathematics

1-4 cr. hrs. 1-4 periods (1-4 lec.)

Independent studies and projects in mathematics. Content to be determined by conference between student and instructor.

Information: Consent of a sponsoring instructor must be obtained before registering in this class.

Offered: May not be offered this year, check class schedule.

Medical Assistant

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MDA 120 Medical Assistant Profession

2 cr. hrs. 2 periods (2 lec.)

Overview of current health care professions, including labor market information, health care delivery systems, and health care payment sources. Includes health organization structure, patient rights and quality care, ethics and behaviors in the workplace, legal issues in health care, and personal responsibility for health and safety. Also includes basic communication skills, teamwork facilitation, student success skills, and college resources for students.

Offered: Contact department at 206-5100.

MDA 121 Medical Assistant Skills for Success

2 cr. hrs. 2 periods (2 lec.)

Professional and personal success tools, skills, and resources for medical assistants. Includes exploration of career options, job search skills, and portfolio development. Also includes wellness and safety, critical thinking, time management, stress management, self-esteem, gender awareness, assertiveness training, and the investigation of useful community resources.

Offered: Contact department at 206-5100.

MDA 122 Medical Assistant Clinical Care

2 cr. hrs. 4 periods (1 lec., 3 lab)

Multi-discipline approach to patient care. Includes asepsis, phlebotomy, electrocardiograms, dressing care, specimen collection and handling, urinalysis, whole blood hematology, glucose monitoring, and cholesterol and coagulation testing. Also includes principles of medication with an emphasis on oral and parenteral routes of drug administration. Also includes legal and ethical standards, and compliance with Occupational Health and Safety Administration (OSHA) and Clinical Laboratory Improvement Amendments (CLIA) regulations.

Offered: Contact department at 206-5100.

MDA 123 Medical Assistant Clinical Procedures

3 cr. hrs. 5 periods (2 lec., 3 lab)

Principles and procedures for the medical assistant. Includes methods of assisting clinicians with physical examinations, procedures, treatments, and minor surgical procedures in the medical office. Also includes collecting vital signs; height, weight, and other patient data; and appropriate documentation for the completion of patient histories.

Offered: Contact department at 206-5100.

MDA 124 Medical Terminology for Health Care Workers

2 cr. hrs. 2 periods (2 lec.)

Medical terminology used in health care, including descriptors of special care populations and specialty services. Encompasses a body systems approach to terms as they relate to structures, functions, diseases, procedures, and diagnostic tests. Also encompasses medical abbreviations and symbols, spelling, and building and analyzing terms using word parts.

Offered: Contact department at 206-5100.

MDA 125 Orientation to ICD-9 Coding

3 cr. hrs. 5 periods (2 lec., 3 lab)

Orientation to the International Classification of Diseases - 9th Edition (ICD-9) coding classification system. Includes terminology, principles and components of the ICD-9 system, codes for diseases and conditions, coding from health records, and coding for the highest specificity.

Recommendation: Completion of MDA 121 and 124 before enrolling in this course. Also a minimum of 25 words per minute word processing skills.

Offered: Contact department at 206-5100.

MDA 126 Medical Billing and Insurance for Medical Assistants

3 cr. hrs. 5 periods (2 lec., 3 lab)

Application of insurance, billing, and coding in the medical profession. Includes federal, state and private insurance claims; procedural and diagnostic coding; and banking and accounting principles. Also includes legal and ethical issues.

Recommendation: Minimum of 25 words per minute word processing skills.

Offered: Contact department at 206-5100.

MDA 127 Administrative Procedures for Medical Assistants

3 cr. hrs. 5 periods (2 lec., 3 lab)

Principles and procedures for front office administration. Includes telephone policy and customer service, correspondence and mail processing, appointment scheduling, medical records management and data collection. Also includes an overview of the medical assistant as office manager.

Offered: Contact department at 206-5100.

MDA 190A Medical Assistant Front Office Externship

1 cr. hrs. 5 periods (5 lab)

Practicum in administrative medical assisting. Application of administrative duties, procedures, and knowledge derived from medical assisting courses.

Prerequisite(s): HCA 119, MDA 120, 121, 124, 125, 126 and 127.

Information: Permission of the program director is required to enroll in this course.

Offered: Contact department at 206-5100.

MDA 190B Medical Assistant Back Office Externship

1 cr. hrs. 5 periods (5 lab)

Practicum in clinical medical assisting. Application of clinical skills, procedures, and knowledge derived from medical assisting courses.

Prerequisite(s): HCA 103, 119, MDA 120, 121, 122, 123 and 124.

Information: Permission of the program director is required to enroll in this course.

Offered: Contact department at 206-5100.

Medical Laboratory Technician

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MLT 101 Phlebotomy for Medical Laboratory Technology

3 cr. hrs. 5 periods (2 lec., 3 lab)

Theory and practice of basic phlebotomy techniques and procedures. Includes blood collection for patient care, quality assurance standards, medical terminology, anatomy, blood collection procedures, variables, computers and specimen processing, and point of care (POC) testing.

Prerequisite(s): BIO 156IN or 160IN or 201IN or 202IN.

Information: Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

Offered: Spring.

MLT 199 Introductory Co-op: Phlebotomy Lab Assisting

1 cr. hrs. 1 periods (1 lec.)

Principles of job success. Includes laboratory workplace skills, communication skills, time and energy management, managing stress, career information, preparing for employment; principles, theories, and practices in the career field; and problems in the work situation.

Prerequisite(s): MLT 101.

Corequisite(s): MLT 199WK

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

MLT 199WK Introductory Co-op Work: Phlebotomy Lab Assisting

1.25 cr. hrs. 6.25 periods (6.25 lab)

A supervised cooperative work program for students in an occupation related area. Clinical coordinators work with students and their preceptors in a hospital, clinic laboratory, or outpatient collection station. The student develops competency and improved self-confidence when collecting and processing blood, urine or other body fluid samples in the laboratory workplace.

Prerequisite(s): MLT 101.

Corequisite(s): MLT 199

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

MLT 200 Urinalysis/Body Fluids

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the fundamental clinical lab techniques of urine and body fluids. Includes collection, physical and chemical examination, microscopic examination, body fluids, and individual fluids.

Information: Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

Offered: Fall.

MLT 211 Hematology

5 cr. hrs. 7 periods (4 lec., 3 lab)

The study of red cells, white cells, and platelets looking at structure, formation, and the diseases associated with these cells. Includes types of blood cells, tests, normal and abnormal blood cells, maturation, disease states, hemoglobins, hemoglobinopathies, hemostasis, coagulation, fibrinolytic system, instrumentation, and quality controls and assurance.

Information: Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

Offered: Spring.

MLT 221 Clinical Chemistry

4 cr. hrs. 6 periods (3 lec., 3 lab)

Fundamentals of chemistry in a clinical setting. Includes chemical substances, instruments, laboratory procedures, blood and urine chemistry abnormalities, and laboratory instrument computers and information systems.

Information: Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

Offered: Spring.

MLT 231 Immunohematology/Immunology

5 cr. hrs. 7 periods (4 lec., 3 lab)

Introduction to basic immunology related to methods utilized in the clinical laboratory. Includes blood collection, blood components, immunology and complement, principles of seriological testing, genetics, blood group systems, antiglobulin testing, gel and solid phase testing, and identification of unexpected antibodies. Also includes neonatal and obstetrical transfusion practice, pre-transfusion compatibility testing, International Society of Blood Transfusion (ISBT) product labeling, adverse effects of blood transfusions, positive direct antiglobulin test (DAT), immune hemolysis, quality assurance, transplantation, and molecular testing.

Information: Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

Offered: Fall.

MLT 251 Clinical Microbiology

5 cr. hrs. 9 periods (3 lec., 6 lab)

Introduction to the structure, identification, and control of bacteria. Includes categories and classification of bacteria, ecology and spread of bacteria, pathogenesis of bacterial infections, clinical bacteriology methodology, various organisms, clinically significant anaerobic bacteria, methods in antimicrobial testing, mycobacteria, viruses and other microorganisms, and local disease processes.

Information: Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

Offered: Fall.

MLT 260 Parasitology and Immunology/Serology

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to the basics of mycology and parasitology host relationships and their effects. Includes fungi, medical parasitology, specimen collection, techniques for examination, special techniques, other specimens, detecting and diagnosis of parasitic infections, clinically important parasites, and immunology and seriological testing.

Information: Students must be admitted to the Medical Laboratory Technician program or obtain consent of instructor before enrolling in this course.

Offered: Spring.

MLT 299 Advanced Co-op: Medical Laboratory Technician

1 cr. hrs. 1 periods (1 lec.)

Comprehensive review of course work to prepare the student for national certifying examinations, provide a forum for discussion of current issues and technologies in clinical laboratory science, and augment the concurrent clinical experience. Students share their experience in the clinical area through discussion of topics of interest and presentation of case studies.

Prerequisite(s): MLT 101, 199/199WK, 200, 211, 221, 231, 251 and 260.

Corequisite(s): MLT 299WK

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

MLT 299WK Advanced Co-op Work: Medical Laboratory Technician

8 cr. hrs. 40 periods (40 lab)

A supervised cooperative work program for students in an occupation related area. Teacher-coordinators work with students and their supervisors in a hospital or clinic laboratory. The student develops competency and improved self confidence in the laboratory workplace.

Prerequisite(s): MLT 101, 199/199WK, 200, 211, 221, 231, 251 and 260.

Corequisite(s): MLT 299

Information: Consent of instructor is required before enrolling in this course.

Offered: Fall, Spring, Summer.

Mexican-American Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MAS 201 La Chicana

3 cr. hrs. 3 periods (3 lec.)

Interdisciplinary analysis of Chicanas/Mexicanas' status in the United States. Includes Chicana/Mexicana scholarship and Social Justice Movements, and Chicana/Mexicana feminism in the Southwest, Chicana/Mexicana community empowerment, Chicanas/Mexicanas on the U.S.-Mexico border.

Information: Same as GWS 201.

Offered: May not be offered this year, check class schedule.

Music

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MUS 100 Guitar I

2 cr. hrs. 2 periods (2 lec.)

Development of the principles of guitar playing with emphasis on a variety of styles and guitar repertoire. Includes parts of the guitar, music symbols, tuning, playing position, right and left hand techniques, notes on the first through third strings, notes on the fourth string, thumb technique, chord strumming, and right-hand arpeggio patterns. Also includes notes on the fifth and sixth strings, sharps and flats, twelve (12) bar blues, right hand chord technique, and open position chords.

Offered: Fall, Spring.

MUS 101 Guitar II

2 cr. hrs. 2 periods (2 lec.)

Continuation of MUS 100. Includes more detailed development of guitar skills, musicianship, sight-reading, repertoire development, ensemble playing, and improvisation.

Prerequisite(s): MUS 100.

Information: Prerequisites may be waived with consent of instructor.

Offered: Fall, Spring.

MUS 102 Music Fundamentals

3 cr. hrs. 3 periods (3 lec.)

Introduction to fundamentals of music designed to develop basic literacy in music. Includes definitions and notation, rhythm and meter, intervals, scales and transposition, key signatures, triads, chords and harmony, and simple forms.

Recommendation: Students considering music as a major are encouraged to concurrently enroll in MUS 102 and 106.

Offered: Fall, Spring, Summer.

MUS 103 Music Theory Review

1 cr. hrs. 1 periods (1 lec.)

Intensive review of music fundamentals. Includes clefs and basic pitch notation, scales, key signatures, intervals, and triads.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

MUS 105 Introduction to Piano (Non Major)

2 cr. hrs. 2 periods (2 lec.)

Basic principles and techniques of piano playing in a group situation. Includes study of major/minor scales and key signatures, chords, repertoire pieces, and learning and practice methods. Also includes transposition of simple compositions, sight reading, and harmonizations of melodies.

Information: Designed for non-music majors.

Offered: Fall, Spring.

MUS 106 Introduction to Ear Training

2 cr. hrs. 2 periods (2 lec.)

Ear training for individuals with little or no musical background. Includes identification of keys on a piano keyboard and notes on the musical staff, visual and aural recognition of intervals, dictation and performance of rhythmic patterns, and sight singing of melodies. Also includes major and minor key signatures and scales, singing of major and minor scales, intervals, aural identification of individual pitches, and listening to short melodic figures.

Recommendation: Students considering music as a major are encouraged to take MUS 102 and 106 concurrently.

Offered: Fall, Spring.

MUS 108 Pima Jazz Band

2 cr. hrs. 3 periods (1 lec., 2 lab)

Rehearsal and performance of many styles of music in the jazz idiom. Includes progressive development of musical skills through interpretation of literature.

Information: Students chosen by audition.

Information: May be taken ten times for a maximum of twenty credit hours, but a maximum of three credits will apply toward the AGEC. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

MUS 111 Exploring Music through Piano

3 cr. hrs. 3 periods (3 lec.)

Keyboard application skills and music fundamentals. Includes keyboard orientation, tonality, piano proficiency, musical structure, musical texture, musical style, and global topics.

Offered: Fall, Spring.

MUS 116 Pima Community College Orchestra

2 cr. hrs. 3 periods (1 lec., 2 lab)

Progressive development of musical skills through interpretation of orchestra literature. Includes participation in regular rehearsals and performances.

Information: Students chosen by audition.

Information: May be taken ten times for a maximum of twenty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

MUS 120 Concert Band

3 cr. hrs. 7 periods (1 lec., 6 lab)

Progressive development of musical skills through interpretation of literature. Includes participation in regular rehearsals and performances.

Information: Students chosen by audition.

Information: May be taken ten times for a maximum of thirty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

MUS 125 Structure of Music I

3 cr. hrs. 3 periods (3 lec.)

Review of music fundamentals. Includes form and analysis, non-harmonic tones and harmonic analysis, simple keyboard-style harmony, figured bass, chord functions, voicing chords, voice leading, part-writing, and seventh chords. Also includes cadences, chords in second inversion, harmonic progression, secondary dominants, and chorale harmonizations.

Corequisite(s): MUS 127

Information: Required for all other music structure courses. Music majors must also concurrently enroll in the appropriate level of studio instruction course. Consult a full time music faculty member for additional information.

Offered: Fall, Spring.

MUS 126 Structure of Music II

3 cr. hrs. 3 periods (3 lec.)

Continuation of MUS 125. Includes chromatic harmony and melody, secondary dominants and modulation, seventh and ninth chords, neapolitan and augmented sixth chords, and enharmonic relations. Also includes chromatic mediant and modulation, harmonic sequence, borrowed chords, and technical vocabulary.

Corequisite(s): MUS 129

Offered: Spring.

MUS 127 Aural Perception I

2 cr. hrs. 2 periods (2 lec.)

Development of aural skills. Includes rhythmic dictation, intervallic recognition, sight singing, and clapping and counting of rhythms..

Corequisite(s): MUS 125

Offered: Fall, Spring.

MUS 129 Aural Perception II

2 cr. hrs. 2 periods (2 lec.)

Continuation of MUS 127. Includes aural approaches to diatonic harmony, melody, advanced rhythmic structures, advanced applications for rhythmic dictation, intervallic recognition, and general listening techniques.

Corequisite(s): MUS 126

Offered: Spring.

MUS 130 Chorale (SATB)

3 cr. hrs. 4 periods (2 lec., 2 lab)

Selected group of mixed voices for interpretation of a wide variety of styles of music in concerts throughout the academic year. Includes progressive development of musical skills through interpretation of literature.

Information: May be taken ten times for a maximum of thirty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

MUS 131 College Singers (SATB)

3 cr. hrs. 4 periods (2 lec., 2 lab)

Small chorale ensemble. Includes repertory and performance throughout the academic year with the best literature from all styles and periods. Also includes progressive development of musical skills through interpretation of literature.

Information: Students chosen by audition.

Information: May be taken ten times for a maximum of thirty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

MUS 136 Voice Class I

2 cr. hrs. 2 periods (2 lec.)

Practical training in basic skills and singing without specialization. Includes techniques, group singing, individual practice, and individual performance.

Offered: Fall, Spring.

MUS 141 Piano Class I (Majors)

2 cr. hrs. 2 periods (2 lec.)

Beginning instruction utilizing group and individual practice with electronic pianos. Includes scales, chords, repertoire, technique, practice habits, transposition of single-line melodies, and sight reading.

Offered: Fall, Spring.

MUS 142 Piano Class II (Majors)

2 cr. hrs. 2 periods (2 lec.)

Continuation of MUS 141. Incorporates intermediate piano instruction utilizing group and individual practice with electronic pianos. Includes scales, chords, harmonization of major and minor melodies with different accompaniment patterns, and transposition of short major and minor pieces. Also includes repertoire, continued technique and practice habits, and sight reading.

Prerequisite(s): MUS 141.

Offered: Spring.

MUS 143 Piano Class III (Majors)

2 cr. hrs. 2 periods (2 lec.)

Continuation of MUS 142. Incorporates intermediate piano instruction utilizing group and individual practice with electronic pianos. Includes scales, chords, arpeggios, harmonization of melodies, transpositions, repertoire pieces, technique and practice habits, sight reading, and score reading.

Prerequisite(s): MUS 142.

Offered: Fall.

MUS 144 Piano Class IV (Majors)

2 cr. hrs. 2 periods (2 lec.)

Continuation of MUS 143. Incorporates advanced piano instruction utilizing group and individual practice with electronic pianos. Includes scales, arpeggios, learning methods, technique building exercises, memory method, and advanced methods of practicing.

Prerequisite(s): MUS 143.

Offered: Spring.

MUS 148 Musical Theater Workshop

2 cr. hrs. 3 periods (1 lec., 2 lab)

Movement and singing to enhance projection and communication capabilities in musical theater. Includes exercise in stage movement, staging and memorization of scenes, performance and musical theater, and reevaluation and practice.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Students chosen by audition.

Offered: May not be offered this year, check class schedule.

MUS 149 Opera Workshop

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction to the techniques of opera. Includes exercise in stage movement, musical preparation, staging and memorization of scenes, performance of opera, and reevaluation and practice.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Students chosen by audition.

Offered: Fall.

MUS 151 Exploring Music

3 cr. hrs. 3 periods (3 lec.)

Introduction to various historical musical styles. Includes elements of music, musical instruments, the Middle Ages, the Renaissance, the Baroque era, classics, and the Nineteenth and Twentieth centuries.

Offered: Fall, Spring, Summer.

MUS 154 Jazz Improvisation

2 cr. hrs. 2 periods (2 lec.)

Study of jazz improvisation on various instruments. Includes rhythmic, melodic, and harmonic aspects of jazz styles. Also includes an emphasis on progressive development of musical skills through interpretation of literature.

Information: Students chosen by audition.

Information: May be taken ten times for a maximum of twenty credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

MUS 155 Introduction to Electronic Music I

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to producing music with Musical Instrument Digital Interface (MIDI) configurations and WAV sounds. Includes concepts in acoustics and music synthesis, use of hardware and software, music notation software, music sequencing software, and documentation of projects. Also includes computers, printers, and keyboard controller.

Recommendation: Ability to read music before enrolling in this course.

Offered: Fall, Spring.

MUS 156 Introduction to Electronic Music II

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of MUS 155. Includes song data entry from computer synthesizer keyboards, editor/library, and percussion writing.

Prerequisite(s): MUS 155.

Offered: Spring.

MUS 157 Music Industry I: Marketing, Merchandising and the Law

3 cr. hrs. 3 periods (3 lec.)

Operation, scope, and career opportunities in the music business. Includes music in the marketplace, professional songwriting and music composition, music copyright and publishing, business affairs in the music industry, and application of information.

Offered: May not be offered this year, check class schedule.

MUS 158 Music Industry II: Music in Recording and Mass Media

3 cr. hrs. 3 periods (3 lec.)

Operation, scope, and career opportunities in the music business. Includes focus on the record industry, environmental music, uses of music in radio, telecommunications and film, and career options.

Offered: [May not be offered this year, check class schedule.](#)

MUS 160 Popular Music in America

3 cr. hrs. 3 periods (3 lec.)

Study of the history of popular music culture in America through current trends in today's society. Includes background of music, sources of music, birth of music, syncopated song and dance, jazz, crooners and jazz singers, musical theater, country music, Latin music traditions, and roots of rock and roll. Also includes impact of technology, motown and soul, rock in the seventies, and modern trends.

Offered: [Fall, Spring, Summer.](#)

MUS 201 History and Literature of Music I

3 cr. hrs. 3 periods (3 lec.)

Music history and literature from the ancient Greeks through the Baroque. Includes emphasis on specific works and composers as representative of the evolution of Western music.

Prerequisite(s): MUS 125 or concurrent enrollment.

Offered: [Fall.](#)

MUS 202 History and Literature of Music II

3 cr. hrs. 3 periods (3 lec.)

Music history and literature from Bach to the present. Includes emphasis on specific works and composers as representative of the evolution of Western music.

Prerequisite(s): MUS 125 or concurrent enrollment.

Offered: [Spring.](#)

MUS 223 Structure of Music III

3 cr. hrs. 3 periods (3 lec.)

Continuation of MUS 126. Includes the nature of polyphony, writing simple melodic lines, basic contrapuntal technique, first species, fugue, theme and variations, binary form, rounded binary form, rondo, sonata forms, and concerto form.

Corequisite(s): MUS 224

Offered: [Fall.](#)

MUS 224 Aural Perception III

2 cr. hrs. 2 periods (2 lec.)

Continuation of MUS 129. Includes scales, intervallic recognition, melodic dictation of melodies, chord type identification, rhythmic dictation and performing notated rhythms, syncopated rhythms, and sight singing melodies. Also includes motives and motivic development, themes and thematic development, and conducting while performing various rhythms and melodies.

Corequisite(s): MUS 223

Offered: [Fall.](#)

MUS 226 Structure of Music IV

3 cr. hrs. 3 periods (3 lec.)

Continuation of MUS 223. Includes extended chromaticism; aspects of form; influence of musical nationalism; compositional techniques and technical vocabulary; and late romantic and early 20th century tonal music.

Corequisite(s): MUS 228

Offered: [Spring.](#)

MUS 228 Aural Perception IV

2 cr. hrs. 2 periods (2 lec.)

Continuation of MUS 224. Includes scales and modes, intervallic recognition, melodic dictation, chord type identification, chord progressions, modulation types rhythmic dictation, and syncopated rhythms, cross-rhythms, hemiola, and asymmetrical meter. Also includes sight singing melodies, motives and motivic development, themes and thematic development, and conducting while performing various rhythms and melodies.

Corequisite(s): MUS 226

Offered: [Spring.](#)

MUS 257 Music Recording and Production

3 cr. hrs. 3 periods (3 lec.)

Introduction to the recording and production of music. Includes the elements of sound, the mixing board, hard drive recorder, microphone types and applications, recording strategies and room use, lab software for editing, mixing and re-recording, and creating a final project.

Offered: Fall, Spring.

Music Studio Instruction

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MUP 061 Studio Instruction: Brass (Pre Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).

Information: Audition as a music major. Faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours.

Offered: Fall, Spring.

MUP 062 Studio Instruction: Guitar (Pre Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills to be stressed.

Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).

Information: Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours.

Offered: Fall, Spring.

MUP 063 Studio Instruction: Percussion (Pre Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).

Information: Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours.

Offered: Fall, Spring.

MUP 064 Studio Instruction: Piano (Pre Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).

Information: Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours.

Offered: Fall, Spring.

MUP 065 Studio Instruction: Strings (Pre Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).

Information: Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours.

Offered: Fall, Spring.

MUP 066 Studio Instruction: Voice (Pre Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).

Information: Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours.

Offered: Fall, Spring.

MUP 067 Studio Instruction: Woodwinds (Pre Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Course of study jointly determined by the instructor and student. Development of performance skills is stressed.

Corequisite(s): (MUS 102 and 106) or (MUS 125 and 127).

Information: Audition as a music major and faculty signature required before enrolling in this course. Contact the music department for audition and placement information. May be taken two times for a maximum of four credit hours.

Offered: Fall, Spring.

MUP 161 Studio Instruction: Brass I (Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

Corequisite(s): MUS 125, MUS 127

Information: Students chosen by audition.

Offered: Fall, Spring.

MUP 162 Studio Instruction: Guitar I (Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

Corequisite(s): MUS 125, MUS 127

Information: Students chosen by audition.

Offered: Fall, Spring.

MUP 163 Studio Instruction: Percussion I (Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

Corequisite(s): MUS 125, MUS 127

Information: Students chosen by audition.

Offered: Fall, Spring.

MUP 164 Studio Instruction: Piano I (Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

Corequisite(s): MUS 125, MUS 127

Information: Students chosen by audition.

Offered: Fall, Spring.

MUP 165 Studio Instruction: Strings I (Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

Corequisite(s): MUS 125, MUS 127

Information: Students chosen by audition.

Offered: Fall, Spring.

MUP 166 Studio Instruction: Voice I (Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

Corequisite(s): MUS 125, MUS 127

Information: Students chosen by audition.

Offered: Fall, Spring.

MUP 167 Studio Instruction: Woodwinds I (Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

Corequisite(s): MUS 125, MUS 127

Information: Students chosen by audition.

Offered: Fall, Spring.

MUP 168 Studio Instruction I: (Major)

2 cr. hrs. 4 periods (4 lab)

Weekly studio instruction. Includes participation in student recitals and jury exams.

Corequisite(s): MUS 125, MUS 127

Information: Students chosen by audition.

Offered: Fall, Spring.

MUP 171 Studio Instruction: Brass II (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 161. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 161.

Corequisite(s): MUS 126, MUS 129

Offered: Fall, Spring.

MUP 172 Studio Instruction: Guitar II (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 162. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 162.

Corequisite(s): MUS 126, MUS 129

Offered: Fall, Spring.

MUP 173 Studio Instruction: Percussion II (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 163. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 163.

Corequisite(s): MUS 126, MUS 129

Offered: Fall, Spring.

MUP 174 Studio Instruction: Piano II (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 164. Private weekly instrumental lessons. Includes further development of performance skills and participation in recitals and jury exams.

Prerequisite(s): MUP 164.

Corequisite(s): MUS 126, MUS 129

Offered: Fall, Spring.

MUP 175 Studio Instruction: Strings II (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 165. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 165.

Corequisite(s): MUS 126, MUS 129

Offered: Fall, Spring.

MUP 176 Studio Instruction: Voice II (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 166. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 166.

Corequisite(s): MUS 126, MUS 129

Offered: Fall, Spring.

MUP 177 Studio Instruction: Woodwinds II (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 167. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 167.

Corequisite(s): MUS 126, MUS 129

Offered: Fall, Spring.

MUP 178 Studio Instruction II: (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 168. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 168.

Corequisite(s): MUS 126, MUS 129

Offered: Fall, Spring.

MUP 261 Studio Instruction: Brass III (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 171. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 171.

Corequisite(s): MUS 223, MUS 224

Offered: Fall, Spring.

MUP 262 Studio Instruction: Guitar III (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 172. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 172.

Corequisite(s): MUS 223, MUS 224

Offered: Fall, Spring.

MUP 263 Studio Instruction: Percussion III (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 173. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 173.

Corequisite(s): MUS 223, MUS 224

Offered: Fall, Spring.

MUP 264 Studio Instruction: Piano III (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 174. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 174.

Corequisite(s): MUS 223, MUS 224

Offered: Fall, Spring.

MUP 265 Studio Instruction: Strings III (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 175. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 175.

Corequisite(s): MUS 223, MUS 224

Offered: Fall, Spring.

MUP 266 Studio Instruction: Voice III (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 176. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 176.

Corequisite(s): MUS 223, MUS 224

Offered: Fall, Spring.

MUP 267 Studio Instruction: Woodwinds III (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 177. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 177.

Corequisite(s): MUS 223, MUS 224

Offered: Fall, Spring.

MUP 268 Studio Instruction III: (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 178. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 178.

Corequisite(s): MUS 223, MUS 224

Offered: Fall, Spring.

MUP 271 Studio Instruction: Brass IV (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 261. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 261.

Corequisite(s): MUS 226, MUS 228

Offered: Fall, Spring.

MUP 272 Studio Instruction: Guitar IV (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 262. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 262.

Corequisite(s): MUS 226, MUS 228

Offered: Fall, Spring.

MUP 273 Studio Instruction: Percussion IV (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 263. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 263.

Corequisite(s): MUS 226, MUS 228

Offered: Fall, Spring.

MUP 274 Studio Instruction: Piano IV (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 264. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 264.

Corequisite(s): MUS 226, MUS 228

Offered: Fall, Spring.

MUP 275 Studio Instruction: Strings IV (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 265. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 265.

Corequisite(s): MUS 226, MUS 228

Offered: Fall, Spring.

MUP 276 Studio Instruction: Voice IV (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 266. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 266.

Corequisite(s): MUS 226, MUS 228

Offered: Fall, Spring.

MUP 277 Studio Instruction: Woodwinds IV (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 267. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 267.

Corequisite(s): MUS 226, MUS 228

Offered: Fall, Spring.

MUP 278 Studio Instruction IV: (Major)

2 cr. hrs. 4 periods (4 lab)

Continuation of MUP 268. Private weekly instrumental lessons. Includes further development of performance skills and participation in student recitals and jury exams.

Prerequisite(s): MUP 268.

Corequisite(s): MUS 226, MUS 228

Offered: Fall.

Nursing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

NRS 104 Nursing Process I

4 cr. hrs. 4 periods (4 lec.)

Nursing 104 introduces the student to the application of the nursing process and to the concepts of client, health, environment and nurse with emphasis on caring for the adult and older adult client. This course introduces the student to behaviors that serve as the basis of effective nursing practice: (1) a safe practitioner, (2) an effective communicator, (3) a manager/teacher, (4) a culturally competent/caring healthcare provider, and (5) professional and ethical issues of being a nurse. The student applies nursing theory in the college laboratory and the clinical setting while caring for adults and older adults in acute care, long term care and community environments.

Prerequisite(s): WRT 101 or concurrent enrollment.

Corequisite(s): NRS 104LC, NRS 104LS, NRS 108, NRS 155

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 104LC Nursing Process I Clinical Lab

3 cr. hrs. 9 periods (9 lab)

This is the Clinical Lab portion of NRS 104.

Prerequisite(s): WRT 101 or concurrent enrollment.

Corequisite(s): NRS 104, NRS 104LS, NRS 108, NRS 155

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 104LS Nursing Process I Skills Lab

1 cr. hrs. 3 periods (3 lab)

This is the Skills Lab portion of NRS 104.

Prerequisite(s): WRT 101 or concurrent enrollment.

Corequisite(s): NRS 104, NRS 104LC, NRS 108, NRS 155

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 105 Nursing Process II

4 cr. hrs. 4 periods (4 lec.)

Continuation of NRS 104. Application of the nursing process and expansion on the concepts of client, health, environment and nurse, with emphasis on caring for adult clients with common health alterations. Expansion of behaviors that are the basis of effective nursing practice: (1) safe practitioner, (2) effective communicator, (3) manager/teacher, (4) a culturally competent/caring healthcare provider, and (5) professional and ethical issues of being a nurse. Includes additional application of theory in the college laboratory and the clinical setting in acute care environments. Prerequisite(s): NRS 104, 104LC, 104LS, 108, 155, and WRT 101 and BIO 205IN, ECE 107 or PSY 240 or concurrent enrollment.

Corequisite(s): NRS 105LC, NRS 105LS

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 105LC Nursing Process II Clinical Lab

4 cr. hrs. 12 periods (12 lab)

This is the clinical lab portion of NRS 105.

Prerequisites(s): NRS 104, 104LC, 104LS, 108, 155, and WRT 101 and BIO 205IN, ECE 107 or PSY 240 or concurrent enrollment.

Corequisite(s): NRS 105, NRS 105LS

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 105LS Nursing Process II Skills Lab

1 cr. hrs. 3 periods (3 lab)

This is the Skills Lab portion of NRS 105.

Prerequisite(s): NRS 104, 104LC, 104LS, 108, 155, and WRT 101 and BIO 205IN, ECE 107 or PSY 240 or concurrent enrollment.

Corequisite(s): NRS 105, NRS 105LC

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 108 Drug Calculations

1 cr. hrs. 1 periods (1 lec.)

Computation of medication dosage. Includes basic mathematics review, calculation of medications, interpretation of labels, alternate methods of administration, methods of medication calculations, and calculations related to route of administration and in specialty areas.

Prerequisite(s): WRT 101 or concurrent enrollment.

Corequisite(s): NRS 104, NRS 104LC, NRS 104LS, NRS 155

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 155 Introduction to Pharmacology

3 cr. hrs. 3 periods (3 lec.)

Application of the nursing process to actions, uses, and effects of medications. Designed for nursing students and includes classifications, actions, uses, contraindications, doses, routes of administration, side effects, interactions, and incompatibilities. Also includes the application of the nursing process to the safe administration of medications and appropriate client/family education.

Prerequisite(s): WRT 101 or concurrent enrollment.

Corequisite(s): HCA 102, NRS 104, NRS 104LC, NRS 104LS, NRS 108, WRT 101

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 188 Transition to Associate Degree Nursing

4 cr. hrs. 4 periods (4 lec.)

Non-clinical course facilitating transition of the Licensed Practical Nurse (LPN) into the Pima Community College Associate Degree Nursing program. Includes role transition through the application of the nursing process and orients the student to the philosophy, major concepts and program outcomes of the ADN program, and focuses on adult clients experiencing selected health alterations.

Prerequisite(s) or concurrent enrollment: BIO 205IN, ECE 107 or PSY 240.

Corequisite(s): NRS 188LS

Information: In order to enroll in this course, the student must hold a current valid Licensed Practical Nurse (LPN) license in Arizona. The student must also meet all admission criteria for the Associate Degree Nursing Program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 188LS Transition to Associate Degree Nursing Skills Lab

1 cr. hrs. 3 periods (3 lab)

This is the Skills Lab portion of NRS 188.

Prerequisite(s) or concurrent enrollment: BIO 205IN, ECE 107 or PSY 240.

Corequisite(s): NRS 188

Information: In order to enroll in this course, the student must hold a current valid Licensed Practical Nurse (LPN) license in Arizona. The student must also meet all admission criteria for the Associate Degree Nursing Program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 196 Independent Study in Nursing

1-9 cr. hrs. 1-9 periods (1-9 lec.)

Content to be determined by conference between student and instructor.

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: May not be offered this year, check class schedule.

NRS 201 Nursing Process III

5 cr. hrs. 5 periods (5 lec.)

Continuation of NRS 105 or NRS 188. Application of the nursing process and expansion of the concepts of nurse, health, client, and environment, with an emphasis on the family and child and clients with mental health disorders. Includes content related to the roles of safe practitioner, effective communicator, manager/teacher and culturally competent/caring healthcare provider. Also includes professional and ethical issues related to provision of nursing care. Also includes additional clinical application of selected nursing skills and knowledge of the developing family and child and clients with mental health disorders.

Prerequisite(s): BIO 205IN, ECE 107 or PSY 240, NRS 105, 105LC, and 105LS; and BIO 127IN or FSN 127IN and WRT 102 or concurrent enrollment.

Corequisite(s): NRS 201LC, NRS 203

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 201LC Nursing Process III Clinical Lab

4 cr. hrs. 12 periods (12 lab)

This is the clinical lab portion of NRS 201.

Prerequisite(s): BIO 205IN, ECE 107 or PSY 240, NRS 105, 105LC, and 105LS; and BIO 127IN or FSN 127IN and WRT 102 or concurrent enrollment.

Corequisite(s): NRS 201, NRS 203

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRS 202 Nursing Process IV

3 cr. hrs. 3 periods (3 lec.)

Continuation of NRS 201. Application and synthesis of the nursing process with expansion of the concepts of client, health, environment and nurse. Includes further development of performance behaviors that will serve as the basis of effective nursing practice: (1) safe practitioner, (2) effective communicator, (3) manager/teacher, (4) culturally competent/caring health care provider, (5) professional and ethical practitioner. Also includes the application of nursing theory in the clinical setting while caring for adults with complex health alterations.

Prerequisite(s): BIO 127IN or FSN 127IN, NRS 201, NRS 201LC, 203 and WRT 102.

Corequisite(s): NRS 202CA, NRS 202CB

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course. Involves student completion of a five-week preceptorship in an assigned healthcare setting.

Offered: Fall, Spring.

NRS 202CA Nursing Process IV Clinical Lab - A

3.5 cr. hrs. 10.5 periods (10.5 lab)

This is the Clinical Lab Part A portion of NRS 202.

Prerequisite(s): BIO 127IN or FSN 127IN, NRS 201, 201LC, 203, and WRT 102.

Corequisite(s): NRS 202, NRS 202CB

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course. Involves student completion of a five-week preceptorship in an assigned healthcare setting.

Offered: Fall, Spring.

NRS 202CB Nursing Process IV Clinical Lab - B

2.5 cr. hrs. 7.5 periods (7.5 lab)

This is the Clinical Lab Part B portion of NRS 202.

Prerequisite(s): BIO 127IN or FSN 127IN, NRS 201, 201LC, 203, and WRT 102.

Corequisite(s): NRS 202, NRS 202CA

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course. Involves student completion of a five-week preceptorship in an assigned healthcare setting.

Offered: Fall, Spring.

NRS 203 Trends and Issues in Nursing

1 cr. hrs. 1 periods (1 lec.)

Exploration of the role of the nurse as a safe practitioner with legal and ethical responsibilities. Includes current issues and trends in nursing and health care delivery and the role of the nurse as a member of the profession.

Prerequisite(s): BIO 205IN, ECE 107 or PSY 240, NRS 105, 105LC, and 105LS; and BIO 127IN or FSN 127IN and WRT 102 or concurrent enrollment.

Corequisite(s): NRS 201, NRS 201LC

Information: Students must be admitted to the PCC Nursing program and obtain consent of the Nursing Department before enrolling in this course.

Offered: May not be offered this year, check class schedule.

Nursing Assistant

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

NRA 101 Nursing Assistant

2 cr. hrs. 2 periods (2 lec.)

Introduction to nursing assisting. Includes body systems and common diseases, basic nursing assisting skills, providing client care, providing restorative care, providing long-term care, home health care, and certification requirements.

Prerequisite(s): Within the last two years: REA 091 with an appropriate score on the College Reading Assessment test.

Corequisite(s): NRA 101LC, NRA 101LS

Information: Students must obtain consent from the Nursing Department before enrolling in this course.

Offered: Fall, Spring.

NRA 101LC Nursing Assistant Clinical

1 cr. hrs. 3 periods (3 lab)

Clinical Lab for NRA 101.

Prerequisite(s): Within the last two years: REA 091 with an appropriate score on the College Reading Assessment test.

Corequisite(s): NRA 101, NRA 101LS

Offered: Fall, Spring.

NRA 101LS Nursing Assistant Skills

1 cr. hrs. 3 periods (3 lab)

Skills Lab for NRA 101.

Prerequisite(s): Within the last two years: REA 091 with an appropriate score on the College Reading Assessment test.

Corequisite(s): NRA 101, NRA 101LC

Offered: Fall, Spring.

NRA 102 Patient Care Technician

1 cr. hrs. 1 periods (1 lec.)

Introduction to the role of the patient care technician. Includes legal and ethical considerations, infection control, principles of asepsis during dressing changes and catheterizations, recording an electrocardiogram, proper procedure of a venipuncture, enteral feedings, and communication and interpersonal skills.

Prerequisite(s): Within the last two years: REA 091 with an appropriate score on the College Reading Assessment test.

Corequisite(s): NRA 102LC, NRA 102LS

Information: Students must obtain consent from the Nursing Department before enrolling in this course. You must be a Certified Nursing Assistant or have successfully completed NRA 101 within the last two years to enroll in this course.

Offered: Fall, Spring.

NRA 102LC Patient Care Tech Clinical

.67 cr. hrs. 2 periods (2 lab)

Clinical Lab for NRA 102.

Prerequisite(s): Within the last two years: REA 091 with an appropriate score on the College Reading Assessment test.

Corequisite(s): NRA 102, NRA 102LS

Information: Students must obtain consent from the Nursing Department before enrolling in this course. You must be a Certified Nursing Assistant or have successfully completed NRA 101/101LC/101LS within the last two years to enroll in this course.

Offered: Fall, Spring.

NRA 102LS Patient Care Tech Skills

.33 cr. hrs. 1 periods (1 lab)

Skills lab for NRA 102.

Prerequisite(s): Within the last two years: REA 091 with an appropriate score on the College Reading Assessment test.

Corequisite(s): NRA 102, NRA 102LC

Information: Students must obtain consent from the Nursing Department before enrolling in this course. You must be a Certified Nursing Assistant or have successfully completed NRA 101/101LC/101LS within the last two years to enroll in this course.

Offered: Fall, Spring.

Office and Administrative Professions

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

OAP 111 Computer Keyboarding for Office Technology

1 cr. hrs. 2 periods (2 lab)

Development of keyboarding skills to include mastery of alphabet, numeric, and symbol keyboards. Includes drills to build speed and accuracy skills with document processing of business correspondence. Also includes letters, reports, tables, resumes, language arts, and word processing commands.

Information: Course may be repeated two times for a total of 3 credits.

Offered: May not be offered this year, check class schedule.

OAP 123 Professional Development for Administrative Support

3 cr. hrs. 6 periods (6 lab)

Procedures and skills for securing a job. Includes resume development, interview techniques, application forms, application letter, research requirements, customer service skills, job shadowing, and sexual harassment.

Recommendation: Completion of OAP 111 or equivalent proficiency on computer keyboard before enrolling in this course.

Offered: May not be offered this year, check class schedule.

OAP 132 Records Management: Filing Systems

3 cr. hrs. 3 periods (3 lec.)

Principles and procedures of filing systems. Includes rules for indexing, coding, and filing, cross references, filing systems, advantages and disadvantages of each filing system, file maintenance and management, and simulations.

Offered: May not be offered this year, check class schedule.

OAP 171 Office Procedures

3 cr. hrs. 4 periods (2 lec., 2 lab)

Functions and procedures used in a wide range of office activities. Includes visitors and clients, office functions, document production, communication skills, office duties and tasks, travel arrangements, meetings, conferences, professional attitudes and image, and job evaluation.

Prerequisite(s): OAP 111.

Offered: May not be offered this year, check class schedule.

OAP 199 Co-op: Office and Administrative Professions

1 cr. hrs. 1 periods (1 lec.)

Introduction to Cooperative Education for first-year students (instruction which provides for success in securing and retaining a training job related to subject area). Social and psychological reasons for working, methods of securing employment, preparation of career and job-related objectives and evaluation of student work experience.

Corequisite(s): OAP 199WK

Information: May be taken two times for a maximum of two credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

OAP 199WK Co-op Work: Office and Administrative Professions

1-8 cr. hrs. 5-40 periods (5-40 lab)

A supervised cooperative work program for students in a related occupation area. Teacher-coordinators work with students and their supervisors. Variable credit is available by special arrangement.

Corequisite(s): OAP 199

Information: May be taken two times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Optical Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

OPS 201 Geometrical and Instrumental Optics I

3 cr. hrs. 3 periods (3 lec.)

Basic principles of light, refraction, reflection, properties of optical glass, prisms, paraxial optics, pupils and stops, visual and other basic instruments, aberrations, measurements, and testing.

Prerequisite(s): ENG 110IN, MAT 220, and PHY 210/210LB.

Corequisite(s): OPS 201LB

Offered: May not be offered this year, check class schedule.

OPS 201LB Geometrical and Instrumental Optics I Laboratory

1 cr. hrs. 4 periods (4 lab)

Cleaning optics, measuring refractive indices, reflection, deviating prisms, scanners, ideal imaging, thin lenses, thick lenses, Gaussian reduction, and throughput.

Prerequisite(s): ENG 110IN, MAT 220, and PHY 210/210LB.

Corequisite(s): OPS 201

Offered: May not be offered this year, check class schedule.

OPS 202 Geometrical and Instrumental Optics II

3 cr. hrs. 3 periods (3 lec.)

Optical instruments, field and relay lenses, telescopes, microscopes, optical materials, achromatization, illumination, cameras, and projectors.

Prerequisite(s): OPS 201/201LB.

Corequisite(s): OPS 202LB

Offered: May not be offered this year, check class schedule.

OPS 202LB Geometrical and Instrumental Optics II Laboratory

1 cr. hrs. 4 periods (4 lab)

Measuring refractive indices, dispersing and deviating prisms, thin lenses, thick lenses, aberration evaluation, Keplerian and Galileo telescopes, and compound microscopes.

Prerequisite(s): OPS 201/201LB.

Corequisite(s): OPS 202

Offered: May not be offered this year, check class schedule.

Paralegal

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

PAR 101 Introduction to Paralegal Careers

3 cr. hrs. 3 periods (3 lec.)

Role, responsibilities and ethical standards of the paralegal. Includes paralegal employment and regulation, ethical rules of the legal profession, law office administration and systems, communication, introduction to legal research and legal analysis, state and federal judicial systems, and overview of litigation and specialty areas of law.

Offered: Fall, Spring.

PAR 102 Civil Litigation Procedures I

3 cr. hrs. 3 periods (3 lec.)

Principles and procedures for commencement of civil litigation. Includes rules of civil procedure, subject matter jurisdiction, venue, statutes of limitations, parties, pleading format, preparation of complaint and answer, counterclaims, crossclaims, and third party practice. Also includes the causes of action, remedies, and potential defenses in contract and tort law.

Prerequisite(s): PAR 101, WRT 101 or concurrent enrollment.

Offered: Fall, Spring.

PAR 103 Legal Research

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of legal research. Includes categories of research materials, citing legal material, finding and using secondary authority, finding tools. Shepards Citators, case law, constitutions, statutes and administrative law, analyzing research problems, and preparing research reports.

Prerequisite(s): PAR 101 and WRT 102.

Information: Prerequisites may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

Offered: Fall, Spring.

PAR 104 Paralegal Ethics

3 cr. hrs. 3 periods (3 lec.)

Rules and principles of professional responsibility in the legal field. Includes sources of the rules of legal ethics, ethical guidelines and attorney supervision of paralegals, unauthorized practice of law, confidentiality, conflicts of interest, advertising and solicitation, attorney's fees and fiduciary duties, competence, malpractice, ethical conduct issues in litigation, and professional integrity issues.

Prerequisite(s): PAR 103 or concurrent enrollment.

Information: Prerequisite may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

Offered: Fall, Spring.

PAR 106 Civil and Criminal Evidence

3 cr. hrs. 3 periods (3 lec.)

Paralegal's role in the analysis and application of the rules of evidence. Includes relevancy and its limits, privileges, use, impeachment, and exclusion of witness, opinion and expert testimony, hearsay, authentication, and contents of writings, recordings, and photographs.

Prerequisite(s): PAR 103 or concurrent enrollment.

Information: Prerequisite may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

Offered: Fall, Spring.

PAR 202 Civil Litigation Procedures II

3 cr. hrs. 3 periods (3 lec.)

Continuation of PAR 102. Includes discovery/disclosure procedures in Federal Court and in Arizona Superior Court, file organization and document control, pre-trial motions, gathering and organizing evidence, preparation of witnesses, alternative dispute resolutions, trial, post-trial and appellate procedures.

Prerequisite(s): PAR 102.

Offered: Fall, Spring.

PAR 203 Tort Law Procedures

3 cr. hrs. 3 periods (3 lec.)

Concepts and procedures used in tort law cases. Includes tort litigation procedures and tort case law in the areas of negligence, professional negligence, strict liability, product liability, liability issues, and insurance coverage. Also includes interviewing and investigation techniques for the paralegal in tort cases.

Prerequisite(s): PAR 101 and 102.

Information: Prerequisites may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

Offered: Fall, Spring.

PAR 204 Wills, Trusts, and Estates

3 cr. hrs. 3 periods (3 lec.)

Concepts and procedures of wills, trusts and estate planning for paralegals. Includes Arizona statutes and rules, probate and non-probate property, testate or intestate succession, will drafting and execution, will-related documents and advance directives, trusts, estate administration and related legal actions.

Prerequisite(s): PAR 101.

Information: Prerequisite(s) may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

Offered: Fall, Spring.

PAR 206 Criminal Law and Procedures I

3 cr. hrs. 3 periods (3 lec.)

Criminal law and trial processes from arrest through pre-trial procedures. Includes rules of criminal procedure, initial criminal law process, pretrial investigation and discovery, criminal and constitutional law cases, criminal statutes, and pretrial motion practice.

Prerequisite(s): PAR 101.

Information: Prerequisite may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

Offered: Fall.

PAR 207 Criminal Law and Procedures II

3 cr. hrs. 3 periods (3 lec.)

Continuation of PAR 206. Includes rules of criminal procedure, trial rights of defendants, trial procedure, case preparation for trial, direct and cross examination, evidentiary objections, and motions for the close of evidence.

Prerequisite(s): PAR 106 or concurrent enrollment, and PAR 206.

Offered: Spring.

PAR 208 Domestic Relations and Family Law

3 cr. hrs. 3 periods (3 lec.)

Law and procedures related to family relationships and domestic matters. Includes basic principles of family law, marital contracts, legal issues in family law affecting children, initiating a divorce proceeding, contested proceedings, and assisting at a dissolution trial.

Prerequisite(s): PAR 101.

Information: Prerequisite may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

Offered: Spring.

PAR 209 Bankruptcy Procedures

3 cr. hrs. 3 periods (3 lec.)

Application of legal procedures in bankruptcy. Includes jurisdiction, cast of characters and their roles in bankruptcy, client interview, evaluation of options, advising client, and drafting Chapter 7 liquidation, Chapter 13 adjustment of debts of individuals, Chapter 12 adjustment of debts of family farmer, Chapter 11 reorganization, and the paralegal's role.

Prerequisite(s): PAR 101.

Information: Prerequisite may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

Offered: Fall.

PAR 211 Legal Writing

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of legal writing. Includes writing style, editing and proofreading, legal analysis, legal brief types, and applications of legal writing for memoranda, litigation documents, and correspondence.

Prerequisite(s): PAR 103, 202 and WRT 102.

Offered: Fall, Spring.

PAR 212 Law Office Computerization

3 cr. hrs. 3 periods (3 lec.)

Application of computer software in a legal field. Includes computer hardware and software, word processing applications, database management systems, spreadsheet software, law office management, automated litigation support, telecommunications, and specialized legal software for the preparation of legal documents and document organization.

Prerequisite(s): CIS/CSA 104 and PAR 101.

Information: Prerequisites may be waived if employed in a legal-related field; see a PAR advisor or course instructor.

Offered: Spring.

PAR 213 Computer-Assisted Legal Research

3 cr. hrs. 3 periods (3 lec.)

Computer assisted research systems. Includes historical development, full-text system; Westlaw, search techniques, and display elements, databases, special services, and Internet searching.

Prerequisite(s): PAR 103.

Information: Prerequisite may be waived with equivalent research experience; see a PAR advisor or course instructor.

Offered: Fall, Spring.

PAR 215 Corporate Law Procedures

3 cr. hrs. 3 periods (3 lec.)

Procedures and document drafting for the formation of business entities. Includes introduction to agency law, non-corporate entities, business corporations, corporation changes, forms of corporations, financing a public or private corporation, changes in corporate structure, and the role of the paralegal in corporate law.

Prerequisite(s): PAR 101.

Information: Prerequisite(s) may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

Offered: Spring.

PAR 217 Real Estate Legal Procedures

3 cr. hrs. 3 periods (3 lec.)

Legal procedures and requirements in real estate transactions and litigation. Includes real estate principles and legal concepts, recording and constructive notice, and real property taxes. Also includes an analysis of real estate contracts and purchase agreements, escrows and closings, deeds, co-ownership, legal descriptions, leases, encumbrances, liens, and foreclosures.

Prerequisite(s): PAR 101.

Information: Employment in a legal-related field or an Arizona Real Estate license may be substituted for PAR 101. See a PAR Advisor or course instructor for prerequisite information.

Offered: Fall.

PAR 218 Administrative Law: Employment

1 cr. hrs. 1 periods (1 lec.)

Concepts and procedures of employment law for paralegals. Includes an overview of employment law and regulations, and practical applications in employment law.

Prerequisite(s): PAR 101 and 103.

Information: Prerequisites may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

Offered: May not be offered this year, check class schedule.

PAR 219 Administrative Law: Immigration

1 cr. hrs. 1 periods (1 lec.)

Concepts and procedures of immigration law for paralegals. Includes an overview of immigration law and regulations, and practical applications in immigration law.

Prerequisite(s): PAR 101 and 103.

Information: Prerequisites may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

Offered: May not be offered this year, check class schedule.

PAR 220 Administrative Law: Social Security

1 cr. hrs. 1 periods (1 lec.)

Concepts and procedures of social security law for paralegals. Includes an overview of social security law and regulations, and practical applications in social security law.

Prerequisite(s): PAR 101 and 103.

Information: Prerequisites may be waived if employed in a legal-related field, or if pursuing a post-degree certificate; see a PAR advisor or course instructor.

Offered: May not be offered this year, check class schedule.

PAR 290 Paralegal Internship

4 cr. hrs. 16 periods (1 lec., 15 lab)

Volunteer paralegal field experience at an approved work site. Includes communications, positive work attitudes, ethics, progress review, law office systems, professional development, employment strategies, and final evaluation within a classroom seminar setting.

Prerequisite(s): PAR 104, 202 and WRT 102.

Information: Enrollment and placement contingent upon earned grade point average in PAR courses.

Information: Designed for students in their final semester of course work in the Paralegal Program.

Information: Six credit hours of PAR specialty electives from the following list must be taken - PAR 203, 204, 206, 207, 208, 209, 212, 215, 217, 218, 219, or 220. A minimum of 45 credit hours if completing the AAS Degree, or 27 credit hours in completing the certificate are required.

Information: Application and acceptance required.

Offered: Fall, Spring.

Pharmacy Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

PHT 170 Introduction to Pharmacy Technology

2 cr. hrs. 2 periods (2 lec.)

An overview of the history, structure, operation, and function of the pharmacy, and the roles of the pharmacist and pharmacy support personnel. Includes: medical terminology, emphasizing common medical roots, prefixes, and suffixes; pharmaceutical abbreviations; and dosage forms and routes of administration. Also includes: information and reference resources; an introduction to third-party payment systems, HMO's, Medicare, and Medicaid; and contemporary issues, including legal and ethical aspects and future concepts in pharmacy.

Prerequisite(s): With a C or better: REA 091 or assessment into REA 112 and WRT 090 or assessment into WRT 101.

Offered: Fall, Spring, Summer.

PHT 171IN Pharmaceutical Calculations

4 cr. hrs. 6 periods (3 lec., 3 lab)

Mathematical computations needed in the practice of pharmacy technology. Includes fundamentals of mathematical calculations, units and measures for the calculation of drug dosages, and interpretation of the prescription or medication order. Also includes calculation of drug dosages, reducing and enlarging formulas, percentage preparations, dilution and concentration, isotonic solutions and electrolyte solutions.

Prerequisite(s): PHT 170 or concurrent enrollment and MAT 092.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

PHT 172 Drug Therapy I

4 cr. hrs. 4 periods (4 lec.)

Overview of the relationship between the central nervous system (CNS), the autonomic nervous system (ANS) and pharmaceutical therapy. Includes anatomy and physiology of the CNS, neurotransmission and disorders of the CNS, therapeutic applications of drugs affecting the CNS, and characteristics of drugs of the CNS. Also includes anatomy and physiology of the ANS, drug action on ANS neurotransmission, disorders treated with autonomic drugs, and types and characteristics of autonomic drugs.

Prerequisite(s): With a C or better: REA 091 or assessment into REA 112 and WRT 090 or assessment into WRT 101, and PHT 170 or concurrent enrollment.

Offered: Fall, Spring, Summer.

PHT 174IN Pharmacy Operations

3 cr. hrs. 5 periods (2 lec., 3 lab)

An integrated course combining lecture and laboratory exercise in practical, technical, and legal aspects of drug management; distribution (dispensing); and storage in outpatient (retail), inpatient (hospital), and nursing home settings. Includes pharmacy equipment and devices, materials, non-sterile dosage forms, and inventory control. Also includes small or large scale compounding, packaging and quality control; practical aspects of recordkeeping, and insurance issues relevant to the daily pharmacy operations.

Prerequisite(s): PHT 170, PHT 171IN or concurrent enrollment.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

PHT 178IN Computer Applications for Pharmacy

3 cr. hrs. 5 periods (2 lec., 3 lab)

Basic concepts of computer operation. Includes the Internet, computer hardware and software, and professional pharmacy applications in retail and hospital pharmacy.

Prerequisite(s): PHT 170 or concurrent enrollment.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

PHT 180IN Sterile Products

4 cr. hrs. 6 periods (3 lec., 3 lab)

Application of aseptic techniques and use of the laminar flow hood in the preparation of sterile products. Includes history of sterile products and parenteral therapy, characteristics of sterile products, principles of fluid and electrolyte therapy, basics of microbiology, antiseptics and sterilization, and sterile products calculations. Also includes introduction to IV labels and profile systems, aseptic techniques, total parenteral nutrition, incompatibilities, quality control, and specialized sterile products.

Prerequisite(s): PHT 170 and PHT 171.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

PHT 181 Interprofessional Relations in Pharmacy

3 cr. hrs. 3 periods (3 lec.)

Overview of effective communications skills needed by the pharmacy technician to use interpersonally and between the pharmacist, the patient, and other health care professionals. Includes human relations development, personality inventory, and elements in communication in areas of non-verbal, interpersonal, barriers, listening, empathy and interviewing. Also includes building better patient understanding in special situations such as death and dying, ethnicity, conflict resolution, and ethical patient care.

Prerequisite(s): PHT 170 or concurrent enrollment.

Offered: Fall, Spring, Summer.

PHT 182 Drug Therapy II

4 cr. hrs. 4 periods (4 lec.)

Relationship between anatomy and physiology, disease states, and pharmaceutical therapy. Includes origins, dosage forms, indications, actions, routes of administration and side effects of both prescription and non-prescription drugs used in diseases of the cardiovascular, circulatory, renal, endocrine, respiratory, digestive, reproductive, and integumentary systems.

Prerequisite(s): PHT 172.

Offered: Fall, Spring, Summer.

PHT 187 Pharmacy Law and Ethics

3 cr. hrs. 3 periods (3 lec.)

Practical guide to pharmacy law and ethics for the pharmacy technician. Includes state and federal law, roles of the pharmacist and the pharmacy technician, and ethical practices for patients.

Prerequisite(s): PHT 170 or concurrent enrollment.

Offered: Fall, Spring, Summer.

PHT 190LB Pharmacy Technician Internship

4 cr. hrs. 16 periods (16 lab)

On-site training in outpatient and inpatient pharmacy services under direct supervision of designated pharmacist.

Prerequisite(s): PHT 170, 171IN, 172, 174IN, 178IN, 180IN, 181, 182 and 187.

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall, Spring, Summer.

PHT 197 Clinical Seminar

2 cr. hrs. 2 periods (2 lec.)

Topics and discussions of importance to the pharmacy technician. Includes employment search preparation, research reports, and technical papers. Also includes a review of the Arizona Pharmacy Association Pharmacy Technician Certification Exam.

Prerequisite(s): PHT 170, 171IN, 172, 174IN, 178IN, 180IN, 181, 182 and 187.

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall, Spring, Summer.

Philosophy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

PHI 101 Introduction to Philosophy

3 cr. hrs. 3 periods (3 lec.)

Survey of Western Philosophy. Includes primary source readings in western philosophic areas: logic, epistemology, ethics, social/political philosophy, philosophy of religion, metaphysics, philosophy of science, and aesthetics.

Offered: Fall, Spring, Summer.

PHI 120 Introduction to Logic

3 cr. hrs. 3 periods (3 lec.)

Introduction to the main types of logical reasoning. Includes the nature of language, deductive logic, and inductive logic.

Offered: Fall, Spring, Summer.

PHI 122 God, Mind, and Matter

3 cr. hrs. 3 periods (3 lec.)

Introduction to the metaphysics and epistemology of the cognitive and material domains of Western philosophy. Includes philosophic method, distinctions, God, mind, and matter in ancient philosophy, medieval philosophy, modern philosophy, and contemporary philosophy and physics.

Offered: May not be offered this year, check class schedule.

PHI 123 Philosophical Foundations of Science

3 cr. hrs. 3 periods (3 lec.)

Introduction to Western philosophical foundations of science. Includes philosophical and scientific methods, classical, medieval, modern and contemporary science and mathematics, and philosophical problems raised by discovery and change.

Offered: Spring.

PHI 130 Introductory Studies in Ethics and Social Philosophy

3 cr. hrs. 3 periods (3 lec.)

Introduction to the study of the principles of morality and standards of conduct from a western philosophical perspective. Includes philosophical method, foundations of moral philosophy, ethical-value judgments and human nature, theories of social morality and justice, and emotions and faith.

Offered: May not be offered this year, check class schedule.

PHI 140 Philosophy of Religion

3 cr. hrs. 3 periods (3 lec.)

Introduction to Western philosophical methods as applied to religion. Includes philosophical method, nature and meaning of religion and God, classical arguments, faith and reason, theodicy, mysticism, and the impact of religion on ethics, psychology, and law.

Information: Same as REL 140.

Offered: Fall, Spring.

Phlebotomy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

PHB 160 Foundations of Phlebotomy

3 cr. hrs. 3 periods (3 lec.)

Overview of the role of phlebotomy in the healthcare profession. Includes the role of the phlebotomist within the culture of healthcare, conventions of laboratory organization and structure, the organization and purposes of laboratory departments, and the services a laboratory provides as an essential key to diagnosis. Also includes medical vocabulary, laboratory terminology, and basic anatomy and physiology with a focus on the circulatory system.

Offered: Fall, Spring, Summer.

PHB 162 Safety Standards in Phlebotomy

3 cr. hrs. 3 periods (3 lec.)

Study of phlebotomy safety practices and infection control in a laboratory setting. Includes quality controls, procedural controls, processing requirements, and transportation procedures. Also includes patient education, related legal guidelines, OSHA standards, and proper equipment operation.

Corequisite(s): PHB 164, PHB 166LB

Offered: Fall, Spring, Summer.

PHB 164 Professional Practices in Phlebotomy

3 cr. hrs. 3 periods (3 lec.)

A survey of professional practices in phlebotomy, including values, ethical behavior in the workplace, and workers' rights and responsibilities. Includes stress management, development of positive personal communication skills, and concepts of teamwork. Also includes OSHA and other regulatory requirements.

Corequisite(s): PHB 162, PHB 166LB

Offered: Fall, Spring, Summer.

PHB 166LB Phlebotomy Laboratory Practice

2 cr. hrs. 6 periods (6 lab)

Laboratory practice performing phlebotomy and capillary collections, including proper order of draw, labeling, and specimen handling. Includes study of basic storage, transportation, and processing. Also includes proper laboratory conduct and safety.

Corequisite(s): PHB 162, PHB 164

Offered: Fall, Spring, Summer.

PHB 190LC Clinical Internship in Phlebotomy

1-3 cr. hrs. 5-15 periods (5-15 lab)

Capstone experience for phlebotomy students. Includes an externship in the field where students practice the skills and knowledge they gain during training, such as single and multi-draw venipuncture, capillary draws, storage and transportation of specimens, testing and processing specimens, legal and ethical behaviors and documentation, and professional conduct.

Prerequisite(s): PHB 160, 162, 164 and 166LB.

Information: Credit hours will vary depending on length of time needed for student to obtain required experience for certification.

Offered: Fall, Spring, Summer.

Physics

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

PHY 121 Introductory Physics I

4 cr. hrs. 4 periods (4 lec.)

Introduction to general physics for programs requiring a one-year, non-calculus based physics course. Includes the nature of physics, linear motion and kinematics, dynamics, work and energy, linear momentum, rotational motion, heat, states of matter, and waves and sound.

Prerequisite(s): Placement into College Algebra (MAT 151) or higher.

Corequisite(s): PHY 121LB

Offered: Fall, Spring.

PHY 121IN Introductory Physics I

5 cr. hrs. 7 periods (4 lec., 3 lab)

Introduction to general physics for programs requiring a one-year, non-calculus based physics course. Includes the nature of physics, linear motion and kinematics, dynamics, work and energy, linear momentum, rotational motion, heat, states of matter, and waves and sound.

Prerequisite(s): Placement into College Algebra (MAT 151) or higher.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

PHY 121LB Introductory Physics I Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 121.

Prerequisite(s): Placement into College Algebra (MAT 151) or higher.

Corequisite(s): PHY 121

Offered: May not be offered this year, check class schedule.

PHY 122 Introductory Physics II

4 cr. hrs. 4 periods (4 lec.)

Continuation of PHY 121/121LB or 121IN. Includes light, electricity, magnetism and electromagnetism, relativity, atomic physics, quantum physics, wave mechanics, and nuclear physics.

Prerequisite(s): PHY 121/121LB or 121IN.

Corequisite(s): PHY 122LB

Offered: May not be offered this year, check class schedule.

PHY 122IN Introductory Physics II

5 cr. hrs. 7 periods (4 lec., 3 lab)

Continuation of PHY 121/121LB or 121IN. Includes light, electricity, magnetism and electromagnetism, relativity, atomic physics, quantum physics, wave mechanics, and nuclear physics.

Prerequisite(s): PHY 121/121LB or 121IN.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

PHY 122LB Introductory Physics II Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 122.

Prerequisite(s): PHY 121/121LB or 121IN.

Corequisite(s): PHY 122

Offered: May not be offered this year, check class schedule.

PHY 195 Introduction to Research in Physics

4 cr. hrs. 4 periods (4 lec.)

Introduction to the methods of research in physics. Includes scientific laboratory procedures, experimental design, scientific writing, scientific ethics, and current research in working laboratories.

Information: Consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

PHY 196 Independent Studies in Physics

1-4 cr. hrs. 3-12 periods (3-12 lab)

Independent studies and projects in physics and allied science fields. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

PHY 210 Introductory Mechanics

4 cr. hrs. 4 periods (4 lec.)

Calculus-based introduction to mechanics for physics, engineering, and mathematics majors. Includes nature of physics, linear motion and kinematics, dynamics, work and energy, linear momentum, and rotational motion.

Prerequisite(s): MAT 220.

Corequisite(s): PHY 210LB

Information: High school physics is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

PHY 210IN Introductory Mechanics

5 cr. hrs. 7 periods (4 lec., 3 lab)

Calculus-based introduction to mechanics for physics, engineering, and mathematics majors. Includes nature of physics, linear motion and kinematics, dynamics, work and energy, linear momentum, and rotational motion.

Prerequisite(s): MAT 220.

Information: High school physics is required before enrolling in this course.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring, Summer.

PHY 210LB Introductory Mechanics Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 210.

Corequisite(s): PHY 210

Information: High school physics is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

PHY 216 Introductory Electricity and Magnetism

4 cr. hrs. 4 periods (4 lec.)

Calculus-based introduction to electricity and magnetism for physics, mathematics, and engineering majors. Includes electric charge and Coulomb's law, the electric field, Gauss' law, electric potential, capacitors and dielectrics, current and resistance, the magnetic field, Ampere's law and Biot-Savart law, and Faraday's law of induction. Also includes magnetic properties of matter, inductance, alternating current, Maxwell's equations, and electromagnetic waves.

Prerequisite(s): MAT 231 and PHY 210/210LB or 210IN.

Corequisite(s): PHY 216LB

Offered: May not be offered this year, check class schedule.

PHY 216IN Introductory Electricity and Magnetism

5 cr. hrs. 7 periods (4 lec., 3 lab)

Calculus-based introduction to electricity and magnetism for physics, mathematics, and engineering majors. Includes electric charge and Coulomb's law, the electric field, Gauss's law, electric potential, capacitors and dielectrics, current and resistance, the magnetic field, Ampere's law and Biot-Savart law, and Faraday's law of induction. Also includes magnetic properties of matter, inductance, alternating current, Maxwell's equations, and electromagnetic waves.

Prerequisite(s): MAT 231, and PHY 210/210LB or 210IN.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

PHY 216LB Introductory Electricity and Magnetism Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 216.

Prerequisite(s): MAT 231 and PHY 210/210LB or 210IN.

Corequisite(s): PHY 216

Offered: May not be offered this year, check class schedule.

PHY 221 Introduction to Waves and Heat

3 cr. hrs. 3 periods (3 lec.)

Calculus-based introduction to waves and heat for physics, mathematics, and engineering majors. Includes fluid statics and dynamics, temperature, heat and thermodynamics, kinetic theory, thermodynamics and entropy, oscillations and simple harmonic motion, and wave motion. Also includes electromagnetic waves and the propagation of light, diffraction and interference, reflection and refraction at plane surfaces, and spherical mirrors and lenses.

Prerequisite(s): MAT 231 and PHY 210/210LB or 210IN.

Corequisite(s): PHY 221LB

Offered: May not be offered this year, check class schedule.

PHY 221IN Introduction to Waves and Heat

4 cr. hrs. 6 periods (3 lec., 3 lab)

Calculus-based introduction to waves and heat for physics, mathematics and engineering majors. Includes fluid statics and dynamics, temperature, heat and thermodynamics, kinetic theory, thermodynamics and entropy, oscillations and simple harmonic motion, and wave motion. Also includes electromagnetic waves and the propagation of light, diffraction and interference, reflection and refraction at plane surfaces, and spherical mirrors and lenses.

Prerequisite(s): MAT 231 and PHY 210/210LB or 210IN.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall, Spring.

PHY 221LB Introduction to Waves and Heat Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of PHY 221.

Prerequisite(s): MAT 231 and PHY 210/210LB or 210IN.

Corequisite(s): PHY 221

Offered: May not be offered this year, check class schedule.

PHY 295LB Independent Research in Physics

1-4 cr. hrs. 3-12 periods (3-12 lab)

Experience in scientific laboratory research. Specific content to be determined by student and instructor.

Information: One semester of physics and consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring, Summer.

Political Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

POS 100 Introduction to Politics

3 cr. hrs. 3 periods (3 lec.)

Issues, principles, and trends in political science. Includes politics and political science, political philosophy and ideology, comparative politics, American national and state and local government, and international relations.

Offered: Fall, Spring.

POS 196 Independent Study in Political Science

2-4 cr. hrs. 2-4 periods (2-4 lec.)

Independent readings or special projects in political science. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

POS 201 American National Government and Politics

3 cr. hrs. 3 periods (3 lec.)

Basic concepts and substance of American politics. Includes methods of political analysis, cultural environment of American politics, impact of class, gender, and immigration, Constitution, civil liberties, and civil rights, and public opinion and fundamental values. Also includes political institutions, institutions of government, economic and social policy-making, and American foreign policy and interdependence.

Information: The combination of both POS 201 and 231 satisfies the requirement for teacher certification, as does POS 210.

Offered: Fall, Spring, Summer.

POS 202 Introduction to International Relations

3 cr. hrs. 3 periods (3 lec.)

Examination of contemporary international relations. Includes approaches to the study of international relations, international systems, actors in the international systems, foreign policies, and major forms of interactions.

Offered: Fall, Spring, Summer.

POS 203 Introduction to Political Ideas

3 cr. hrs. 3 periods (3 lec.)

Introductory survey of western political philosophy. Includes political philosophy as a discipline, and introduction to the ideas of key political thinkers from ancient through medieval, early modern, late modern, and contemporary periods.

Offered: Fall.

POS 204 Introduction to Comparative Politics

3 cr. hrs. 3 periods (3 lec.)

Basic concepts and substance of comparing political systems. Includes methods of comparative political analysis, politics the socio-cultural environment, public authority, and political power, individuals, cultural diversity, and state, political institutions, governmental institutions, and political change.

Offered: Spring.

POS 210 National and State Constitutions

3 cr. hrs. 3 periods (3 lec.)

Principles and procedures of national and state constitutions. Includes major principles of American and Arizona Constitutionalism, historical and legal environments of the United States and Arizona constitutions, structures, powers, and responsibilities of United States government, structures of Arizona government, civil liberties and civil rights in the United States, and constitutional change.

Information: POS 210 satisfies the requirement for teacher certification as does the combination of both POS 201 and 231.

Offered: Fall, Spring, Summer.

POS 231 American State and Local Governments and Politics

3 cr. hrs. 3 periods (3 lec.)

Basic concepts and substance of American state and local politics and government. Includes methods of political analysis, federalism/intergovernmental relations, cultural environment of state and local politics, impact of class, gender, age and occupation, public opinion and fundamental values. Also includes interest articulation and aggregation, institutions and processes of state and local governments, tribal governments, and state and local policy-making.

Information: The combination of both POS 201 and 231 satisfies the requirements for teacher certification, as does POS 210.

Offered: Spring.

POS 232 The Politics and History of Immigration

3 cr. hrs. 3 periods (3 lec.)

Examines the politics of immigration in the United States and the phenomenon of emigration in a global context. Includes analyses of the history of immigration as a result of the country's political economy and its evolution and the role of immigration in the socio-political and economic development of the nation.

Information: Same as HIS 232.

Offered: May not be offered this year, check class schedule.

POS 240 Understanding Terrorism

3 cr. hrs. 3 periods (3 lec.)

Analysis of terrorism as an international phenomenon. Includes terrorism definitions and perspectives, classifications of terrorism, cultural and geographical issues, responses by governments to terrorism, terrorism's future impact on the international and domestic scene, and current government reports on terrorism.

Offered: May not be offered this year, check class schedull.

POS 290 Political Science Internship

3 cr. hrs. 15 periods (15 lab)

Supervised internship in a local governmental office. Includes placement with elected officials or candidates for public office, governmental agencies, and city, county or state departments. Also includes substantive assignments involving development and application of analytical, research and writing skills.

Prerequisite(s): WRT 101.

Information: Completion of 6 credit hours of Political Science courses are required before enrolling in this course. May take course a maximum of three times for a total of nine credit hours.

Offered: Fall, Spring, Summer.

Portuguese

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

POR 101 Elementary Portuguese I

4 cr. hrs. 4 periods (4 lec.)

Basic linguistic skills of the Portuguese language. Includes article, gender, numerals, present indicative, irregular plurals, idiomatic expression, commands, the preterite, and cultural traditions. Also includes proficiency in speaking, reading, writing, and understanding Portuguese.

Offered: May not be offered this year, check class schedule.

POR 102 Elementary Portuguese II

4 cr. hrs. 4 periods (4 lec.)

Continuation of POR 101. Includes preterite indicative, imperfect indicative, simple past tenses of indicative, pronominal verbs, present participle in progressive constructions, subjunctive, and the use of the present, descriptive adjective, present perfect indicative, conditional verbs, present subjunctive, and cultural traditions. Also includes increased proficiency in listening, speaking, reading, and writing Portuguese.

Prerequisite(s): POR 101.

Offered: May not be offered this year, check class schedule.

Professional Flight Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

PFT 101 Stage One: Ground School

4 cr. hrs. 4 periods (4 lec.)

Knowledge and procedures for the Federal Aviation Administration (FAA) private pilot ground school certificate. Includes aerodynamics, instruments and systems, weight and balance, cross-country planning, Airman's Informational Manual (AIM), Notices to Airmen (NOTAMS), aircraft/facility directory, radio navigation, weather, safe and efficient operation of airplanes, and final examination.

Offered: May not be offered this year, check class schedule.

Psychology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

PSY 100 Psychology I

6 cr. hrs. 6 periods (6 lec.)

Information: PSY 100A and 100B together constitute PSY 100.

Offered: May not be offered this year, check class schedule. .

PSY 100A Psychology I

3 cr. hrs. 3 periods (3 lec.)

Survey of psychology including history, perspectives, and methods; development; intelligence, thinking, and language; personality; psychopathology; psychotherapy; and social cognition and behavior.

Recommendation: REA 091 with a C or better (or assessment into REA 112).

Information: The content of PSY 100A and 100B together constitute the content of PSY 100.

Offered: May not be offered this year, check class schedule.

PSY 100B Psychology II

3 cr. hrs. 3 periods (3 lec.)

Survey of psychology including history, perspectives, and methods; structure and functions of the nervous and endocrine systems; perception; learning; motivation and emotion; personality; and stress and health.

Recommendation: REA 091 with a C or better (or assessment into REA 112).

Information: The content of PSY 100A and 100B together constitute the content of PSY 100.

Offered: May not be offered this year, check class schedule.

PSY 101 Introduction to Psychology

4 cr. hrs. 4 periods (4 lec.)

Survey of psychology including history, perspectives, and methods; structure and functions of the nervous and endocrine systems; development; perception; learning; memory; intelligence, thinking and language; motivation and emotion; personality; psychopathology; psychotherapy; stress and health; and social cognition and behavior.

Prerequisite(s): REA 091 with a C or better (or assessment into REA 112).

Information: Content is a combination of elements of PSY 100A and 100B.

Offered: Fall, Spring, Summer.

PSY 101HC Introduction to Psychology: Honors

4 cr. hrs. 4 periods (4 lec.)

Survey of psychology including history, perspectives, and methods; structure and functions of the nervous and endocrine systems; development; perception; learning; memory; intelligence, thinking and language; motivation and emotion; personality; psychopathology; psychotherapy; stress and health; and social cognition and behavior. Also may include the following Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; "publishable quality", peer reviewed paper or project in format appropriate for this discipline: presentation of research, in class or to a wider audience.

Information: Must qualify for Honors program. PSY 101HC will fulfill any PSY 101 requirement. Faculty or Advisor approval may be required before enrolling in this course.

Offered: Fall, Spring.

PSY 132 Psychology and Culture

3 cr. hrs. 3 periods (3 lec.)

Current knowledge about human diversity in behavior and culture using examples from a variety of contexts within western and global societies. Includes cross-cultural psychology, such as intergroup relations, diverse cognitive styles, ethnocentrism, gender, personality, emotion, language, communication, work and health. Also includes enculturation throughout the lifespan and increasing awareness of how behavioral and cognitive principles affect interactions in a multicultural world.

Recommendation: Completion of PSY 100A or 101 before enrolling in this class.

Offered: Fall, Spring.

PSY 210 Introduction to Biopsychology

3 cr. hrs. 3 periods (3 lec.)

Survey of the basic principles of the nervous system function. Includes research methods, theoretical perspectives, anatomy and functions of the nervous system, and brain function and behavior. Also includes such topics as the biological basis of sleep and rhythms, stress and health, aggression and violence, and mental disorders.

Prerequisite(s): PSY 100B or 101.

Information: Prerequisite(s) may be waived with consent of instructor before enrolling in the class.

Offered: May not be offered this year, check class schedule.

PSY 214 Abnormal Psychology

3 cr. hrs. 3 periods (3 lec.)

Overview of the theoretical models, diagnosis, disorders, and treatment approaches in the field of abnormal psychology. Includes history; models; anxiety and mood disorders; mind and body disorders; psychosis and cognitive functioning disorders; and life span disorders.

Prerequisite(s): PSY 100A or 101.

Information: Prerequisite(s) may be waived with consent of instructor before enrolling in this class.

Offered: Fall, Spring.

PSY 215 Human Sexuality

3 cr. hrs. 3 periods (3 lec.)

Examination of human sexual experience throughout the life cycle, viewed from sociological and psychological perspectives. Includes psychological, sociological, and cultural legacy of sexuality, biological foundations of sexuality, varieties of sexual behaviors, sexuality and the life cycle, sexual problems, and social issues.

Recommendation: Completion of one of the following before enrolling in this course: PSY 100A, PSY 100B, PSY 101, or SOC 101. REA 091 with a C or better (or assessment into REA 112).

Information: Same as SOC 215.

Offered: Fall, Spring, Summer.

PSY 216 Psychology of Gender

3 cr. hrs. 3 periods (3 lec.)

Biological and social explanations of gender development and behaviors. Includes research methods used to study gender, biological sexual differentiation, differential socialization and gender stereotyping, gender differences, limitations of traditional gender roles, cross-cultural gender issues, and changing gender roles.

Recommendation: Completion of PSY 100A and 100B, or PSY 101 before enrolling in this course. REA 091 with a C or better (or assessment into REA 112).

Offered: Fall, Spring.

PSY 218 Health Psychology

3 cr. hrs. 3 periods (3 lec.)

Overview of health psychology in relationship to cultural diversity in the United States, and awareness of the universal aspect of humanity. Includes mind-body relationships, behavior risk factors, and psychosocial aspects of specific disorders. Also includes health psychology, social, economic, and political dimensions of relationships between and among ethnic and gender groups.

Recommendation: Completion of PSY 100A or 100B or PSY 101 before enrolling in this course. REA 091 with a C or better (or assessment into REA 112).

Offered: Fall, Spring.

PSY 220 The Psychology of Death and Loss

3 cr. hrs. 3 periods (3 lec.)

Adjustment to death and loss. Includes thinking about death, meaning of death, death system, dying, hospice, and end-of-life issues. Also includes suicide, violent death, euthanasia, bereavement, funeral process, near death experiences, and death education and counseling.

Recommendation: Completion of PSY 100A or 100B or 101 before enrolling in this course. REA 091 with a C or better (or assessment into REA 112).

Offered: Fall, Spring.

PSY 224 Investigating Paranormal Psychology

3 cr. hrs. 3 periods (3 lec.)

Survey of experiments and case studies in paranormal phenomena. Includes extrasensory perception, psychokinesis, and reports of near-death experiences. Also includes research methodologies and potential applications.

Recommendation: Completion of PSY 100A or 101 before enrolling in this class. REA 091 with a C or better (or assessment into REA 112).

Offered: Fall.

PSY 230 Psychological Measurements and Statistics

3 cr. hrs. 3 periods (3 lec.)

Measurement, quantitative description and statistical inference as applied to psychological variables. Includes scientific research and statistics, descriptive statistics, inferential statistics, correlation and linear regression, and non-parametric tests.

Prerequisite(s): PSY 100A or 101, and MAT 122 or equivalent with a C or better.

Information: Prerequisite(s) may be waived with consent of instructor before enrolling in the class.

Offered: Fall, Spring, Summer.

PSY 240 Developmental Psychology

3 cr. hrs. 3 periods (3 lec.)

Human development from conception through adulthood. Includes physical, cognitive, emotional, and social development milestones at various periods in the lifespan. Also includes research methods used in developmental psychology, and the exploration of empirical literature in psychology as it relates to developmental issues.

Prerequisite(s): PSY 100A and 100B, or 101.

Information: Prerequisite(s) may be waived with consent of instructor before enrolling in the class.

Offered: Fall, Spring, Summer.

PSY 250 Introduction to Social Psychology

3 cr. hrs. 3 periods (3 lec.)

Introduction to major theories and research findings of social psychology. Includes research focus and methods, social influence on individual behavior, effects of culture and gender on social behavior, self-perception and attitudes, and social perceptions and international relations.

Prerequisite(s): PSY 100A or 101.

Information: Prerequisite(s) may be waived with consent of instructor before enrolling in this class.

Offered: May not be offered this year, check class schedule.

PSY 254 Psychology of Love and Compassion

3 cr. hrs. 3 periods (3 lec.)

Introduction to theory and research on the psychology of love and caring. Includes applications to mental, physical and spiritual health. Also includes gender behaviors and expectations in loving relationships.

Recommendation: Completion of PSY 100A or 100B or PSY 101. REA 091 with a C or better (or assessment into REA 112).

Offered: Spring.

PSY 262 Positive Psychology

3 cr. hrs. 3 periods (3 lec.)

An introduction to research, theory and intellectual history of positive psychology. Overview and application of psychological principles relevant to the nature of happiness and psychological well-being as opposed to dysfunction and symptoms of mental disorders. Includes research methods, authenticity, happiness, mindfulness, positive interventions, emotional intelligence, character strengths, creativity, and core values and virtues.

Recommendation: PSY 101 with a C or better.

Offered: Fall, Spring.

PSY 270 Meditation

3 cr. hrs. 3 periods (3 lec.)

Theoretical principles and selected traditions of meditation self-awareness. Includes principles and techniques of meditation, meditation traditions, literature of meditation, meditation arts, and psychology and physiology of meditation.

Offered: May not be offered this year, check class schedule.

PSY 289 Psychology Research Methods

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to scientific methodologies used in psychological research. Includes experience in using a range of psychological research methods for students.

Prerequisite(s): PSY 100A and 100B, or PSY 101; and PSY 230 and WRT 101 with a grade of C or better.

Recommendation: Designed for students planning to major or minor in psychology.

Information: Prerequisite(s) may be waived with consent of instructor before enrolling in this class.

Offered: Fall, Spring.

Radiologic Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

RAD 170 Medical Imaging Fundamentals

2 cr. hrs. 2 periods (2 lec.)

Principles of radiographic imaging. Includes program orientation, production of diagnostic radiation, image formation, ethics and professionalism, patient care and assessment, age specific care considerations, and radiographic positioning of the abdomen and chest.

Corequisite(s): RAD 170LB

Information: Consent of program faculty is required before enrolling in this course.

Offered: Summer.

RAD 170LB Medical Imaging Fundamentals Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of RAD 170.

Corequisite(s): RAD 170

Offered: Summer.

RAD 171 Radiographic Positioning I

3 cr. hrs. 3 periods (3 lec.)

Overview of radiographic procedures. Includes standard terms, general considerations, positioning considerations for routine and special radiographic procedures, and radiographic positions of the upper extremities, shoulder girdle, and lower extremities.

Prerequisite(s): RAD 170/170LB.

Corequisite(s): RAD 171LB, RAD 172, RAD 172LB, RAD 173LC

Information: Consent of program faculty is required before enrolling in this course.

Offered: Fall.

RAD 171LB Radiographic Positioning I Lab

1.5 cr. hrs. 4.5 periods (4.5 lab)

This is the lab portion of RAD 171.

Corequisite(s): RAD 171, RAD 172, RAD 172LB, RAD 173LC

Offered: Fall.

RAD 172 Medical Imaging Technology I

3 cr. hrs. 3 periods (3 lec.)

Introduction to the principles of x-ray production. Includes matter and the atom, mass and energy; electricity, magnetism, and electromagnetism; x-ray tubes, x-ray generators, diagnostic x-ray systems, ALARA guidelines and practices, and the prime factors.

Prerequisite(s): RAD 170/170LB.

Corequisite(s): RAD 171, RAD 171LB, RAD 172LB, RAD 173LC

Information: Consent of program faculty is required before enrolling in this course.

Offered: Fall.

RAD 172LB Medical Imaging Technology I Lab

.5 cr. hrs. 1.5 periods (1.5 lab)

This is the lab portion of RAD 172.

Prerequisite(s): RAD 170/170LB.

Corequisite(s): RAD 171, RAD 171LB, RAD 172, RAD 173LC

Information: Consent of program faculty is required before enrolling in this course.

Offered: Fall.

RAD 173LC Clinical Education I

6 cr. hrs. 24 periods (24 lab)

Introduction to the first clinical practicum. Includes clinical site orientation, radiographic equipment and supplies, exam protocols, and routine and special radiographic examinations.

Prerequisite(s): RAD 170/170LB.

Corequisite(s): RAD 171, RAD 171LB, RAD 172, RAD 172LB

Information: Consent of program faculty is required before enrolling in this course.

Information: Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporates critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.

Offered: Fall.

RAD 174 Radiographic Positioning II

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 171. Includes routine and special positioning of the pelvis, hips, SI joints, boney thorax, and vertebral column. Also includes pediatric radiography, trauma/surgical mobile radiography, and related osseous system pathology.

Prerequisite(s): RAD 171/171LB, 172/172LB and 173LC.

Corequisite(s): RAD 174LB, RAD 175, RAD 175LB, RAD 176LC

Information: Consent of program faculty is required before enrolling in this course.

Offered: Spring.

RAD 174LB Radiographic Positioning II Lab

1.5 cr. hrs. 4.5 periods (4.5 lab)

This is the lab portion of RAD 174.

Corequisite(s): RAD 174, RAD 175, RAD 175LB, RAD 176LC

Offered: Spring.

RAD 175 Medical Imaging Technology II

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 172/172LB. Includes concepts of radiographic image quality, x-ray interactions with matter, formulation of x-ray techniques, automatic exposure control, and x-ray detection devices.

Prerequisite(s): RAD 171/171LB, 172/172LB and 173LC.

Corequisite(s): RAD 174, RAD 174LB, RAD 175LB, RAD 176LC

Information: Consent of program faculty is required before enrolling in this course.

Offered: Spring.

RAD 175LB Medical Imaging Technology II Lab

.5 cr. hrs. 1.5 periods (1.5 lab)

This is the lab portion of RAD 175.

Prerequisite(s): RAD 171/171LB, 172/172LB and 173LC.

Corequisite(s): RAD 174, RAD 174LB, RAD 175, RAD 176LC

Information: Consent of program faculty is required before enrolling in this course.

Offered: Spring.

RAD 176LC Clinical Education II

6 cr. hrs. 24 periods (24 lab)

Continuation of RAD 173LC. Includes routine and special radiographic procedures, trauma and mobile radiography, osseous pathology, and pediatric radiography.

Prerequisite(s): RAD 171/171LB, 172/172LB and 173LC.

Corequisite(s): RAD 174, RAD 174LB, RAD 175, RAD 175LB

Information: Consent of program faculty is required before enrolling in this course.

Information: Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporates critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.

Offered: Spring.

RAD 177LC Clinical Education III

6 cr. hrs. 24 periods (24 lab)

Continuation of RAD 176LC. Includes routine and special radiographic procedures, mobile radiography, emergency department procedures, and observation and assisting in fluoroscopic procedures.

Prerequisite(s): RAD 174/174LB, 175/175LB and 176LC.

Information: Consent of program faculty is required before enrolling in this course.

Information: Competency-based assigned, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporates critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.

Offered: Summer.

RAD 181 Radiographic Positioning III

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 174. Includes radiographic positioning and fluroscopic procedures of the urinary system, pharmacodynamics of radiopaque contrast media, intravenous drug administration technique (venipuncture), the digestive system, the biliary system, and pathology.

Prerequisite(s): RAD 174/174LB and 177LC.

Corequisite(s): RAD 181LB, RAD 182, RAD 183LC

Information: Consent of program coordinator is required before enrolling in this course.

Offered: Fall.

RAD 181LB Radiographic Positioning III Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of RAD 181.

Corequisite(s): RAD 181, RAD 182, RAD 183LC

Offered: Fall.

RAD 182 Medical Imaging Technology III

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 175. Includes image intensification, digital fluoroscopy, special imaging procedures, principles of conventional film processing, other imaging modalities, and professional roles and behaviors.

Prerequisite(s): RAD 175/175LB, 177LC.

Corequisite(s): RAD 181, RAD 181LB, RAD 183LC

Information: Consent of program faculty is required before enrolling in this course.

Offered: Fall.

RAD 183LC Clinical Education IV

4 cr. hrs. 16 periods (16 lab)

Continuation of RAD 177LC. Includes diagnostic and fluoroscopic equipment and procedures, contrast media policies and protocols, intravenous administration, and routine and special examinations

Prerequisite(s): RAD 177LC.

Corequisite(s): RAD 181, RAD 181LB, RAD 182

Information: Consent of program faculty is required before enrolling in this course.

Information: Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporates critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.

Offered: Fall.

RAD 184 Radiographic Positioning IV

3 cr. hrs. 3 periods (3 lec.)

Continuation of RAD 181. Includes positioning for the cranial and facial bones, acute medical emergencies, review of vital signs, radiation biology, and infection control and preventing transmissible diseases.

Prerequisite(s): RAD 181/181LB, 182, 183LC.

Corequisite(s): RAD 184LB, RAD 185, RAD 186LC

Information: Consent of program faculty is required before enrolling in this course.

Offered: Spring.

RAD 184LB Radiographic Positioning IV Lab

.5 cr. hrs. 1.5 periods (1.5 lab)

This is the lab portion of RAD 184.

Prerequisite(s): RAD 181/181LB, 182, 183LC.

Corequisite(s): RAD 184, RAD 185, RAD 186LC

Offered: Spring.

RAD 185 Clinical Seminar

2.5 cr. hrs. 2.5 periods (2.5 lec.)

This is a capstone course. Includes review of radiographic procedures and exams, image acquisition and evaluation, patient care, equipment operation/maintenance/quality control, radiation protection and safety, and completion of registry mock exams.

Prerequisite(s): RAD 181/181LB, 182, 183LC.

Corequisite(s): RAD 184, RAD 184LB, RAD 186LC

Information: Consent of program faculty is required before enrolling in this course.

Information: This is a capstone course which includes review of program curriculum and instruction in applying to the American Registry of Radiologic Technology (AART) and the Medical Radiologic Technology Board of Examiners (MRTBE). The course includes review sessions, written mock registry and multiple computerized exams.

Offered: Spring.

RAD 186LC Clinical Education V

6 cr. hrs. 24 periods (24 lab)

Continuation of RAD 183LC. Includes skull and facial bones radiographic procedures, advanced modality rotations, and image critique and evaluation.

Prerequisite(s): RAD 181/181LB, 182, 183LC.

Corequisite(s): RAD 184, RAD 184LB, RAD 185

Information: Consent of program faculty is required before enrolling in this course.

Information: Competency-based assignments, concepts of patient-centered clinical practice and professional development shall be discussed, examined, performed and evaluated under the supervision of a certified Radiologic Technologist. The clinical practicum incorporated critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of radiographic procedures.

Offered: Spring.

Reading

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

REA 071 Reading Fundamentals

4 cr. hrs. 4 periods (4 lec.)

Development of fundamental reading strategies. Includes extensive development of word analysis, vocabulary, information literacy, and reading strategies necessary to assure successful comprehension at the literal and interpretive levels.

Information: Designed for persons who need an intensive review of the basic reading strategies.

Offered: Fall, Spring.

REA 081 Reading Improvement I

4 cr. hrs. 4 periods (4 lec.)

Improvement of basic reading strategies. Includes development of word analysis, vocabulary, information literacy, and reading strategies necessary to assure successful comprehension at the literal level and interpretive levels.

Prerequisite(s): REA 071 with a C or better or required score on Reading assessment test.

Information: Designed for persons who need to improve strategies in order to increase their success in college.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

REA 091 Reading Improvement II

4 cr. hrs. 4 periods (4 lec.)

Development of reading strategies. Includes vocabulary comprehension, study strategies, metacognition, information literacy, and community of readers.

Prerequisite(s): With a C or better: ESL 088RV or REA 081, or required score on the Reading assessment. .

Information: May be taken two times for a maximum of 8 credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

REA 112 Critical Reading

4 cr. hrs. 4 periods (4 lec.)

Development of college reading strategies. Includes comprehension strategies at the college level, critical reading and thinking, information literacy, vocabulary development, and advanced study strategies.

Prerequisite(s): Reading: ESL 088RV with a B or better, or REA 091 with a C or better, or required score on the Reading assessment.

Writing: ESL 088WG with a B or better, or WRT 070 with a C or better, or required score on the Writing assessment.

Information: Student may be admitted with instructor recommendation.

Offered: Fall, Spring, Summer.

REA 112HP Critical Reading for Health Professions

4 cr. hrs. 4 periods (4 lec.)

Development of college reading strategies. Includes comprehension strategies at the college level, critical reading and thinking, information literacy, vocabulary development, and advanced study strategies.

Prerequisite(s): Reading: ESL 088RV with a B or better, or REA 091 with a C or better, or required score on the Reading assessment. Writing: ESL 088WG with a B or better, or WRT 070 with a C or better, or required score on the Writing assessment.

Recommendation: Recommended for students pursuing an associate's degree in Nursing, Radiologic Technology, Respiratory Therapy or Dental Hygiene Education.

Information: Students must obtain consent of an advisor, counselor, or reading instructor before enrolling in this course. Same as REA 112.

Offered: Fall, Spring.

Religion

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

REL 119 Judaism, Christianity, and Islam

3 cr. hrs. 3 periods (3 lec.)

Introduction to the three major western religions. Includes nature of religious belief, development of Judaism, teaching of Judaism, festivals and rituals of Judaism, development of Christianity, teaching of Christianity, Christian festivals and rituals, development of Islam, teachings of Islam, Islamic festivals and rituals, and common heritage, emphasis, and variations of Judaism, Christianity, and Islam.

Offered: May not be offered this year, check class schedule.

REL 130 Asian Religions

3 cr. hrs. 3 periods (3 lec.)

Religions of India and the Far East. Includes Hinduism, Buddhism, and East Asian religions.

Offered: Fall.

REL 140 Philosophy of Religion

3 cr. hrs. 3 periods (3 lec.)

Introduction to Western philosophical methods as applied to religion. Includes philosophical method, nature and meaning of religion and God, classical arguments, faith and reason, theodicy, mysticism, and the impact of religion on ethics, psychology, and law.

Information: Same as PHI 140.

Offered: Fall, Spring.

REL 200 Religion in Popular Culture

3 cr. hrs. 3 periods (3 lec.)

Exploration of the relationship between religion and contemporary society. Includes representation of religion in popular culture, function of religion as popular culture, and conflicts between religion and popular culture. Also includes a focus on popular media, such as movies, television, music, news, advertising, and recreation.

Offered: Fall, Spring.

REL 220 Old Testament

3 cr. hrs. 3 periods (3 lec.)

Major books of the Old Testament. Includes literary forms, historical context, moral implications of the literature, and religious significance.

Offered: Fall, Spring.

REL 221 New Testament

3 cr. hrs. 3 periods (3 lec.)

Major books of the New Testament. Includes literary forms, historical context, moral implications of the literature, and religious significance.

Offered: Fall.

Reserve Officer's Training Corps (ROTC) - Air Force

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MLA 100 Foundations of Air Force I

2 cr. hrs. 2 periods (2 lec.)

Foundations of the United States Air Force I is the first half of a survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force.

Information: United States Air Force Reserve Officers' Training Corps (AFROTC). Cadets must attend a Leadership seminar on Tuesday and Thursday from 6:45 A.M. to 7:45 A.M. Course offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

MLA 101 Foundation of the Air Force II

2 cr. hrs. 2 periods (2 lec.)

Foundations of the United States Air Force II is the second half of a survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force.

Information: United States Air Force Reserve Officers' Training Corps (AFROTC). Cadets must attend a Leadership seminar on Tuesday and Thursday from 6:45 A.M. to 7:45 A.M. Course offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

MLA 110 Military Aerospace Physical Training Program

1 cr. hrs. 2 periods (2 lab)

Introduction to the Air Force physical training program. Includes attention to the group's physical ability, emphasis on individual physical abilities, and gradual increase to a higher level of physical fitness. Also includes establishment of goals and standards for conduct in physical training, and prepares the student to pass the Air Force Physical Fitness Assessment (AF PFA).

Information: Initial dates for the AF PFA will be determined the first week of class and identified in the cadet wing calendar.

Offered: May not be offered this year, check class schedule.

MLA 200 Evolution of USAF Air and Space Power I

2 cr. hrs. 2 periods (2 lec.)

Evolution of USAF Air and Space Power I is the first half of a survey course that features topics on Air Force heritage and leaders. Includes introduction to air power through examination of the Air Force Core Functions; and application of communication skills. Course purpose is to instill an appreciation of the development and employment of air power and to motivate second year students to transition from Air Force Reserve Officers' Training Corps (AFROTC) Cadet to Air Force ROTC Officer Candidate.

Information: United States Air Force Reserve Officers' Training Corps (AFROTC) Cadets must attend a Leadership seminar on Tuesday and Thursday from 6:45 A.M. to 7:45 A.M. Course offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

MLA 201 Evolution USAF Air and Space Power II

2 cr. hrs. 2 periods (2 lec.)

Evolution of USAF Air and Space Power II is the second half of a survey course that features topics on Air Force heritage and leaders. Includes introduction to air power through examination of the Air Force Core Functions; and application of communication skills. Course purpose is to instill an appreciation of the development and employment of air power and to motivate second year students to transition from Air Force Reserve Officers' Training Corps (AFROTC) Cadet to Air Force ROTC Officer Candidate.

Information: United States Air Force Reserve Officers' Training Corps (AFROTC) Cadets must attend a Leadership seminar on Tuesday and Thursday from 6:45 A.M. to 7:45 A.M. Course offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

Reserve Officer's Training Corps (ROTC) - Army

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

MLS 100 Introduction to Military Skills I

3 cr. hrs. 3 periods (3 lec.)

Introduction to Army leadership and the Reserve Officers' Training Corps (ROTC) program. Includes role of the U.S. Army, principles and techniques of applied leadership, customs, traditions and military courtesy, basic marksmanship, first aid, land navigation, and small-unit tactics.

Information: Course offered in cooperation with the University of Arizona. Field trip may be required to Ft. Huachuca, AZ.

Offered: May not be offered this year, check class schedule.

MLS 101 Introduction to Military Skills II

3 cr. hrs. 3 periods (3 lec.)

Continuation of MLS 100. Introduction to Army leadership and the Reserve Officers' Training Corps (ROTC) program. Includes U.S. Army tactical concepts such as map reading, land navigation, and general operations. Also includes Adaptive Leader Methodology (ALM) and development of leader character presence, intellect, and intelligence.

Prerequisite(s): MLS 100 with a C or better.

Information: Course offered in cooperation with the University of Arizona. Field trip may be required to Ft. Huachuca, AZ.

Prerequisite(s) may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

MLS 102 Army Physical Training

1 cr. hrs. 1.5 periods (.5 lec., 1 lab)

Introduction to the importance of physical fitness and its life long benefits. Includes physical conditioning, establishing goals and setting standards for physical training.

Offered: May not be offered this year, check class schedule.

MLS 103 Ranger Challenge

1 cr. hrs. 2 periods (2 lab)

Introduction to the basic military skills needed to complete the ranger challenge. Includes individual fitness training, team building skills, self-discipline, and conditioning.

Offered: May not be offered this year, check class schedule.

MLS 200 Army Leadership Dynamics I

3 cr. hrs. 3 periods (3 lec.)

Foundations of tactical leadership strategies and styles. Includes development of attributes and core leadership competencies of Army rank, structure, and duty. Also includes personal motivation and team building through planning, executing, assessing team exercises, and leadership sessions.

Prerequisite(s): MLS 100 and 101 with a C or better.

Information: Course offered in cooperation with the University of Arizona. Field trip may be required to Ft. Huachuca, AZ.

Prerequisite(s) may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

MLS 201 Army Leadership Dynamics II

3 cr. hrs. 3 periods (3 lec.)

Continuation of MLS 200. Foundations of tactical leadership strategies and styles. Includes challenges of leading tactical teams in the operational environment; dynamics of adaptive leadership in military operations; and development of individual leadership styles. Also includes self-awareness, communications, and team building skills.

Prerequisite(s): MLS 200 with a C or better.

Information: Course offered in cooperation with the University of Arizona. Field trip may be required to Ft. Huachuca, AZ.

Prerequisite(s) may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

MLS 296 Independent Study in Military Science

3 cr. hrs. 3 periods (2 lec., 1 lab)

Advanced level study in leadership, values and ethics, personal development, officership, tactics and techniques, and effective writing. Includes topics that contribute to the development of professional and proficient cadets and officers.

Information: Course offered in cooperation with the University of Arizona.

Information: See an instructor before enrolling in this course.

Offered: May not be offered this year, check class schedule.

Reserve Officer's Training Corps (ROTC) - Navy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

NSP 100 Naval Laboratory I

1 cr. hrs. 2 periods (2 lab)

Overview of the Naval service. Includes drill and ceremonies, physical fitness, cruise preparation, sail training, safety awareness, and personal finances. Also includes applied exercises in naval ship systems, navigation, naval operations, naval administration, and military justice.

Information: Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

Information: May be taken four times for a maximum of four credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

NSP 101 Introduction to Naval Science

3 cr. hrs. 3 periods (3 lec.)

Provides the general military information required of a junior officer in the naval service by introducing structure, mission, and long held customs and traditions. Includes a brief description of each community within the Navy, an outline of Military Law as it applies to the junior officer, sea power and its implications, and shipboard damage control and safety.

Information: Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

NSP 102 Naval Ship Systems I

3 cr. hrs. 3 periods (3 lec.)

Overview of naval ship systems engineering. Includes the fundamentals of ship construction, stability, damage control and repair, basic thermodynamics, and steam and nuclear propulsion systems.

Information: Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program at the University of Arizona is required before enrolling in this course. This course is offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

NSP 103 Naval Laboratory I (Marine Option)

2 cr. hrs. 4 periods (4 lab)

Overview of drill and physical readiness requirements for Marines. Includes topics, such as drill and ceremonies, physical fitness, Officer Candidate School (OCS) preparation, Land Navigation training, safety awareness, general military subjects, and applied field exercises in Marine Corps small unit.

Information: Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program (Marine Option) at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

NSP 110 Navy/Marine Physical Training

1 cr. hrs. 2 periods (2 lab)

Introduction to Navy and Marine Corps physical training. Includes physical fitness and physical leadership through running, swimming, calisthenics, circuit training, obstacle course, and team-effort events. Also includes establishment of goals and standards for conduct in physical training, and prepares the student to pass the Navy Personal Fitness Assessment (PFA) or the Marine Corps Physical Fitness Test (PFT) and Combat Fitness Test (CFT).

Information: Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program (Marine Option) at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona. A final physical fitness test will be run during the last month of the course.

Offered: May not be offered this year, check class schedule.

NSP 201 Naval Ship Systems II

3 cr. hrs. 3 periods (3 lec.)

Introduction to the basic concepts in detection, tracking, and destruction of enemy forces. Emphasis will be placed on the fundamentals of weapon systems theory, principles, and application. Discussion of past, present, and future weapons will be included to understand the evolution of weapons systems components and their applications.

Information: Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program (Marine Option) at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

NSP 202 Sea Power and Maritime Affairs

3 cr. hrs. 3 periods (3 lec.)

United States (U.S.) Naval history from the American Revolution to the present. Includes the general concept of sea power, the role of various warfare components of the Navy in supporting its mission, the implementation of sea power as an instrument of national policy, and a comparative study of U.S. and Soviet naval strategies.

Information: Acceptance into the Navy Reserve Officers' Training Corps (ROTC) program (Marine Option) at the University of Arizona is required before enrolling in this course. Course offered in cooperation with the University of Arizona.

Offered: May not be offered this year, check class schedule.

Respiratory Therapy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

RTH 110 Introduction to Respiratory Care

4 cr. hrs. 4 periods (4 lec.)

Overview of respiratory care. Includes respiratory care and the health care system, computer applications, terms, symbols, and units of measure, patient safety, communication, and record keeping, demonstration of basic life support, principles of infection control, ethical and legal implications of practice, cultural sensitivity in health care, and disaster preparedness.

Corequisite(s): RTH 112, RTH 121, RTH 121LB

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 112 Respiratory Physiology

4 cr. hrs. 4 periods (4 lec.)

Study of the cardiopulmonary system and associated structures. Includes the anatomy of the respiratory system, ventilation and diffusion of pulmonary gases, the circulatory system, oxygen and carbon dioxide transport, control of ventilation, and renal failure and its effects on the cardiopulmonary system.

Corequisite(s): RTH 110, RTH 121, RTH 121LB

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 121 Basic Therapeutics

4 cr. hrs. 4 periods (4 lec.)

Basic respiratory care therapeutics, equipment function, clinical indications and contraindications. Includes medical gas therapy, oxygen delivery devices, humidity and aerosol therapy, hyperinflation therapy, chest physical therapy, and basic airway management.

Corequisite(s): RTH 110, RTH 112, RTH 121LB

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 121LB Basic Therapeutics Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of RTH 121.

Corequisite(s): RTH 110, RTH 112, RTH 121

Information: Students must be admitted to the Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 123 Basic Assessment and Monitoring

3 cr. hrs. 3 periods (3 lec.)

Study of patient assessment and monitoring of the cardiopulmonary impaired patient. Includes bedside respiratory assessment, clinical laboratory studies assessment, oxygenation and ventilation, pulmonary function measurements, clinical application of chest radiography, and basic interpretation of electrocardiogram tracing.

Prerequisite(s): RTH 110, 112, 121 and 121LB.

Corequisite(s): RTH 123LB, RTH 124, RTH 125LC, RTH 162, RTH 246

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 123LB Basic Assessment and Monitoring Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of RTH 123.

Prerequisite(s): RTH 110, 112, 121 and 121LB.

Corequisite(s): RTH 123, RTH 124, RTH 125LC, RTH 162, RTH 246

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 124 Pharmacology for Respiratory Care

3 cr. hrs. 3 periods (3 lec.)

Principles of pharmacology and drug receptor theory as it relates to patients with cardiopulmonary disease. Includes general principles of pharmacology, drug dose calculations, central and peripheral nervous system, bronchodilators, drugs used to control airway mucus and edema, and drugs used in the management of ventilator patients and patients with cardiorespiratory disorders.

Prerequisite(s): RTH 110, 112, 121 and 121LB.

Corequisite(s): RTH 123, RTH 123LB, RTH 125LC, RTH 162, RTH 246

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 125LC Clinical Procedures I

1 cr. hrs. 4 periods (4 lab)

Clinical application of all prerequisite and concurrent respiratory care course work. Includes hospital/clinical site orientations, review of hospital respiratory department administration, departmental policies, procedures, reporting system, and medical record data entry, utilization of the medical record to retrieve information, therapist observation, medical gas therapy, and patient assessment and monitoring. Also includes aerosol therapy administration, hyperinflation therapy, evaluation of the effectiveness of therapy, and patient care plans.

Prerequisite(s): RTH 110, 112, 121, and 121LB.

Corequisite(s): RTH 123, RTH 123LB, RTH 124, RTH 162, RTH 246

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 135LC Clinical Procedures II

3 cr. hrs. 12 periods (12 lab)

Continuation of RTH 125LC. Includes infection control procedures, medical asepsis, equipment disinfection, and processing, aerosol and humidity therapy, medical gas therapy, IPPB therapy, incentive spirometry, and chest physiotherapy. Also includes airway management and care, basic cardiopulmonary resuscitation, arterial blood gases, and case study presentation.

Prerequisite(s): RTH 123, 123LB, 124, 125LC, 162, and 246.

Corequisite(s): RTH 123, RTH 123LB, RTH 124, RTH 162, RTH 246

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Summer.

RTH 162 Principles of Mechanical Ventilation

3 cr. hrs. 3 periods (3 lec.)

Introduction to the concepts of mechanical ventilation for the adult patient. Includes establishing the need for mechanical ventilation, non-invasive versus invasive mechanical ventilation, the physiologic basis of ventilatory support, physical principles of positive pressure ventilation, physical assessment of the critically ill patient, interpreting basic waveform graphics, and respiratory monitoring in the intensive care unit.

Prerequisite(s): RTH 110, 112, 121, and 121LB.

Corequisite(s): RTH 123, RTH 123LB, RTH 124, RTH 125LC, RTH 135LC, RTH 246

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 241 Critical Care Therapeutics

4 cr. hrs. 4 periods (4 lec.)

Study of critical care principles and procedures in the adult patient. Includes airway management, mechanical ventilation waveform graphics, selected adult mechanical ventilators and troubleshooting, care of the mechanically ventilated patient, alternative modes of mechanical ventilation, and home mechanical ventilation.

Prerequisite(s): RTH 135LC.

Corequisite(s): RTH 241LB, RTH 243, RTH 243LB, RTH 245LC

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 241LB Critical Care Therapeutics Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of RTH 241.

Prerequisite(s): RTH 135LC.

Corequisite(s): RTH 241, RTH 243, RTH 243LB, RTH 245LC

Information: Students must be admitted to the PCC Respiratory Care program and obtain content of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 243 Advanced Assessment and Monitoring

4 cr. hrs. 4 periods (4 lec.)

Study of the assessment of the critical respiratory patient. Includes cardiac output assessment, invasive hemodynamic monitoring, assessment of sleep-related breathing disorders, nutritional assessment and the respiratory system, advanced cardiac arrhythmia interpretation, cardiac stress testing, bronchoscopy, and advanced pulmonary function testing.

Prerequisite(s): RTH 135LC.

Corequisite(s): RTH 241, RTH 241LB, RTH 243LB, RTH 245LC

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 243LB Advanced Assessment and Monitoring Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of RTH 243.

Prerequisite(s): RTH 135LC.

Corequisite(s): RTH 241, RTH 241LB, RTH 243, RTH 245LC

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 245LC Clinical Procedures III

4 cr. hrs. 16 periods (16 lab)

Continuation of RTH 135LC. Includes clinical assessment of the critical care patient, advanced airway management, advanced respiratory assessment monitoring, adult mechanical ventilation, transport of the critically ill patient, and care decisions in mechanically ventilated adult patients. Also includes hemodynamic assessment of the critically ill patient, observation in various respiratory care delivery environments, interaction with medical director, and case study presentation.

Prerequisite(s): RTH 135LC.

Corequisite(s): RTH 241, RTH 241LB, RTH 243, RTH 243LB

Information: Students must be admitted to the Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Fall.

RTH 246 Cardiorespiratory Disorders I

3 cr. hrs. 3 periods (3 lec.)

Study of commonly encountered respiratory disorders in the adult patient. Includes infectious pulmonary diseases, obstructive pulmonary disease, traumatic injuries of the lungs and chest, pulmonary vascular diseases and disorders of the pleura and chest wall, and various important cardiopulmonary topics.

Prerequisite(s): RTH 110, 112, 121, and 121LB.

Corequisite(s): RTH 123, RTH 123LB, RTH 124, RTH 125LC, RTH 162

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 251 Specialty Therapeutics

4 cr. hrs. 4 periods (4 lec.)

Study of respiratory therapies used in specialized environments. Includes development and care of the fetus, care of the neonatal and pediatric patient, management of ventilation and oxygenation in the neonatal and pediatric patient, transport, home care, and care of the parents, pulmonary rehabilitation, and advanced cardiorespiratory care therapies.

Prerequisite(s): RTH 241/241LB, 243/243LB and 245LC.

Corequisite(s): RTH 251LB, RTH 255LC, RTH 256, RTH 257LB

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 251LB Specialty Therapeutics Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of RTH 251.

Prerequisite(s): RTH 241/241LB, 243/243LB and 245LC.

Corequisite(s): RTH 251, RTH 255LC, RTH 256, RTH 257LB

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent of the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 255LC Clinical Procedures IV

4 cr. hrs. 16 periods (16 lab)

Continuation of RTH 245. Includes clinical assessment, advanced airway management and advanced respiratory assessment monitoring of the neonatal/pediatric patient, mechanical ventilation and care decisions for the adult and neonatal/pediatric patient, observation and participation in various respiratory care delivery environments, and case study presentation preparation.

Prerequisite(s): RTH 241/241LB, 243/243LB and 245LC.

Corequisite(s): RTH 251, RTH 251LB, RTH 256, RTH 257LB

Information: Students must be admitted to the PCC Respiratory program and obtain consent of the Respiratory Care department before enrolling in this course.

Offered: Spring.

RTH 256 Cardiorespiratory Disorders II

3 cr. hrs. 3 periods (3 lec.)

Continuation of RTH 246. Includes neuromuscular disorders affecting ventilation, neoplastic diseases of the lung and environmental lung diseases. Also includes assessment of the developing fetus and the neonate, cardiovascular disorders and congenital anomalies of the newborn, cardiopulmonary disorders of the newborn, and pediatric cardiopulmonary disorders.

Prerequisite(s): RTH 241, 243, 245 and 246.

Corequisite(s): RTH 251, RTH 251LB, RTH 255LC, RTH 257LB

Information: Students must be admitted to the PCC Respiratory program and obtain consent of the Respiratory Care department before enrolling in this course.

Offered: Spring.

RTH 257LB Clinical Applications and Professional Development

1 cr. hrs. 4 periods (4 lab)

Completion of clinical application projects. Includes preparation of resumes, review for and completion of computerized self-assessment exams for credentialing, and interaction with licensure and national credentialing organizations. Also includes participation in a respiratory related service learning project and professional development through shared reporting.

Prerequisite(s): RTH 241/241LB, 243/243LB and 245LC.

Corequisite(s): RTH 251, RTH 251LB, RTH 255LC, RTH 256

Information: Students must be admitted to the PCC Respiratory Care program and obtain consent from the Respiratory Care department before enrolling in this course. See a faculty advisor prior to enrollment.

Offered: Spring.

RTH 295 Independent Research in Respiratory Therapy

.5-4 cr. hrs. 1.5-12 periods (1.5-12 lab)

Experience in scientific laboratory or field research in respiratory therapy.

Information: This course is open only to those students who have been admitted to the RTH program.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Summer.

Russian

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

RUS 101 Elementary Russian I

4 cr. hrs. 4 periods (4 lec.)

Introduction to the Russian language. Includes Cyrillic alphabet, greetings, gender, readings, communications, and activities.

Offered: May not be offered this year, check class schedule.

RUS 102 Elementary Russian II

4 cr. hrs. 4 periods (4 lec.)

Continuation of RUS 101. Includes grammar and vocabulary, housing and furniture, family and professions, shopping, money and measurements, and biographies of people.

Prerequisite(s): RUS 101.

Information: Prerequisite(s) may be waived with one year of high school Russian. See an instructor.

Offered: May not be offered this year, check class schedule.

Science Summer Career Academy

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

SCA 100EP Career Choices in STEM: Physics and Engineering

2 cr. hrs. 2 periods (2 lec.)

Introduction and exploration of the various careers available in engineering and physics. Includes college preparation, university transfer skills, developing a career goal and educational action plan, interviewing strategies and practices, and the fundamentals of physics, engineering, and mathematics.

Offered: May not be offered this year, check class schedule.

SCA 100ST Career Choices in STEM: Science

2 cr. hrs. 2 periods (2 lec.)

Introduction and exploration of the various careers available in science. Includes college preparation, university transfer skills, developing a career goal and educational action plan, interviewing strategies and practices, and the fundamentals of chemistry, biology, geology, and mathematics.

Offered: May not be offered this year, check class schedule.

Science for Teachers

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

SCT 280 Process of Science for Elementary Educators I

3 cr. hrs. 3 periods (3 lec.)

Interdisciplinary, hands-on, inquiry-based science for elementary educators. Includes the nature of science, integrating science in the elementary school classroom, technology and society, matter and energy, the universe, structure of life and organism in their environment.

Prerequisite(s): BIO 105, MAT 142, and one of the following: AST 101IN, AST 102IN; CHM 121IN, CHM 130IN, CHM 151IN; GEO 101, GEO 102; GLG 102IN; PHY 121/121LB or 121IN.

Information: Designed for elementary education majors. Prerequisite(s) may be waived with Elementary or Secondary Teacher Certification. Does not meet AGEC requirements for science.

Offered: Fall.

SCT 281 Process of Science for Elementary Educators II

3 cr. hrs. 3 periods (3 lec.)

Continuation of SCT 280. Includes integrating additional science in the elementary school classroom, human health, human society, applying science and technology, patterns and relationships, historical perspectives, and critical thinking processes.

Prerequisite(s): SCT 280.

Information: Designed for elementary education majors. Prerequisite(s) may be waived with Elementary or Secondary Teacher Certification. Does not meet AGEC requirements for science.

Offered: Spring.

Social Services

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

SSE 110 Introduction to Social Welfare

3 cr. hrs. 3 periods (3 lec.)

Introduction to the social welfare system. Includes historical context, approaches to service delivery, social welfare as an institution, development of the social work profession, practice methods, professional values and code of ethics, private and public funding sources, bureaucratic structures, community resources, and welfare myths and realities. Also includes social problems and special populations, cultural awareness and competency, use of technology, professional organizations, and public policy and future trends.

Offered: Fall, Spring, Summer.

SSE 111 Group Work

3 cr. hrs. 3 periods (3 lec.)

Examination of group dynamics using experiential learning. Includes goals, communication patterns, leadership, power and influence, decision-making, conflict resolution, controversy, creativity, problem solving, diversity, and personal growth within groups. Also includes application of concepts through observation, group exercises, and case studies.

Offered: Fall, Spring.

SSE 121 Study of Substance Use Disorders

3 cr. hrs. 3 periods (3 lec.)

Introduction to the study of substance use disorders in the United States. Includes history of substance use and historical development of prohibitions, classification and effects of substances, diagnosis and assessment of substance use disorders, theories of addiction and treatment strategies, and funding sources for treatment programs. Also includes cross-cultural perspectives; co-occurring disorders and integrated treatment modalities; treatment interventions; special populations; ethical issues; and education, resources, and prevention.

Offered: Fall, Spring.

SSE 123 Prevention of Substance Use Disorders

3 cr. hrs. 3 periods (3 lec.)

Comprehensive review of approaches to prevention of substance use disorders. Includes principles of prevention; risk factors, protective factors, resilience; and systems-oriented and client-oriented prevention strategies. Also includes controversial prevention issues, client-oriented prevention programs and funding, special populations, prevention in the workplace, and program evaluation.

Offered: Fall, Spring.

SSE 128 Introduction to Behavioral Health

3 cr. hrs. 3 periods (3 lec.)

Introduction to the behavioral health care system in southern Arizona. Includes providing excellent service, ethics and boundaries, engagement and clinical documentation, introduction to service planning and covered services, management of complex needs, and strength-based behavioral health general assessment training. Also includes demographic data set, court-ordered treatment, covered services, behavioral health enhanced assessment training, and clinical training standardized self-study modules.

Offered: Fall, Spring, Summer.

SSE 140 Domestic Violence: Causes and Cures

3 cr. hrs. 3 periods (3 lec.)

Overview of historical and contemporary causes of domestic violence. Includes laws and law enforcement, society, populations victimized, and diagnosis and treatment techniques. Also includes community resources, treatment centers, and support groups, cultural awareness, special populations at risk, and theories explaining the prevalence of domestic violence.

Offered: Spring.

SSE 146 Child Abuse Intervention and Protection

3 cr. hrs. 3 periods (3 lec.)

Overview of the scope and nature of child abuse and neglect. Includes child abuse from historical and cultural perspectives, context of the family and child development, analyzing dynamics, identifying symptoms and assessing risks, short-term and long-term effects of child abuse, intervention and the roles of professionals, and prevention management of child abuse cases.

Offered: Fall.

SSE 154 Nutrition

3 cr. hrs. 3 periods (3 lec.)

Examination of nutrients and their use by the body for growth and development. Includes maintenance of health through proper diet.

Information: Same as FSN 154.

Offered: Fall, Spring, Summer.

SSE 160 Introduction to Youth Services

3 cr. hrs. 3 periods (3 lec.)

Introduction to the field of youth services as offered through voluntary youth organizations, social service and child welfare agencies, juvenile detention and correctional agencies and community health care agencies. Includes youth services for children, dependent children, delinquent children, challenged and special needs youth, and practice issues and prevention in youth services.

Offered: Fall.

SSE 170 Community Health Advisor

3 cr. hrs. 3 periods (3 lec.)

Preparation of Community Health Advisors for outreach disease prevention, advocacy, education, and referral services within prescribed communities. Includes national and local history of community health work programs, overview of the health services system, communication and relationship building skills, coping with stress, personal health, building self-esteem, and dealing with feelings. Also includes presentation skills, using support materials, interacting with other agencies within the community, managing home visits, dealing with challenging situations, professional issues, and empowering and mobilizing for action.

Offered: Fall.

SSE 204 Counseling in a Multicultural Setting

3 cr. hrs. 3 periods (3 lec.)

Concepts, techniques, and skills in values, perceptions, attitudes, and behaviors emphasizing intercultural communication patterns within a counseling setting. Includes culture and counseling, profiles of Americans, profiles of special populations, differences, cultural elements in counseling, dynamic factors, common terminology, disparities in treatment, counseling, and counseling theories.

Recommendation: Completion of SSE 110 before enrolling in this course. Those students pursuing the Behavioral Health Certificate are highly recommended to complete BHS 132 before enrolling in this course.

Offered: Fall, Spring, Summer.

SSE 205 Case Report Writing

3 cr. hrs. 3 periods (3 lec.)

Introduction to the principles, concepts, techniques and necessary skills to create and maintain case report records. Includes case report writing, report content, ethical and legal issues, current trends in behavioral health case report writing, and cultural competence.

Offered: Fall, Spring.

SSE 210 Community Organization and Development

3 cr. hrs. 3 periods (3 lec.)

An examination, principles, and techniques of community organizing to effect change in America. Includes current conditions, theoretical frameworks, community change, overcoming resistance, professional practice and ethics, promoting neighborhood change, using information technology, planning for action, personal power, and people as a valuable resource. Also includes developing resources and funding, use of the media, community development, principles for effective leadership, strategies for institutional change, and government structure and legislative lobbying.

Prerequisite(s): SSE 110.

Offered: Fall, Spring.

SSE 211 Group Technique Applications

3 cr. hrs. 3 periods (3 lec.)

Application of advanced concepts in group dynamics. Includes skill development and preparation for group facilitation in the community through in-class experiential learning. Also includes community-group case studies, ethical standards, and multicultural issues.

Prerequisite(s): SSE 111.

Offered: Fall, Spring.

SSE 220 Treatment of the Substance Use Disorders

3 cr. hrs. 3 periods (3 lec.)

Principles and techniques of treating substance use disorders. Includes treatment modalities, helping, treatment plans, case studies, withdrawal, and value clarification. Also includes role playing in treatment situations, causes of substance use disorders, and integration of treatment for substance use disorders and case management skills.

Offered: Fall, Spring.

SSE 222 Political, Legal and Ethical Aspects of Substance Use

3 cr. hrs. 3 periods (3 lec.)

Overview of substance use and the law. Includes historical and legal overview, major legislation and court decisions; substances and their effects, substance classification, and the concept of addiction; nature, uses, legal status, and social and economic aspects of the major psychoactive drugs. Also includes attitudes toward substance use and the connection between substance use, crime, and gangs; implications of decriminalization or legalization of substances, international drug trafficking and its effect on U.S. policy and programs, law enforcement, and ethics and ethical practice.

Offered: Fall, Spring.

SSE 224 Substance Use Disorders Among Diverse and Special Needs Populations

3 cr. hrs. 3 periods (3 lec.)

Examination and focus on understanding racial and ethnic differences in the prevalence of substance use disorders. Includes culture and substance use disorders, ethnic and racial groups, profiles of special populations, differences, cultural elements and relationships, dynamic factors, common terminology, counseling, and counseling theories.

Offered: Fall.

SSE 242 Crisis Intervention, Theory and Techniques

3 cr. hrs. 3 periods (3 lec.)

Principles and practice of crisis intervention. Includes crisis intervention theory, skills of crisis intervention, handling specific types of crises, large-scale community crises, crises worker issues and challenges, and community response to crises.

Offered: Spring.

SSE 281 Social Service Delivery Systems

3 cr. hrs. 3 periods (3 lec.)

Study of the social service delivery system. Includes the profession of social work, social work roles, service delivery systems, special and diverse populations, and diversity issues related to service delivery.

Prerequisite(s): SSE 110.

Information: Requires 40 hours of classroom-mediated community agency contact.

Offered: Spring.

SSE 285 Foundations of Social Work Practice

3 cr. hrs. 3 periods (3 lec.)

Theoretical foundation and skill base for effective culturally competent communication and interviewing with individuals, families, small groups, and larger systems. Includes framework for multicultural understanding and social work practice, interpersonal communication in professional helping relationships, major helping and developmental theories, and personal and professional development.

Prerequisite(s): SSE 281 or concurrent enrollment.

Offered: Spring.

SSE 290 Youth Services Field Experience

4 cr. hrs. 16 periods (1 lec., 15 lab)

Supervised placement in community youth serving agencies. Includes completion of written assignments, regular supervision services with agency supervisors, assistance with resume writing, orientation to agencies in the community, and evaluation of student performance.

Prerequisite(s): SSE 160 and 285.

Recommendation: Consult instructor for alternative prerequisites.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Information: Students complete 225 clock hours of direct service at a youth serving organization during the semester.

Offered: Spring.

SSE 292 Social Services Field Experience

4 cr. hrs. 16 periods (1 lec., 15 lab)

Supervised placement in community social services agencies. Includes completion of written assignments, regular supervision service with agency supervisors, assistance with resume writing, orientation to agencies in the community, and evaluation of student performance.

Prerequisite(s): SSE 285.

Recommendation: Consult instructor for alternative prerequisites.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Information: Students complete 225 clock hours of direct service at a social service organization during the semester.

Offered: Spring.

SSE 293 Community Health and Development Field Experience

4 cr. hrs. 16 periods (1 lec., 15 lab)

Community health and development skills practiced and evaluated in community-based health, human service, education and community agencies and settings. Includes supervised placement in an appropriate social service agency or organization, supervisory services and site visits, orientation to community agencies and organizations, field experience evaluation, and classroom seminars.

Prerequisite(s): SSE 170.

Information: Students complete 225 clock hours of direct service at a community health and development organization during the semester.

Offered: Spring.

SSE 296 Independent Study in Social Services

1-3 cr. hrs. 3-9 periods (3-9 lab)

Advanced projects, research and learning in the social services. Content to be determined by conference between student and instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Sociology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

SOC 101 Introduction to Sociology

3 cr. hrs. 3 periods (3 lec.)

Introduction to the basic concepts of sociology, sociological analysis and research. Includes social structure, status, social group, social control, social stratification, social class, gender, race, sexuality, ethnicity, aging, learning and physical challenges, family, religion, education, government, health, technology, corporations, terrorism, environmental sustainability, social movements and social change, mass society, and postmodernity. Also includes globalization within and across contemporary societies and cultures.

Offered: Fall, Spring, Summer.

SOC 109 Introduction to Global Studies

3 cr. hrs. 3 periods (3 lec.)

Survey of modern globalization. Includes the study of dimensions of globalization, global organizations, global politics, cultural globalization, the global economy, global environmental independence, and global social movements and counter movements. Also includes global interactions and their current effects on the restructuring of cultural, political, and economic institutions worldwide.

Information: Same as ANT 109 and GLS 109.

Offered: May not be offered this year, check class schedule.

SOC 110 Introduction to Cities and Global Society

3 cr. hrs. 3 periods (3 lec.)

Introduction to the study of the urban environment. Includes exploring the city, city form and city culture, urban diversity, and urban and global dilemmas and possible solutions. Also includes a special emphasis on understanding cities and the impact of globalization at community, national, and international levels.

Offered: Fall.

SOC 120 Current Social Problems

3 cr. hrs. 3 periods (3 lec.)

Analysis of the causes, effects, and solutions to current social problems. Includes the causes, effects, and the complexity of solutions to current social problems in behavioral variance, inequality, social institutions, and global issues.

Recommendation: Completion of SOC 101 before enrolling in this course.

Offered: Fall, Spring, Summer.

SOC 127 Marriage and the Family

3 cr. hrs. 3 periods (3 lec.)

Introduction to the social functions of marriage and the family. Includes structures of marriages and families, relationships, marriage, and transformation of marriage.

Offered: Fall, Spring, Summer.

SOC 130 Social World of Drugs

3 cr. hrs. 3 periods (3 lec.)

Introduction to the social aspects of the use and abuse of drugs in the United States. Includes evolution of drug use, pharmacology, social and medical aspects of drugs, the business of drugs, sociological explanations of drug use and abuse, and social issues, policy, and politics.

Recommendation: Completion of SOC 101 before enrolling in this course.

Offered: Fall.

SOC 140 Sociology of Religion

3 cr. hrs. 3 periods (3 lec.)

Sociological analysis of religion as a social institutional arena. Includes functional versus substantive definitions of religion, methodological stance sociologists take toward religion as an object of study, classical and contemporary theoretical perspectives on religion, major faith traditions, secularization versus fundamentalism, globalization and religion, new religious movements, religion and key social statuses, and religious diversity and change in the U.S.

Offered: Spring.

SOC 166 Social Gerontology

3 cr. hrs. 3 periods (3 lec.)

Introduction to the social aspects of aging and the aged. Includes the concept of the life course, the demographics of a graying United States, myths and facts about aging, sociological theories on aging, historical and cross-cultural analyses of aging, age norms, family patterns in later life, retirement patterns, living environments in later life, the social meaning of death and dying, the economics of aging, the politics of aging, social services for older Americans and religion and aging.

Offered: May not be offered this year, check class schedule.

SOC 201 Race, Ethnicity, Minority Groups and Social Justice

3 cr. hrs. 3 periods (3 lec.)

Social processes involved in the construction of difference. Includes race, ethnicity, minority groups, nationality, and social justice. Also includes the analysis of social, political, cultural, religious, economic and historical formations with special reference to current global trends, social conflict, and change.

Offered: Fall, Spring, Summer.

SOC 203 Sociology of Utopia

3 cr. hrs. 3 periods (3 lec.)

Exploration of the idea of utopia and its influence on human societies throughout global history. Includes utopia and social structure, utopias before Christianity, Christian and humanist utopianism, utopian revivals and dystopias, and utopian thinking and social institutions.

Offered: May not be offered this year, check class schedule.

SOC 204 Gender Identities, Interactions and Relations

3 cr. hrs. 3 periods (3 lec.)

Examination of the social structures and processes related to gender in society. Includes sex versus gender, theoretical perspectives, politics past and present, gender and the family, love and marriage, and masculinity. Also includes gender in the workplace, in the media, religion, and medicine, and global perspectives.

Offered: Spring.

SOC 215 Human Sexuality

3 cr. hrs. 3 periods (3 lec.)

Examination of human sexual experience throughout the life cycle, viewed from sociological and psychological perspectives. Includes psychological, sociological, and cultural legacy of sexuality, biological foundations of sexuality, varieties of sexual behaviors, sexuality and the life cycle, sexual problems, and social issues.

Recommendation: Completion of one of the following before enrolling in this course: PSY 100A or 100B or 101 or SOC 101. REA 091 with a C or better (or assessment into REA 112).

Information: Same as PSY 215.

Offered: Fall, Spring, Summer.

SOC 296 Independent Study in Sociology

3 cr. hrs. 3 periods (3 lec.)

Exploration of special interest areas. Includes sociological question(s), methodological research design, implementation of viable research, data analysis using sociological theories, and presentation of findings.

Information: Activities determined by conference between student and instructor related to content of this course.

Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Solar Technologies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

SLR 101 Beginning Photovoltaic Installation

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to photovoltaic energy and photovoltaic (PV) system installation. Includes markets and applications, safety basics, electricity basics, energy efficient appliances, solar energy fundamentals, photovoltaic materials, module fundamentals, concentrators, system components, system sizing, electrical design, mechanical design, and performance analysis and troubleshooting.

Information: This course specifically provides preparation for the North American Board of Certified Energy Practitioners (NABCEP) Photovoltaic Installer Certification exam.

Offered: Fall, Spring.

SLR 102 Advanced Photovoltaic Installation

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of SLR 101. Includes advanced photovoltaic (PV) energy and system installation training. Also includes safety basics, stand-alone PV system sizing, grid-tied system sizing, National Electric Code (NEC) compliant wire sizing, grounding of PV systems, site analysis and array mounting, and PV system commissioning, troubleshooting, maintenance and performance evaluation.

Information: This course specifically provides preparation for the North American Board of Certified Energy Practitioners (NABCEP) Photovoltaic Installer Advanced Certification exam.

Offered: Spring.

SLR 130 Solar Hot Water Systems

4 cr. hrs. 6 periods (3 lec., 3 lab)

Introduction to solar thermal systems. Includes the types, maintenance, performance, controls, site selection considerations, performance estimating and testing. Also includes related mathematics, copper piping practices, soldering and brazing, basic heat transfer, and basic principles of hydronics.

Prerequisite(s): BCT 105 and 107.

Information: BCT 100, 112, and 115 substitute for BCT 105. BCT 111, 113, and 114 substitute for BCT 107.

Offered: May not be offered this year, check class schedule.

Spanish

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

SPA 085 Introductory Spanish

4 cr. hrs. 4 periods (4 lec.)

Beginning Spanish for students with no previous formal study of the language. Includes correct pronunciation, basic grammar and conversation, and common communications such as informal greetings and numbers.

Information: This course is not for transfer, but helps prepare students for success in transferable courses.

Offered: Fall.

SPA 101 Elementary Spanish I

4 cr. hrs. 4 periods (4 lec.)

Introduction to Spanish. Includes basic listening, reading, and writing skills and cultural and geographic awareness.

Offered: Fall, Spring, Summer.

SPA 101HC Elementary Spanish I for Healthcare

4 cr. hrs. 4 periods (4 lec.)

Introduction to Spanish. Includes basic speaking, listening, reading and writing skills and cultural and geographical awareness. Also includes vocabulary in a healthcare context.

Information: Same as SPA 101. Emphasis on healthcare-related vocabulary.

Offered: May not be offered this year, check class schedule.

SPA 101HN Elementary Spanish I: Honors

4 cr. hrs. 4 periods (4 lec.)

Introduction to Spanish. Includes basic speaking, listening, reading and writing and cultural and geographical awareness.

*Information: Must qualify for Honors program. SPA 101HN will fulfill any SPA 101 requirement. Faculty or Advisor approval may be required before enrolling in this course.**Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; "publishable quality", peer reviewed paper or project in format appropriate for this discipline: presentation of research, in class or to a wider audience.*

Offered: May not be offered this year, check class schedule.

SPA 101LE Elementary Spanish I for Law Enforcement

4 cr. hrs. 4 periods (4 lec.)

Introduction to Spanish. Includes basic speaking, listening, reading, and writing skills and cultural and geographical awareness. Also includes vocabulary in a law enforcement context.

Information: Same as SPA 101. Emphasis on law-enforcement-related vocabulary.

Offered: May not be offered this year, check class schedule.

SPA 102 Elementary Spanish II

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 101. Includes further development of oral and written forms, additional grammatical structures, interpersonal transactions, and geographical and cultural differences. Also includes an emphasis on balancing more complex structures with active communication.

*Prerequisite(s): SPA 101.**Information: Prerequisite(s) may be waived with one year of high school Spanish. See an instructor, advisor, or counselor.*

Offered: Fall, Spring, Summer.

SPA 102HC Elementary Spanish II for Healthcare

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 101HC. Includes further development of oral and written forms, additional grammatical structures, interpersonal transactions, and geographical and cultural differences. Also includes an emphasis on balancing more complex structures with active communication and vocabulary in a healthcare context.

*Prerequisite(s): SPA 101.**Information: Same as SPA 102. Emphasis on healthcare-related vocabulary.**Information: Prerequisite(s) may be waived with one year of high school Spanish. See an instructor, advisor, or counselor.*

Offered: May not be offered this year, check class schedule.

SPA 102HN Elementary Spanish II: Honors

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 101. Includes further development of oral and written forms, additional grammatical structures, interpersonal transactions, and geographical and cultural differences. Also includes an emphasis on balancing more complex structures with active communication. Also includes additional Honors content.

*Prerequisite(s): SPA 101.**Information: Must qualify for Honors program. SPA 102HN will fulfill any SPA 102 requirement. Prerequisites may be waived with one year of high school Spanish. See an instructor, advisor, or counselor.**Information: May include the following Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; "publishable quality", peer reviewed paper or project in format appropriate for this discipline: presentation of research, in class or to a wider audience.*

Offered: May not be offered this year, check class schedule.

SPA 102LE Elementary Spanish II for Law Enforcement

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 101LE. Includes further development of oral and written forms, additional grammatical structures, interpersonal transactions, and geographical and cultural differences. Also includes an emphasis on balancing more complex structures with active communication and vocabulary in a law enforcement context.

Prerequisite(s): SPA 101.

Information: Same as SPA 102. Emphasis on law-enforcement-related vocabulary.

Information: Prerequisite(s) may be waived with one year of high school Spanish. See an instructor, advisor, or counselor.

Offered: May not be offered this year, check class schedule.

SPA 103 Beginning Spanish for Heritage and Bilingual Learners

4 cr. hrs. 4 periods (4 lec.)

Spanish for heritage and bilingual learners. Includes basic oral and written forms for heritage and bilingual learners, grammatical structures, cultural and stylistic elements, interpersonal transactions, and geographical and cultural awareness. Also includes an awareness of diversity of Spanish-speaking cultures.

Information: Ability to speak basic Spanish is required.

Offered: Fall, Spring.

SPA 106 Beginning Conversation Spanish

3 cr. hrs. 3 periods (3 lec.)

Introduction to conversational Spanish. Includes basic oral and written forms, grammatical structures, interpersonal transactions, and cultural perspectives. Also includes reading, writing, speaking, and listening skills with primary emphasis on oral communication.

Offered: May not be offered this year, check class schedule.

SPA 107 Intermediate Conversation Spanish

3 cr. hrs. 3 periods (3 lec.)

Continuation of SPA 106. Includes oral and written communication, additional grammatical structures, additional interpersonal transactions, and additional cultural perspectives. Also includes additional reading, writing, speaking, and listening skills with primary emphasis on oral communication.

Prerequisite(s): SPA 106.

Offered: May not be offered this year, check class schedule.

SPA 201 Intermediate Spanish I

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 102. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and using a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking and listening.

Prerequisite(s): SPA 102.

Offered: Fall, Spring.

SPA 201HN Intermediate Spanish I: Honors

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 102. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and use of a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking and listening. Also includes additional Honors Content.

Prerequisite(s): SPA 102.

Information: Must qualify for Honors program. SPA 201HN will fulfill any SPA 201 requirement. Faculty or Advisor approval may be required before enrolling in this course.

Information: Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; "publishable quality"; peer reviewed paper or project in format appropriate for this discipline: presentation of research, in class or to a wider audience.

Offered: May not be offered this year, check class schedule.

SPA 202 Intermediate Spanish II

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 201. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and use of a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking, and listening. Also includes reading selections from authentic media, advanced conversation and discussions, and compositions using intermediate grammar structures.

Prerequisite(s): SPA 201.

Offered: Fall, Spring.

SPA 202HN Intermediate Spanish II: Honors

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 201. Includes intermediate grammar structures and vocabulary contexts in oral and written forms and use of a variety of materials in the target language and cultures to promote proficiency in reading, writing, speaking, and listening. Also includes reading selections from authentic media, advanced conversation and discussions, and compositions using intermediate grammar structures. Also includes additional Honors content.

Prerequisite(s): SPA 201

Information: Must qualify for Honors program. SPA 202HN will fulfill any SPA 202 requirement. Faculty or Advisor approval may be required before enrolling in this course.

Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; "publishable quality", peer reviewed paper or project in format appropriate for this discipline: presentation or research, in class or to a wider audience.

Offered: May not be offered this year, check class schedule.

SPA 203 Writing and Oral Skills for Heritage and Bilingual Learners

4 cr. hrs. 4 periods (4 lec.)

Continuation of SPA 103. Includes further development of oral and written forms for heritage and bilingual learners, additional grammatical structures, cultural and stylistic elements, interpersonal transactions, and geographical and cultural differences. Also includes a continued awareness of the diversity of Spanish.

Prerequisite(s): SPA 103.

Information: Prerequisites may be waived with ability to speak Spanish.

Offered: Fall, Spring.

SPA 251 Intermediate Spanish III

3 cr. hrs. 3 periods (3 lec.)

Tools for thinking critically and analytically in Spanish. Includes writing proficiency, reading proficiency, and control of language through lexical and grammatical precision.

Prerequisite(s): SPA 202.

Offered: May not be offered this year, check class schedule.

SPA 253 Intermediate Spanish for Heritage and Bilingual Learners

4 cr. hrs. 4 periods (4 lec.)

Intensive writing and speaking in Spanish for heritage and bilingual learners. Includes intermediate oral communication, complex reading communication, intermediate written communication, and themes in popular and traditional cultures.

Prerequisite(s): SPA 203.

Information: Prerequisites may be waived with ability to speak, read, and write Spanish.

Offered: May not be offered this year, check class schedule.

SPA 254 Intermediate Grammar and Writing for Spanish Heritage and Bilingual Learners

3 cr. hrs. 3 periods (3 lec.)

Continuation of SPA 253. Includes intensive grammar and writing for heritage and bilingual learners within a dynamic cultural context. Includes complex intermediate oral communication, intermediate grammar and writing communication, exploration of diversity of culture and customs, and themes in literature.

Prerequisite(s): SPA 253.

Information: Prerequisites may be waived with ability to speak, read, and write Spanish.

Offered: May not be offered this year, check class schedule.

SPA 296 Independent Study in Spanish

1-4 cr. hrs. 1-4 periods (1-4 lec.)

Independent Spanish readings or other projects under the supervision of an instructor.

Information: Consent of instructor is required before enrolling in this course.

Information: May be taken two times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Student Success

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

STU 100 College Study Skills

1 cr. hrs. 1 periods (1 lec.)

Skills and techniques required for being an efficient student. Includes study techniques, memory and concentration, college resources, goal setting, time management, attentive listening, organization of lecture/text material, note taking systems, test taking strategies, and test anxiety.

Offered: Fall, Spring, Summer.

STU 102 Personal Finance in College Decision Making

1 cr. hrs. 1 periods (1 lec.)

Basic elements of personal and family finances. Includes managing personal finances, funding resources and financial obligations, strategies for success, setting a career direction and taking control of the future, and transition from college into the mainstream.

Offered: Fall, Spring.

STU 105 Math Success Skills

1 cr. hrs. 1 periods (1 lec.)

Math study and test-taking skills and overcoming math anxiety. Includes effective math study skills, reading a math text, problem solving, current research on math anxiety, and overcoming math anxiety.

Offered: Fall, Spring.

STU 106 Making Career Choices: Interests and Values

1 cr. hrs. 1 periods (1 lec.)

Development of skills and knowledge necessary to make a career selection. Includes career exploration and self-assessments, choosing an occupational area or specific career, and researching potential career opportunities. Also includes programs of study and degree requirements.

Information: STU 106 is a one credit hour version of STU 109 that concentrates on self-assessment inventories, career research, and degree identification.

STU 107 University Transfer Preparation

1 cr. hrs. 1 periods (1 lec.)

Preparation of a plan for a successful transition to a college or university. Includes clarification of transfer degree/major based on career and academic interests; introduction to and awareness of transfer resources, financial resources, and college funding; development of a personal education plan for transfer; and general transition planning.

Prerequisite(s): REA 081

Recommendation: Concurrent enrollment in or completion of REA 091 and WRT 090. Completion of this course before completing 30 college credits.

Offered: Fall, Spring.

STU 109 Making Career Choices

2 cr. hrs. 2 periods (2 lec.)

Development of skills and knowledge necessary to make a career selection. Includes career exploration and self-assessments, choosing an occupational area or specific career, and researching potential career opportunities. Also includes degrees and programs of study, goal setting, and job seeking skills.

Information: STU 109 is a 2 credit hour version of STU 106 that expands the career exploration process to include skills and strategies necessary to secure employment in the future.

Offered: Fall, Spring.

STU 112 Strategies for Taking Control of Your Future

.25 cr. hrs. .25 periods (.25 lec.)

Development of an educational plan based on career expectations. Includes strategies for success, setting a career direction, and taking control of the future.

Information: Students cannot receive credit for both STU102 and STU112.

Offered: May not be offered this year, check class schedule.

STU 121 Adult College Re-entry Skills

3 cr. hrs. 3 periods (3 lec.)

Designed for adult re-entry to assist in making a smooth transition into college. Includes: career exploration and employability skills; college success skills; college and community resources; and personal, academic and financial goals. Also includes confidence building, gender awareness, and communication in the workplace.

Offered: May not be offered this year, check class schedule.

STU 135 Stress Management

1 cr. hrs. 1 periods (1 lec.)

Principles and techniques for managing stress and living a healthier life style. Includes factors that impact stress in daily life and the positive influence of wellness practices, such as observing healthy nutrition habits, maintaining physical fitness, and managing stressful situations.

Offered: May not be offered this year, check class schedule.

STU 150 Becoming a Master Student

3 cr. hrs. 3 periods (3 lec.)

Enhance academic and personal skills to maximize learning and success at the college level. Includes critical thinking skills, learning styles, college and/or career goals, study skills and personal styles. Also includes examination of human diversity, values, perspectives, as they relate to student's success.

Recommendation: Completion of REA 091 and WRT 090 before enrolling in this course or concurrent enrollment.

Offered: Fall, Spring.

STU 200 Becoming a Critical Thinker

3 cr. hrs. 3 periods (3 lec.)

Development and application of critical thinking strategies. Includes fundamentals of critical thinking and application of thinking skills to everyday issues. Also includes bias, perception, and belief; critical questioning; reporting, inferring and judging; argumentation; language and thought; creativity and critical thinking; and critical thinking about the media.

Recommendation: Completion of REA 091 before enrolling in this course or concurrent enrollment.

Offered: Fall, Spring.

STU 210 Transfer Strategies

2 cr. hrs. 2 periods (2 lec.)

Transitioning to a college or university. Includes planning for a successful transfer experience; community college and university resources; and transition procedures, policies, and activities.

Recommendation: Consult with a counselor or advisor prior to enrolling in this course. Completion of STU 106,107 or 109 is strongly recommended.

Offered: Fall, Spring.

STU 230 Dynamics of Leadership

3 cr. hrs. 3 periods (3 lec.)

Overview of the theoretical and applied foundations of leadership. The theoretical component includes the historical and contemporary theories and models of leadership, effective followership, multiculturalism, and ethics. The applied component includes the importance and use of vision and mission, inclusive leadership practices, responding to change, developing a personal philosophy of leadership, and creating a personal profile of strengths and assets. Communication and facilitation skills will be practiced with the completion of a leadership project.

Information: Same as MGT 230.

Offered: Fall, Spring.

Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

TEC 100 Introduction and Overview of Electronics

3 cr. hrs. 4 periods (2 lec., 2 lab)

Examination of the principles and techniques of basic electrical concepts. Includes fundamentals of electricity, current, voltage, resistance, Ohm's Law, electrical measurements, meters, power, DC circuits, magnetism, inductance, capacitance, alternating current, transformers, and AC circuits. Also includes the language of electronics and the mathematical foundations relative to the electronics industry.

Offered: May not be offered this year, check class schedule.

TEC 101 Physics for Technology

3 cr. hrs. 3 periods (3 lec.)

Fundamentals of applied physics for technology. Includes matter, motion, forces, work and energy, fluids, temperature and heat, wave motion, electricity, direct current electricity, magnetism, alternating current, electronic devices, and light.

Prerequisite(s): MAT 122 or TEC 111.

Offered: May not be offered this year, check class schedule.

TEC 103 Light and Optical Systems

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction to light and optical systems used in photolithographic processes and equipment in semiconductor manufacturing. Includes the electromagnetic spectrum, basic principles of light, light sources, interaction between matter and light, optics terminology, and standing waves. Also includes filters, microscopes, photolithography, and optical fibers.

Prerequisite(s): TEC 113.

Offered: May not be offered this year, check class schedule.

TEC 105 Electronic Assembly Tools

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduces hand tools and measuring devices used in electronics and electromechanical assemblies. Includes basic and special assembly tools; fastener installation and removal tools; precision measuring tools; fabrication tools; and torque and optical measuring instruments. Also includes an emphasis on required safety procedures and practices and the use of selected tools, measuring devices, and procedures.

Offered: May not be offered this year, check class schedule.

TEC 111 Applied Math I

2 cr. hrs. 2 periods (2 lec.)

Introduction to numerical operations in measurement and systems of units. Includes geometric figures, waveshapes, scale drawings, collection of data, display of data, and data calculations. Also includes basic algebraic and numeric expressions, scientific notation, and instruction on using the handheld calculator.

Offered: May not be offered this year, check class schedule.

TEC 112 Applied Math II

2 cr. hrs. 2 periods (2 lec.)

Continuation of TEC 111. Includes graphing, linear equations, functional notation, quadratic equations, and solving systems of linear equations. Also includes many examples and exercises pertaining to electrical, magnetic, fluidic, thermal, and mechanical systems; and layout and analysis of resistor, diode, and transistor circuits using a circuit simulation program.

Prerequisite(s): TEC 111.

Offered: May not be offered this year, check class schedule.

TEC 113 Problem Solving for Electronics and Optics

3 cr. hrs. 3 periods (3 lec.)

Problem solving for electronics and optics. Includes exponents and radicals, logarithmic and exponential functions, application of equations, resistive-capacitive and resistive-inductive transient behavior, trigonometric considerations, circular functions, vectors and phasors, mathematics of phasors, alternative current and circuits, and sinusoidal alternating current. Also includes coordinate systems, the conic sections, trigonometric identities, complex exponentials, Euler's formula, and examples in optics.

Prerequisite(s): MAT 097 or TEC 112 or required score on the mathematics assessment test.

Offered: May not be offered this year, check class schedule.

TEC 117 Optical Assembly Techniques

3 cr. hrs. 4 periods (2 lec., 2 lab)

Fundamental procedures used during the assembly of optical equipment. Includes vibration isolation, epoxy and curing, mounting optics, alignment aids, assembly and disassembly techniques, fasteners, and materials. Also includes thermal considerations, vibration mounting of components, baffles, hermetic sealing, and metal finishing.

Recommendation: Completion of TEC 116 before enrolling in this course.

Offered: May not be offered this year, check class schedule.

TEC 121 Basic Electric and Magnetic Properties

3 cr. hrs. 3 periods (3 lec.)

Introduction to AC, DC, and magnetic circuit theory. Includes passive devices, terminology, basic laws, network calculations, electrical measurements, instruments, and units. Also includes use of hand tools, safety, use of schematic and block diagrams, troubleshooting, and electronic circuit applications.

Prerequisite(s): TEC 100 and 111.

Corequisite(s): TEC 121LB

Offered: Fall.

TEC 121LB Basic Electric and Magnetic Properties Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 121.

Prerequisite(s): TEC 100 and 111.

Corequisite(s): TEC 121

Offered: Fall.

TEC 122 Applied Semiconductor Devices

3 cr. hrs. 3 periods (3 lec.)

Basic semiconductor theory and applications. Includes measurement, component selection, effects of the environment on components, component protection, and applications. Also includes diodes, transistors, integrated circuits with operational amplifiers, and regulated power supplies.

Prerequisite(s): TEC 113 and 121.

Corequisite(s): TEC 122LB

Offered: May not be offered this year, check class schedule.

TEC 122LB Applied Semiconductor Devices Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 122.

Prerequisite(s): TEC 113 and 121.

Corequisite(s): TEC 122

Offered: May not be offered this year, check class schedule.

TEC 123 Digital Circuits and Computers

3 cr. hrs. 3 periods (3 lec.)

Introduction to the theory, operation, and application of digital components used in combinational and sequential logic. Includes number systems; Boolean algebra; gates and invertors; digital measurements and test equipment; memory; error detection; convertors; programmable logic arrays; microprocessor basics; and technical information.

Corequisite(s): TEC 123LB

Offered: May not be offered this year, check class schedule.

TEC 123LB Digital Circuits and Computers Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 123.

Corequisite(s): TEC 123

Offered: May not be offered this year, check class schedule.

TEC 125 AC Networks with Phasors

3 cr. hrs. 3 periods (3 lec.)

Applications of trigonometry and the algebra of complex numbers to AC circuits safety, troubleshooting, analysis, measurement, and design. Includes phasors, transfer functions, three phase power, filters, concepts of Fourier analysis, impedance matching, RLC circuits, waveshaping, and transmission lines at high AC frequencies.

Prerequisite(s): TEC 113 and 121.

Corequisite(s): TEC 125LB

Offered: May not be offered this year, check class schedule.

TEC 125LB AC Networks with Phasors Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 125.

Corequisite(s): TEC 125

Offered: May not be offered this year, check class schedule.

TEC 126 Electronics Construction and Assembly

3 cr. hrs. 4 periods (2 lec., 2 lab)

Basic skills in construction and assembly of electronic equipment. Includes soldering through-hole and surface mount components; reading and interpreting internal electronic wiring schematics; and mechanical assembly diagrams. Also includes performing printed circuit board construction; wiring and cabling construction; terminations; and chassis construction.

Prerequisite(s): TEC 100, 105, and 111.

Offered: May not be offered this year, check class schedule.

TEC 127 Printed Circuit Board Solder Assembly

3 cr. hrs. 4 periods (2 lec., 2 lab)

Advanced skills for assembly of electronic equipment. Includes wire and terminals connections; through-hole and surface mount soldering of components; printed circuit board requirements; coatings and encapsulations; and rework, repair and inspection methodology. Also included IPC standards to prepare student for IPC J-STD-001 Certification by exam.

Prerequisite(s): TEC 100, 105 and 111.

Offered: Fall.

TEC 128 Electronic Measurements

2 cr. hrs. 2 periods (2 lec.)

Techniques to perform measurements on passive and active component circuits. Includes measurement standards; types of meters; parameters of passive and active devices; harmonic and inter-modulation distortion; radio frequency modulation; operation and measurements of the oscilloscope; and the distortion analyzer.

Prerequisite(s): TEC 122 and 125.

Corequisite(s): TEC 128LB

Offered: May not be offered this year, check class schedule.

TEC 128LB Electronic Measurements Lab

1 cr. hrs. 2 periods (2 lab)

This is the Lab portion of TEC 128.

Corequisite(s): TEC 128

Offered: May not be offered this year, check class schedule.

TEC 130 Computer Assembly and Testing

3 cr. hrs. 3 periods (3 lec.)

Computer system assembly, set-up, and start-up. Includes computer systems overview, safety precautions, support equipment, operating systems, system assembly, system start-up, troubleshooting, and peripheral connections.

Corequisite(s): TEC 130LB

Offered: Fall.

TEC 130LB Computer Assembly and Testing Lab

1 cr. hrs. 2 periods (2 lab)

This is the Lab portion of TEC 130.

Corequisite(s): TEC 130

Offered: Fall.

TEC 132 Computer Systems Servicing

3 cr. hrs. 3 periods (3 lec.)

Advanced computers servicing and peripherals installation. Includes an introduction to computer servicing, laser and ink-jet printers, troubleshooting of printers, safety and troubleshooting of monitors, floppy disk drives, hard disk drives/optical drives, operating systems, application programs, and network basics.

Prerequisite(s): TEC 130.

Corequisite(s): TEC 132LB

Offered: May not be offered this year, check class schedule.

TEC 132LB Computer Systems Servicing Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 132.

Corequisite(s): TEC 132

Offered: May not be offered this year, check class schedule.

TEC 160 Microcomputers and Programming Techniques

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to microcomputer operation. Includes overview and history of the microcomputer, applications, terminology and specifications, software/programming, operating systems, disk operations, programming in BASIC, and introduction to Assembly Language.

Prerequisite(s): MAT 092 or TEC 111.

Information: Prerequisite may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

TEC 221 Linear Devices

3 cr. hrs. 5 periods (2 lec., 3 lab)

Linear devices in electronic systems. Includes overview of linear integrated circuits, the ideal operational amplifier, real operational amplifier parameters, selected linear and non-linear applications and transfer functions, phase lock loops, voltage reference circuits, and voltage regulators. Also includes optoelectronic devices, power supply bypassing, convertors, other selected linear devices, and testing and troubleshooting.

Prerequisite(s): TEC 122 and 125.

Offered: May not be offered this year, check class schedule.

TEC 222 Electromechanical Devices and Systems

3 cr. hrs. 3 periods (3 lec.)

Prime movers encompassing DC motors, AC motors, synchros, stepper motors, and fluid motors. Includes control systems and the utilization of electronic devices in electromechanical control. Also includes mechanical components of electromechanical systems, electronic components used in motor control systems, sensors, transducers, relays, and solenoids.

Prerequisite(s): TEC 221.

Corequisite(s): TEC 222LB

Offered: May not be offered this year, check class schedule.

TEC 222LB Electromechanical Devices and Systems Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 222.

Corequisite(s): TEC 222

Offered: May not be offered this year, check class schedule.

TEC 225 Fluid Devices and Automated Systems

2 cr. hrs. 2 periods (2 lec.)

Application and control of fluid devices using programmable logic devices. Includes microprocessors, software, ladder logic and diagrams, programmable logic controllers (PLCs), and variety of input/output devices used in the automated manufacturing and test environments. Also includes safety and basic physical principles or laws governing the operation of pneumatic and hydraulic devices.

Prerequisite(s): TEC 101, 123 and 222.

Corequisite(s): TEC 225LB

Offered: Fall.

TEC 225LB Fluid Devices and Automated Systems Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 225.

Corequisite(s): TEC 225

Offered: Fall.

TEC 228 RF and Microwave Devices

3 cr. hrs. 3 periods (3 lec.)

Introduction to electronic communication circuits and methodologies in transmitters and receivers. Includes history and trends in communications technology, the electromagnetic spectrum, resonant circuits, coupling, lumped filters, behavior of devices, amplifiers, receivers, transmitters, and signal sources. Also includes properties, applications, measurements, and specifications of electronic communications components, systems at RF and microwave frequencies, overview of RF components, waveguides, and antennas.

Prerequisite(s): TEC 221.

Corequisite(s): TEC 228LB

Offered: May not be offered this year, check class schedule.

TEC 228LB RF and Microwave Devices Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 228.

Corequisite(s): TEC 228

Offered: May not be offered this year, check class schedule.

TEC 230 Peer-to-Peer Networking and Network Cabling Fundamentals

3 cr. hrs. 3 periods (3 lec.)

Introduction to basic networking concepts and cabling standards. Includes the Open System Interconnection (OSI) model of networking, types of networking, multi-user vs. single-user programs, network security, type of connections, and type of cabling.

Prerequisite(s): TEC 132/132LB.

Corequisite(s): TEC 230LB

Information: Prerequisite may be waived with consent of instructor.

Offered: May not be offered this year, check class schedule.

TEC 230LB Peer-To-Peer Networking and Network Cabling Fundamentals Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 230.

Corequisite(s): TEC 230

Offered: May not be offered this year, check class schedule.

TEC 250 Digital Devices

3 cr. hrs. 3 periods (3 lec.)

Digital integrated circuits, primarily TTL. Includes power requirements, propagation delay, input and output electrical characteristics, counters, latches, multiplexors, decoders, flip-flops and other digital devices. Also includes digital circuit troubleshooting.

Prerequisite(s): TEC 122 and 123.

Corequisite(s): TEC 250LB

Offered: May not be offered this year, check class schedule.

TEC 250LB Digital Devices Lab

1 cr. hrs. 3 periods (3 lab)

This is the Lab portion of TEC 250.

Corequisite(s): TEC 250

Offered: May not be offered this year, check class schedule.

TEC 251 Analog Circuits

3 cr. hrs. 3 periods (3 lec.)

Advanced analog circuits which includes subtractors, differential summing amplifiers, instrumentation amplifiers, I-to-V converters, V-to-I converters, integrators, differentiators, active filters, oscillators, comparators, voltage limiters, window detectors, V-to-F converters, F-to-V converters, clippers, clampers, universal active filters, switched capacitor filters, 555 timer applications, phase-locked loops, power amplifiers, and voltage regulators.

Prerequisite(s): TEC 221

Corequisite(s): TEC 251LB

Offered: May not be offered this year, check class schedule.

TEC 251LB Analog Circuits Lab

1 cr. hrs. 3 periods (3 lab)

This is the lab portion of TEC 251. The student will do a capstone project in analog circuits.

Prerequisite(s): TEC 221

Corequisite(s): TEC 251

Offered: May not be offered this year, check class schedule.

TEC 286 Fiber Optics Installation and Testing

3 cr. hrs. 4 periods (2 lec., 2 lab)

Installation and use of optical fibers and related equipment in the optical industry. Includes optics theory, fiber types, cable assembly and installation, testing of cables, special equipment, and survey of applications.

Prerequisite(s): TEC 103.

Offered: May not be offered this year, check class schedule.

TEC 287 Laser Fundamentals

3 cr. hrs. 4 periods (2 lec., 2 lab)

Fundamentals of lasers and how they are built and used in industry. Includes laser safety, properties of laser light, introduction to quantum mechanics, cavity design, effects of extra cavity feedback and stability, laser types and applications, cooling, and assembly and testing techniques.

Prerequisite(s): TEC 103.

Offered: May not be offered this year, check class schedule.

TEC 288 Optical Testing

4 cr. hrs. 6 periods (2 lec., 4 lab)

Common techniques and equipment for testing of optical systems and components. Includes optical testing theory, measurement of paraxial parameters, interferometers, non-interferometric tests, and surface profiling.

Prerequisite(s): TEC 103.

Offered: May not be offered this year, check class schedule.

Theater

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

THE 104 Voice and Movement for the Actor

3 cr. hrs. 4 periods (2 lec., 2 lab)

Principles and practice of voice and movement skills for the actor. Includes phonetics, physical isolation and awareness exercises, development and practice of stage dialects, and physicalization of character.

Information: May be taken five times for a maximum of fifteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

THE 105 Theater Appreciation

3 cr. hrs. 3 periods (3 lec.)

An exploration of the theory and practice of the discipline of theatre art. Includes setting the stage for understanding and appreciating theatre arts, the artists, and production of the play.

Prerequisite(s): WRT 090 or 101 or 102.

Information: Students are expected to attend and critique a minimum of one theatrical production. Students may, at the discretion of the instructor, receive additional credit for participation in a PCC theatre production when this participation is not part of the student's requirements for another class.

Offered: Fall, Spring, Summer.

THE 110 Movement and Dance for Actors

2 cr. hrs. 3 periods (1 lec., 2 lab)

Physical dynamics of actor training. Includes relaxation and warm-up techniques, vocabulary for movement, use of movement in developing acting skills, and improvisation for scenes and text analysis. Also includes execution of basic dance and movement, history of dance and movement for musical theater, and exercises.

Offered: Fall, Spring.

THE 111 Stagecraft

3 cr. hrs. 3 periods (3 lec.)

Principles and the practical application to the operation and techniques of various types of stages and stage scenery. Includes theater organization, geography, shop safety, tools and hardware applications, historic overview, construction design, three-dimensional scenery, and properties research. Also includes acquisition, maintenance, costume design, stage rigging systems, stage lighting, paint, materials handling, measuring, construction, assembly, finishing, rigging, and painting techniques.

Corequisite(s): THE 113

Offered: Fall, Spring.

THE 113 Stagecraft Crew

1 cr. hrs. 3 periods (3 lab)

Preparing, organizing, setting up, running, and shifting of theatrical sets, properties, and costumes for approved theatrical productions. Includes scenic cost estimates and budget, construction, planning and execution, production deadlines, property acquisition, and props construction. Also includes painting and finishing, stage lighting, scenery shifting; and property organization, distribution, and security.

Corequisite(s): THE 111

Offered: Fall, Spring.

THE 118 Basic Theater Graphics

3 cr. hrs. 3 periods (3 lec.)

Principles and practice of graphic skills necessary in the planning of theatrical productions. Includes techniques of pencil sketching, study of theatrical drafting conventions, techniques of mechanical drawing, study of mechanical perspective, digital color rendering techniques, study of color theories, and study of computer design applications for theatrical drafting.

Offered: May not be offered this year, check class schedule.

THE 125 Theater Production

2 cr. hrs. 6 periods (6 lab)

The practical application of exploratory learning within an ensemble setting. Includes the relating of ideas and possibilities to practical methods, skills and structure of Theatrical Production.

Information: May be taken four times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor required before enrolling in this course.

Offered: Fall, Spring.

THE 140 History of Theater to the 18th Century

3 cr. hrs. 3 periods (3 lec.)

Survey of theater, drama and audiences from their origins to the late 18th century. Includes an examination of theatrical architecture, scenic/costume design, acting styles, tragic/comic theories, audience, and literature.

Offered: Fall.

THE 148 Costume Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Introduction to basic design techniques for theater costumes. Includes identifying and applying elements, sketching and coloring, paper fabrication of costume design, script and character analysis, application of historical research, and production scheduling and budget.

Information: Same as FDC 148. May be taken two times for a maximum of six credit hours.

Offered: May not be offered this year, check class schedule.

THE 149 Introduction to Acting I

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to performance techniques and the development of physical skills for effective performance. Includes theatrical codes of behavior, exercise and structured improvisations, control of emotions and body, verbal and non-verbal intentions, emotional recall techniques and exercises, concentration and centering exercises, and physical investment exercises. Also includes physical projection of emotional states, imagery, auditioning, critiques of two productions, maintaining spontaneity, critiques of two productions, maintaining spontaneity, character analysis, playing a character, and monologues and scenes.

Offered: Fall, Spring.

THE 151 Introduction to Acting II

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of THE 149. Includes advanced theatre game and improvisations, introduction to status and its application, rehearsal conferences, scene presentations, character creation, and language plays.

Prerequisite(s): THE 149.

Offered: Spring.

THE 210 Screen Acting

2 cr. hrs. 3 periods (1 lec., 2 lab)

Introduction to film and television acting techniques. Includes special technical aspects of acting before a camera, performance preparation, and conduct of performance.

Offered: Fall, Spring.

THE 220 Stage Lighting

3 cr. hrs. 3 periods (3 lec.)

Principles of stage lighting design and practice. Includes historical context, electricity and lamps, fixtures, dimming equipment, control equipment, color media use and handling, design techniques, special effects and set up, and safety procedures. Also includes care, maintenance, proper use of lighting equipment, organization of lighting work, and operation.

Corequisite(s): THE 222

Offered: Fall.

THE 222 Stage Lighting Crew

1 cr. hrs. 3 periods (3 lab)

Organizing, setting up and operating of stage lighting for approved theatrical productions. Includes analysis of designer information, cost estimates and budgeting, planning and execution of operations, and control board techniques for rehearsals and performances.

Corequisite(s): THE 220

Offered: Fall.

THE 223 Scene Design

3 cr. hrs. 5 periods (2 lec., 3 lab)

Principles of scene design for various types of stage and models of productions. Includes historical context, theater architecture, scenic elements, design process and research, development of working drawings, perspective rendering, color use, period styles in furniture and architecture, and script analysis. Also includes cost estimates, material choices, advanced construction techniques, paint mixing and application techniques, stage furniture overview, and set dressing and finishing.

Offered: May not be offered this year, check class schedule.

THE 245 Principles of Dramatic Structure

3 cr. hrs. 3 periods (3 lec.)

Examination and analysis of the structural elements of major dramatic genres. Includes reading the play, stage directions, characters and personages, plot and diction, the actor's body, and the play within context.

Offered: Spring.

THE 250 Acting: Auditioning for Theater

3 cr. hrs. 4 periods (2 lec., 2 lab)

Theory and practice of creating sustained character portrayals through the performance of a series of monologues, chosen from a broad spectrum of both classical and contemporary theatrical literature. Includes auditioning basics and resumé fundamentals, prepared audition scenes in plays, and library and Internet research skills. Also includes contemporary monologue basics and performance, commercial auditioning, prepared audition scenes in film and television, Shakespeare monologues basics, auditioning, and performance of classical monologues..

Prerequisite(s): THE 149.

Offered: Fall.

THE 251 Acting: Shakespeare and Classical Literature

3 cr. hrs. 4 periods (2 lec., 2 lab)

Performance-oriented class focuses on the practice and theory of pre-realistic styles of acting, and focuses on Shakespeare through the use of verse and prose. Includes the performance and analysis of Farce, Restoration Comedy, Shakespeare and presentation of a Sonnet.

Prerequisite(s): THE 149.

Offered: Spring.

THE 296 Independent Studies in Theater

1-4 cr. hrs. 3-12 periods (3-12 lab)

Students work at various assigned tasks in theatrical settings under the guidance of an instructor. Includes the opportunity for the student to design his/her own project with the instructor's approval.

Information: May be taken eight times for a maximum of eight credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Consent of instructor is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

Therapeutic Massage

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

TMA 101 Introduction to Massage Therapy

3 cr. hrs. 3 periods (3 lec.)

Survey of massage therapy practice including history, overview of bodywork systems, benefits and indications of massage, and legal requirements of practice in Arizona.

Offered: Fall.

TMA 120 Professionalism and Ethics for Massage Therapists

2 cr. hrs. 2 periods (2 lec.)

Overview of the ethics and professionalism related to an effective, successful massage therapy/bodywork practice. Includes general ethical principles of practice and professional dress, conduct, boundaries and communication.

Offered: Fall.

TMA 201IN Therapeutic Massage Practices I

6 cr. hrs. 9 periods (3 lec., 6 lab)

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; and study of the human osseous and muscular structure. Also includes emphasis on normal movement patterns, origins, insertions, and functions of the muscular system.

Prerequisite(s): With a grade of C or better: BIO 160IN, TMA 101, TMA 120, WED 110, and WED 111.

Offered: Fall.

TMA 202IN Therapeutic Massage Practices II

6 cr. hrs. 9 periods (3 lec., 6 lab)

Refined application of the nine strokes of Swedish massage and contraindications to avoid. Includes application of advanced principles and techniques of trigger point therapy, muscle energy technique, stretching, hydrotherapy protocols, hot and cold applications, reflexology, and corporate massage. Also includes study of the human osseous and muscular structure with emphasis on normal movement patterns and the origin, insertion, and function of the muscular system.

Prerequisite(s): TMA 201IN with a grade C or better.

Corequisite(s): TMA 202LC.

Information: IN indicates an integrated course with lecture and lab taught simultaneously. Course is restricted to students enrolled in the program.

Offered: Spring.

TMA 202LC Therapeutic Massage Practice Clinical Lab I

1 cr. hrs. 3 periods (3 lab)

Students practice and perfect the application of fundamental Swedish Massage techniques in a supervised, supportive learning environment in an onsite clinical setting. Course reinforces massage theory and practice learned in TMA 201IN.

Corequisite(s): TMA 202IN

Offered: Spring.

TMA 203IN Therapeutic Massage Practices III

6 cr. hrs. 9 periods (3 lec., 6 lab)

Refinement and integration of technical skills, psychosocial competencies, and role identity. Exploration of techniques to assess and facilitate range of motion and functions; purpose, benefits, indications, and contraindications of therapeutic massage for specific neuro-musculoskeletal disorders/injury and special populations. Application of massage techniques with therapist's pre- and post-client evaluations of the client. Adaptation of massage techniques for special populations.

Prerequisite(s): With a grade of C or better: TMA 202IN, 210, and 215.

Corequisite(s): TMA 203LC.

Information: Course restricted to students admitted to program.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Spring.

TMA 203LC Therapeutic Massage Practice Clinical Lab II

1 cr. hrs. 3 periods (3 lab)

Students practice and perfect the application of Swedish and Deep Tissue massage techniques in a supervised, supportive learning environment in an onsite clinical setting. Course reinforces massage theory and practice learned in TMA 202IN.

Corequisite(s): TMA 203IN

Offered: Spring.

TMA 210 Fundamentals of Kinesiology

3 cr. hrs. 4 periods (2 lec., 2 lab)

A survey of the biology of movement. Includes a review of the skeletal and muscular systems, planes of movement and terms of anatomical reference; structure and function of joints; and origins, insertions and actions of muscles of the trunk and limbs. Also includes demonstration and analysis of normal and abnormal movement.

Prerequisite(s): BIO 160IN with a grade of C or better.

Offered: Fall.

TMA 214 Pregnancy Massage

1 cr. hrs. 1 periods (1 lec.)

Basic information and techniques for performing massage on pregnant clients. Includes information about body changes during pregnancy, benefits and cautions of pregnancy massage, and techniques for common discomforts during pregnancy. Also includes pre-session considerations, setting and supplies for pregnancy massage and suggestions for documentation.

Information: Must be a licensed massage therapist.

Offered: May not be offered this year, check class schedule.

TMA 215 Introduction to Pathology for Massage and Bodywork

3 cr. hrs. 3 periods (3 lec.)

Introduces the student to basic disease processes and common pathologies associated with organ systems and provides an overview of pathology pertinent to massage therapy and bodywork. Includes cautions, contraindications and adaptive measures as applied to common pathologies of organ systems. Also includes the potential interactions between bodywork and medications.

Prerequisite(s): With a grade of C or better: BIO 160IN and TMA 101.

Offered: Spring.

TMA 222 Business Management for Massage and Bodywork

2 cr. hrs. 2 periods (2 lec.)

Business management course designed specifically for massage therapy and bodywork practitioners. Includes business planning and development, financial management, marketing, and communications for these professional practices.

Recommendation: Concurrent enrollment in TMA 290LC.

Offered: Summer.

TMA 225 Massage in Health Care Settings

1.5 cr. hrs. 1.5 periods (1.5 lec.)

Introduction to concepts, conditions, and unique elements of performing therapeutic massage in health care settings. Includes overview of common hospital policies, professionalism in the medical field, communication with health care providers, and sanitation and hygiene. Also includes an overview of appropriate massage techniques to employ on patients with specific medical conditions and diseases, impact of medications on massage patients, appropriate massage modifications for effects of medications, medical terminology and abbreviations, and case studies.

Information: Elective course for Licensed Massage Therapists (equivalent to 19.5 Continuing Education Hours or 1.95 CEUs.)

Offered: May not be offered this year, check class schedule.

TMA 240 Therapeutic Massage National Certification Exam Preparation

2 cr. hrs. 2 periods (2 lec.)

Preparation for National Certification Exam in Therapeutic Massage and Bodywork. Includes anatomy, physiology, kinesiology, and pathology of body systems; Asian and non-Western bodywork approaches; massage and bodywork assessment, theory and application. Also includes professional standards, ethics, and business and legal practices; effective study approaches; and test-taking strategies.

Information: Offered for current massage students, licensed massage therapists, or bodyworkers.

Offered: May not be offered this year, check class schedule.

TMA 290LC Therapeutic Massage Clinical

3 cr. hrs. 8 periods (8 lab)

Application and integration of fundamental and advanced massage techniques for various purposes and populations. Includes Swedish, Deep Tissue, Pain and Injury Management, Stretching, Range of Motion, Asian, Energy and Hospital- Based massage therapies.

Prerequisite(s): With a grade of C or better: TMA 101, 120, 201IN, 202IN, 202LC, 203IN, 203LC, 210, 215, WED 110 and 111.

Offered: Summer.

TMA 291 Therapeutic Massage Internship

1 cr. hrs. 5 periods (5 lab)

Advancement and refinement of the knowledge, practice skills and professional abilities necessary for success in a therapeutic massage setting. Includes observing, assisting and participating in various duties and massage practices in an off-site, clinical therapeutic massage setting as appropriate and specific to the internship site. Also includes observation and application of business and professional skills.

Prerequisite(s): With a grade of C or better: TMA 101, 120, 201IN, 202IN, 202LC, 203IN, 203LC, 210, 215, WED 110 and 111.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Information: Students enrolling for the first time must take the course concurrently with TMA 290LC.

Offered: Summer.

TMA 296 Therapeutic Massage Independent Study

1-3 cr. hrs. 2-6 periods (.5-1.5 lec., 1.5-4.5 lab)

Opportunity to continue development as a massage therapist through the pursuit of a specific project or area of study in therapeutic massage. Content will be determined by instructor and student.

Information: Students must obtain faculty approval before enrolling in this course.

Information: Course content and performance objectives will be kept on file.

Information: May be taken three times for a maximum of three credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Translation and Interpretation Studies

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

TRS 101 Introduction to Translation and Interpretation

3 cr. hrs. 3 periods (3 lec.)

Principles and procedures for acquisition of skills in interpretation and translation of written materials. Includes an introduction to translation and interpretation; translation and interpretation preparation, procedures, and specialties; and work of the translator and interpreter.

Offered: Fall.

TRS 102 English and Spanish for Translation

4 cr. hrs. 4 periods (4 lec.)

Analysis of the English and Spanish languages from the translator's point of view. Includes the structure of English and Spanish, cultural and stylistic components, and semantics. Also includes standard English mechanics, punctuation, and metaphorical and idiomatic expressions as well as an analysis of Spanish and the dialectal differences, interferences and lexical obstacles.

Offered: Fall.

TRS 120IN Technology for Translation and Interpretation

2 cr. hrs. 3 periods (1 lec., 2 lab)

Survey of the technological equipment that facilitates the work of the translator. Includes computers for transcription/translation, information distribution techniques, file transfer technologies, using the World Wide Web in translation and interpretation, and applied projects.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Offered: Fall.

TRS 150 Survey of Translation Specialty Areas

4 cr. hrs. 4 periods (4 lec.)

Introduction to the translation specialty areas of health care, legal, literary, and commercial/business. Includes introduction to specialty areas, types of documents, elements and characteristics of specialty documents, resource development, ethical and legal restrictions, and development of translation subskills.

Offered: Spring.

TRS 160 Translation in Specialty Areas

4 cr. hrs. 4 periods (4 lec.)

Principles and procedures for translating specialty area materials. Includes health care, legal, commercial/business, and literary translation exercises.

Offered: Spring.

TRS 161 Medical Spanish and English Interpreting

3 cr. hrs. 3 periods (3 lec.)

Interpreting in a medical context. Includes interpreting in a medical setting, pronunciation of Spanish and English names and medical terms, Spanish and English medical terminology, bicultural medical communication, and regional dialects.

Information: This course assumes bilingual fluency in both English and Spanish.

Offered: Fall.

TRS 162 Introduction to Legal Spanish/English Interpretation

3 cr. hrs. 3 periods (3 lec.)

Interpreting in a legal context. Includes interpreting in a legal setting, knowledge of legal procedure and ancillary issues related to legal terminology in Spanish and English, bicultural legal communication, and regional differences.

Information: Requires Spanish/English language fluency.

Offered: Spring.

TRS 202 Interpretation Techniques

3 cr. hrs. 3 periods (3 lec.)

Specific theories and practices in interpreting oral communication from English to Spanish and Spanish to English. Includes theories of interpretation, techniques of interpretation, interpretation strategies, interpretation procedures, and modes of interpretation.

Information: Consent of instructor is required before enrolling in this course.

Information: See the TRS instructor or department chair for more prerequisite information.

Offered: Spring.

TRS 203 Consecutive Interpretation and Sight Translation

4 cr. hrs. 6 periods (3 lec., 3 lab)

Essential modes of interpretation. Includes history and use, theory, interpreting skills development, sight translation skills, consecutive interpretation skills, and interpretation issues.

Offered: Fall.

TRS 270 Simultaneous Interpretation

4 cr. hrs. 4 periods (4 lec.)

Study and practice of simultaneous interpretation. Includes history and use, theory, interpreting skills development, simultaneous interpretation skills, and issues in simultaneous interpretation.

Offered: Fall.

TRS 282 Advanced Project in Translation

4 cr. hrs. 5 periods (3 lec., 2 lab)

Engaging in a specialty area advanced project to produce a translated product. Includes agency/individual sponsor, translation goals, translating written documents, on-site and/or supervised training, and preparation for exit competency evaluation.

Offered: Spring.

Travel and Tourism Operations

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

TVL 101 Introduction to the Travel Industry

3 cr. hrs. 3 periods (3 lec.)

Major components of travel products and careers. Includes travel industry and hospitality products, distribution of the travel product, and careers in the travel industry.

Offered: Fall.

TVL 102 Computerized Reservation Systems

3 cr. hrs. 5 periods (2 lec., 3 lab)

Basic software training. Includes screen management, passenger name record (PNR), Sabre's FOX, PNR modifications, faring/pricing the completed PNR, booking and pricing hotels and rental cars.

Offered: May not be offered this year, check class schedule.

TVL 103 Geography for the Tourism Professional

3 cr. hrs. 3 periods (3 lec.)

Applied physical geography of popular global tourist destinations, major tourist attractions, popular history, and itineraries for specific destinations. Includes the opportunity to take the Travel Institute's Destination Specialist Certification Exam in the geographic area of choice.

Offered: May not be offered this year, check class schedule.

TVL 109 Survey of Leisure Products

3 cr. hrs. 3 periods (3 lec.)

Electronically research, sell, and book retail leisure travel components to include, but not limited to hotels, rental cars, rail travel, escorted and all-inclusive tours, and cruise accommodations. Includes an introduction to web-based marketing (blogs, Facebook, Instagram, and other web-based conduits for increasing sales) for tourism consultants who sell a variety of tourism products.

Offered: May not be offered this year, check class schedule.

TVL 121 Tourism Sales and Marketing

3 cr. hrs. 3 periods (3 lec.)

Concepts of selling techniques for the tourism professional. Includes phone and internet selling strategies as well as an introduction to listening skills, sales techniques, client behavior styles, closing the sale, legal aspects of the travel industry for inside, outside and home-base tourism professionals. Also includes concepts of tourism marketing and marketing techniques for the tourism professional, consumer behavior, strategies, and marketing elements.

Offered: May not be offered this year, check class schedule.

TVL 211 Tour Direction and Tour Group Management

3 cr. hrs. 3 periods (3 lec.)

Introduction to the basic principles of guiding tours. Includes principles of tour group handling, tour group planning, tour guide basics, tour guide narration, tour guide procedures and challenges, and public speaking for the tour guide.

Offered: May not be offered this year, check class schedule.

TVL 296 Independent Study in Travel/Tourism

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Independent studies projects or special interest areas in travel/tourism. Content to be determined jointly between student and instructor.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

Truck Driver Training

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

TDT 111 Role of Commercial Trucking in Supply Chain Management

4 cr. hrs. 4 periods (4 lec.)

Introduction to the commercial truck driving and transportation industry. Includes an overview of supply chain management and relevant importance of the transportation industry in America. Also includes federal and state rules and regulations, careers in trucking, over-the road performance expectations, professional communications, healthy lifestyles, money management, and tools for a successful career

Information: Admission to the Truck Driver Training Program is required prior to registration.

Offered: May not be offered this year, check class schedule.

TDT 116 Basic Vehicle Operations-Coach/Transit Bus

3 cr. hrs. 3 periods (3 lec.)

Information to prepare the trainees to pass the Commercial Driver License (CDL) exam and obtain a Class "B" permit with a "P" passenger endorsement. Includes CDL preparation, driving conditions, pre-trip inspection, air brakes, map reading, hours of service, backing, and transporting passengers.

Information: Admission to the Truck Driver Training Program is required prior to registration.

Offered: May not be offered this year, check class schedule.

TDT 117 Basic Driving Maneuvers - Coach/Transit Bus

3 cr. hrs. 3.5 periods (2.5 lec., 1 lab)

Techniques for the inspection and safe operation of a coach or transit bus. Includes pre-trip inspection, backing, basic control of left and right turns, progressive shifting, space and speed management, visual search and communication, defensive driving, and hazard perception.

Information: Admission to the Truck Driver Training Program is required prior to registration.

Offered: May not be offered this year, check class schedule.

TDT 118 Basic Vehicle Operations and Commercial Driver's License Requirements

5 cr. hrs. 5 periods (5 lec.)

Basic methods of safely operating a combination vehicle. Includes the operation of the air brake system, coupling and uncoupling a tractor and trailer, cargo handling including hazardous materials, proper method of conducting a pre-trip inspection, completion of braking maneuvers, and trip planning. Also includes familiarization of the United States Department of Transportation (USDOT) regulations, hours of driver service, and all Commercial Driver's License (CDL) requirements, managing a professional driver life, managing speed effectively, and road and weather condition response.

Information: Admission to the Truck Driver Training Program is required prior to registration.

Offered: Fall.

TDT 119 Basic Driving Maneuvers – Class A CDL

3.5 cr. hrs. 4 periods (3 lec., 1 lab)

Demonstration and skill development of basic maneuvers of driving a combination vehicle. Driving proficiency development including control, backing, visual search, shifting, turning, space and speed management, and hazard perception. Successful completion of this class should prepare trainee for Commercial Driver's License (CDL) skill examination.

Prerequisite(s): Completion of TDT 118 with a grade of C or better.

Information: Admission to the Truck Driver Training Program is required prior to registration. A valid Commercial Driver's License (CDL) permit will meet the prerequisite for TDT 118.

Offered: Fall.

TDT 120 Truck Driver Training Refresher

3.5 cr. hrs. 4 periods (3 lec., 1 lab)

Overview of Truck Driver skill requirements. Includes all range and road skills with instruction in control, backing, visual search, shifting, turning, space and speed management, and hazard perception.

Information: Valid Commercial Driver's License and Department of Transportation physical and drug screen are required before enrolling in this course.

Offered: Fall.

TDT 122 Safety Awareness in the Transportation Industry

4 cr. hrs. 4 periods (4 lec.)

Essential awareness of commercial motor vehicle safety. Includes proper daily vehicle inspections and systems analysis, cargo securement, identifying driving hazards and safe driving techniques, emergency maneuvers, and accident procedures. Also includes regulating agency presentations, and cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), and first aid training and certification.

Information: Admission to the Truck Driver Training Program is required prior to registration.

Offered: May not be offered this year, check class schedule.

Veterinary Science

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

VSC 290 Veterinary Science Internship

1-4 cr. hrs. 5-20 periods (5-20 lab)

Internship and work experience in a veterinary science field or laboratory. Includes setting, achieving, and evaluating goals for hands-on learning experiences in veterinary sciences. Also includes development of skills and knowledge needed to work in a veterinary science field or laboratory.

Information: Six credit hours of Veterinary Science and consent of instructor are required before enrolling in this course.

Offered: Fall, Spring, Summer.

Veterinary Technology

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

VET 100 Introduction to Veterinary Technology

3 cr. hrs. 3 periods (3 lec.)

Introduction into the role of the veterinary technician careers and career paths, legal applications, ethical responsibilities, professional attitudes, medical terminology, and occupational safety issues. Also includes breed identification of domestic animals, behavioral characteristics of animals, human-animal bonding, and dealing with pet loss.

Corequisite(s): VET 110, VET 130, VET 225

Information: Admission to the Veterinary Technology program is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

VET 106 Veterinary Practice Assistant I

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to the basic skills needed to assist veterinary professionals in the quality care of animals. Includes animal restraint, nursing, vaccinations and other basic assisting skills.

Corequisite(s): VET 107, VET 108

Information: Consent of program faculty is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

VET 107 Veterinary Practice Assistant II

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of VET 106. Includes pharmacy, surgical, laboratory and imaging skills.

Corequisite(s): VET 106, VET 108

Information: Consent of program faculty is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

VET 108 Introduction to Veterinary Facility Practices

6 cr. hrs. 6 periods (6 lec.)

Introduction into the role of the veterinary practice assistant in the veterinary medicine profession. Includes careers and career paths, legal applications, ethical responsibilities, professional attitudes, medical terminology, and occupational safety issues. Also includes standard office procedures with an emphasis in client relations and education and computer skills, breed identification of domestic animals, behavioral characteristics of animals, human-animal bonding, and dealing with pet loss.

Corequisite(s): VET 106, VET 107

Information: Consent of program faculty is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

VET 110 Veterinary Nursing Procedures I

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to veterinary nursing techniques. Includes physical examination, history taking, injections, preventative health care, basic nutrition and animal restraint. Also includes husbandry techniques, kennel management and sanitation of kennel facilities for dogs and cats.

Corequisite(s): VET 100, VET 130, VET 225

Information: Admission to the Veterinary Technology program is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

VET 111 Veterinary Nursing Procedures II

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of VET 110 with an emphasis on venipuncture, catheterization, fluid therapy and basic dental care procedures. Includes complete physical examinations, wound management, CPR and first aid.

Prerequisite(s): VET 100, 110, 130 and 225.

Corequisite(s): VET 120, VET 131, VET 150

Offered: May not be offered this year, check class schedule.

VET 120 Clinical Pathology I

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to clinical pathology. Includes pathology terminology, basic laboratory procedures and specimen collection and preservation. Also includes basic use and care of microscopes.

Prerequisite(s): VET 100, 110, 130 and 225.

Corequisite(s): VET 111, VET 131, VET 150

Offered: May not be offered this year, check class schedule.

VET 121 Clinical Pathology II

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of VET 120. Includes review of laboratory procedures, urinalysis, and cytologic evaluations. Also includes pathogens, parasites, and hematologic evaluations.

Prerequisite(s): VET 111, 120, 131 and 150.

Corequisite(s): VET 200, VET 211

Offered: May not be offered this year, check class schedule.

VET 130 Animal Anatomy and Physiology I

4 cr. hrs. 6 periods (3 lec., 3 lab)

Anatomy and physiology of domestic animals. Includes the study of body systems such as skeletal, muscular, integumentary, special sense organs, circulatory and digestive. Also includes principles of disease.

Corequisite(s): VET 100, VET 110, VET 225

Information: Admission to Veterinary Technology program is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

VET 131 Animal Anatomy and Physiology II

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of VET 130. Includes the study of the nervous, respiratory, and reproductive systems and special sense organs. Also includes endocrine, urinary systems, and principles of disease.

Prerequisite(s): VET 100, 110, 130 and 225.

Corequisite(s): VET 111, VET 120, VET 150

Offered: May not be offered this year, check class schedule.

VET 150 Pharmacology

3 cr. hrs. 4 periods (2 lec., 2 lab)

Introduction to regulations of biologics and pharmaceuticals. Includes classification, dosage calculations, labeling, logging and packaging of drugs.

Prerequisite(s): VET 100, 110, 130 and 225.

Corequisite(s): VET 111, VET 120, VET 131

Offered: May not be offered this year, check class schedule.

VET 191 Veterinary Technician Clinical Experience I

3 cr. hrs. 12 periods (12 lab)

Supervised 200 hour clinical experience, which will be conducted at local veterinary hospitals, clinics, laboratory, and zoo or research facilities.

Information: Completion of first year Veterinary Technology courses is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

VET 196 Independent Study in Veterinary Technology

1-3 cr. hrs. 1-3 periods (1-3 lec.)

Independent study course offering students an inroad to focus on a particular veterinary medical subject or subjects, to study that subject, and to hone manual skills while working in an independent format. Content of study and its manner of execution must be developed through mutual agreement between the student and the instructor prior to enrollment in the course.

Information: Consent of instructor is required before enrolling in this class.

Offered: May not be offered this year, check class schedule.

VET 200 Anesthetic and Surgical Nursing

3 cr. hrs. 4 periods (2 lec., 2 lab)

Techniques and procedures involving surgery and anesthesia. Includes preparation and identification of instruments and equipment, routine surgical procedures and handling of instruments and supplies during surgery. Also includes anesthesia induction and monitoring, post surgical care, clean up and surgical record keeping.

Prerequisite(s): VET 111, 120, 131 and 150.

Corequisite(s): VET 121, VET 211

Offered: May not be offered this year, check class schedule.

VET 205 Radiology and Imaging Techniques

2 cr. hrs. 2 periods (2 lec.)

Principles and techniques of radiographic imaging. Includes the physics behind production of X-rays, ultrasound and advanced imaging. Introduction to radiographic equipment, endoscopy equipment, ultrasound equipment and 3 dimensional imaging units. Instruction in workplace safety measures regarding imaging equipment.

Prerequisite(s): VET 130 and 131.

Corequisite(s): VET 205LB

Offered: May not be offered this year, check class schedule.

VET 205LB Radiology and Imaging Techniques Lab

1 cr. hrs. 2 periods (2 lab)

The lab portion of VET 205. Includes principles and techniques of radiographic imaging. Also includes the production of X-rays, radiographic equipment, safety measures and radiographic quality, diagnostic radiographs, positioning of patients, darkroom techniques and X-ray processing.

Prerequisite(s): VET 130 and 131.

Corequisite(s): VET 205

Offered: May not be offered this year, check class schedule.

VET 210 Veterinary Nursing Procedures: Large Animal Care

2 cr. hrs. 5 periods (1 lec., 4 lab)

Veterinary nursing techniques for large animals. Includes restraint procedures; nursing care and behavior of large animals; preventative medicine; nutrition; and large animal medical and surgical procedures. Also includes mentoring techniques; teamwork; communications; and health problem assessment involving kennel management.

Prerequisite(s): VET 111, 120, 131 and 150.

Corequisite(s): VET 205, VET 220

Offered: May not be offered this year, check class schedule.

VET 211 Veterinary Nursing Procedures: Avian, Exotic and Lab Animals

2 cr. hrs. 5 periods (1 lec., 4 lab)

Veterinary nursing techniques for avian, exotic and laboratory animals. Includes care and management of laboratory animals and exotic companion animals; nursing procedures; preventative health care; and restraint. Also includes mentoring techniques; teamwork; communications; and health problem assessment involving kennel management.

Prerequisite(s): VET 111, 120, 131, 150.

Corequisite(s): VET 121, VET 200

Offered: May not be offered this year, check class schedule.

VET 220 Clinical Pathology III

3 cr. hrs. 4 periods (2 lec., 2 lab)

Continuation of VET 121 for summation of laboratory skills and techniques needed of the Veterinary Technician. Includes blood chemistry, bacteriologic and microbiologic procedures and necropsy.

Prerequisite(s): VET 121, 200 and 211.

Corequisite(s): VET 205, VET 210

Offered: May not be offered this year, check class schedule.

VET 225 Veterinary Hospital Procedures

3 cr. hrs. 3 periods (3 lec.)

Standard office procedures with an emphasis in client relations, education and computer skills. Ethics in veterinary medicine, state and federal regulations governing veterinarian practices and all aspects of clinical patient care will be covered.

Corequisite(s): VET 100, VET 110, VET 130

Information: Admission to the Veterinary Technology program is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

VET 230 VTNE and AZ State Veterinary Medical Examining Board Review

3 cr. hrs. 3 periods (3 lec.)

Preparation for a Veterinary Assistant or non-certified Technician to sit for the national and state Veterinary Technician Board Exams. Includes a review of the Arizona Revised Statutes and Administrative Rules pertaining to Veterinary medicine and content review of all pertinent medical subjects. Also includes test taking skills, test anxiety techniques and practice board exams.

Offered: May not be offered this year, check class schedule.

VET 291 Veterinary Technician Clinical Experience II

3 cr. hrs. 12 periods (12 lab)

Supervised 200 hour clinical experience, which will be conducted at local veterinary hospitals, clinics, laboratory, and zoo or research facilities.

Information: Completion of all VET Courses is required before enrolling in this course.

Offered: May not be offered this year, check class schedule.

Welding

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

WLD 110 Basic Arc and Oxyacetylene Welding

4 cr. hrs. 6 periods (2 lec., 4 lab)

Procedures and techniques in arc and oxyacetylene welding. Includes health, safety, and environmental practices, welding terminology, arc and oxyacetylene welding equipment, proper welding procedures for arc and oxyacetylene, arc and oxyacetylene steel welding, welding machines and polarities, filler metal identification, and welding positions, and oxyacetylene cutting.

Offered: Fall, Spring, Summer.

WLD 115 Blueprint Reading/Estimating

4 cr. hrs. 4 periods (4 lec.)

Principles and procedures for interpreting structural blueprints and determining materials and labor costs. Includes fundamentals of blueprint reading, welding print format and types of fabrication blueprints, welding symbols and sizes, structural shapes and symbols, blueprint interpretation, introduction to estimating, bonds and insurance, materials specifications, labor, structural steel systems, and steel fabrication checklist.

Prerequisite(s): MAT 082 or required score on math assessment test.

Offered: Fall, Spring.

WLD 120 Welding for Metal Sculpture

4 cr. hrs. 6 periods (2 lec., 4 lab)

Basic welding techniques and processes used in metal sculpture design and fabrication. Includes oxyacetylene safety practice, oxyacetylene equipment handling, oxyacetylene welding procedures, assembly of portable equipment, oxyacetylene cutting and design, oxyacetylene bronze build-up, arc welding safety practices, arc welding procedures, basic joint design, currents and polarities, arc welding machines and electrodes, and arc designing for sculpture.

Offered: Fall, Spring, Summer.

WLD 160 Arc Welding

4 cr. hrs. 6 periods (2 lec., 4 lab)

Principles and techniques of joining metals with an electric arc as the source. Includes arc welding uses, safety, techniques, flame cutting, joint design, welding costs, electric currents and power sources, carbon arc cutting, filler metal selection, hardfacing, and metal identification.

Prerequisite(s): WLD 110.

Information: Prerequisite may be waived with appropriate work experience or course work. See a welding instructor or advisor for prerequisite information.

Offered: Fall, Spring.

WLD 250 Pipe Welding

4 cr. hrs. 6 periods (2 lec., 4 lab)

Principles and techniques of pipe welding. Includes introduction to pipe layout and drawing equipment. Also includes an introduction to performance testing, types of pipe, methods and preparation of pipe joints and miter joints, methods of joining pipe and miter joints.

Prerequisite(s): WLD 160.

Information: Prerequisite(s) may be waived with appropriate work experience. See a welding instructor or advisor for prerequisite information.

Offered: Fall, Spring.

WLD 261 Gas Metal Arc Welding

4 cr. hrs. 6 periods (2 lec., 4 lab)

Procedures and techniques in Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW) processes. Includes health, safety, and environmental practices, welding terminology, GMAW and FCAW processes and equipment, equipment operation and welding techniques, power source and wire feed types and controls, welding currents and polarities, welding wires in GMAW and FCAW processes, shielding gases, and mild steel and aluminum welding.

Offered: Fall, Spring, Summer.

WLD 262 Gas Tungsten Arc Welding

4 cr. hrs. 6 periods (2 lec., 4 lab)

Procedures and techniques in the Gas Tungsten Arc Welding (GTAW) process. Includes health, safety, and environmental practices, welding terminology, GTAW process and equipment, equipment operation and techniques, power source types and controls, welding currents and polarities, tungsten electrodes, shielding gases, mild steel welding, aluminum welding, stainless steel welding, and GTAW certification.

Prerequisite(s): WLD 110.

Information: Prerequisite may be waived with welding industry experience.

Offered: Fall, Spring.

WLD 263 Layout and Fabrication Welding

4 cr. hrs. 6 periods (2 lec., 4 lab)

Principles and techniques of steel layout and fabrication welding. Includes measurement, print reading review, layout tools, layout techniques, hand-held power tool safety and use, large power tool safety and use, drawing interpretation, structural methods, and welding projects.

Prerequisite(s): WLD 115, 261 and GTM 105 (or placement into MAT 092 or higher).

Recommendation: Completion of WLD 160 before enrolling in this course.

Information: Prerequisites may be waived for appropriate work experience. See a welding instructor or advisor for prerequisite information.

Offered: Fall, Spring.

WLD 296 Welding Independent Projects

1-4 cr. hrs. 3-12 periods (3-12 lab)

Self-directed laboratory projects. Includes project objectives, procedures, safety practices, welding processes, set-up for the project, and project completion.

Prerequisite(s): WLD 110.

Information: Welding industry experience or welding skills may be substituted for the prerequisite requirement. See a welding instructor for approval.

Information: May be repeated up to three times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

Wellness Education

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

WED 110 Introduction to Complementary and Alternative Medicine

3 cr. hrs. 3 periods (3 lec.)

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.

Offered: Fall.

WED 111 Self Care for Personal Wellness

2 cr. hrs. 2 periods (2 lec.)

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.

Offered: Fall.

WED 120 Introduction to Energy Healing

1 cr. hrs. 1 periods (1 lec.)

An overview of energy modalities, how energy works, how energy can be manifested and used for healing, and the personal responsibilities and ethical considerations for a practitioner of healing.

Information: Elective course for Therapeutic Massage Program. Open to anyone who wishes to enroll. Recommended to health and wellness professionals for Continuing Education hours.

Offered: May not be offered this year, check class schedule.

WED 121 Reiki I

1 cr. hrs. 1 periods (1 lec.)

Instruction and certification in the Usui Method of Reiki Level I. Includes concepts, definitions, history, ethics, levels of Reiki, assessing energy, and hand positions used in Reiki. Also includes Reiki I attunement, and Reiki I sharing.

Information: Elective course for Therapeutic Massage Program. Open to anyone who wishes to enroll. Recommended to health and wellness professionals for Continuing Education hours.

Offered: May not be offered this year, check class schedule.

WED 122 Reiki II

1 cr. hrs. 1 periods (1 lec.)

Review of the Usui Method of Reiki Level I, and instruction and coaching in the concepts and techniques for Usui Method of Reiki Level II: distance healing and healing symbols in Reiki practice. Includes Reiki II attunement and certification.

Prerequisite(s): WED 121

Information: WED 121 may be waived with a Reiki I certificate from a qualified Reiki Master. See instructor for details. Applicable as an elective course for the Therapeutic Massage program and as continuing education hours for health and wellness professionals.

Offered: May not be offered this year, check class schedule.

WED 124 Craniosacral Therapy for Massage Therapists and Health Professionals

2 cr. hrs. 2 periods (2 lec.)

Instruction and certification in Craniosacral Therapy: a gentle, non-invasive bodywork technique. Includes history, concepts, effects, hand placements, sensations, and practice of a Craniosacral session.

Information: Elective course for Therapeutic Massage students. Open to anyone who wishes to enroll. Recommended for health and wellness professionals (equivalent to 26 Continuing Education Hours or 2.6 CEUs.)

Offered: May not be offered this year, check class schedule.

Writing

For courses numbered 098, 198, 298, see "Topic Courses" on page 281

WRT 070 Developmental Writing

3 cr. hrs. 3 periods (3 lec.)

Development of fundamental writing skills. Includes writing processes and sentence development and structure.

Prerequisite(s): Required score on Writing assessment test.

Information: WRT 070A, 070B, and 070C together constitute WRT 070.

Information: Equivalent to WRT 075.

Offered: Fall, Spring.

WRT 070A Developmental Writing: Module A

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills. Includes writing processes and sentence development and structure.

Prerequisite(s): Required score on Writing assessment test.

Information: WRT 070A, 070B, and 070C together constitute WRT 070.

Information: A student may concurrently enroll in WRT 070A, 070B, and 070C.

Information: Equivalent to WRT 075A.

Offered: Fall, Spring.

WRT 070AL Developmental Writing with Individualized Instruction

4 cr. hrs. 4.5 periods (3.5 lec., 1 lab)

Development of fundamental writing skills. Includes writing processes, sentence development, and structure. Also includes individualized instruction to increase academic and college readiness.

Prerequisite(s): Required score on writing assessment.

Information: Equivalent to WRT 070. This course incorporates a component of comprehensive skill development in an effort to increase college readiness. This course is appropriate for students needing additional support.

Offered: May not be offered this year, check class schedule.

WRT 070B Developmental Writing: Module B

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills. Includes intermediate sentence development, structure and written works.

Prerequisite(s): WRT 070A with a C or better, or concurrent enrollment.

Information: WRT 070A, 070B, and 070C together constitute WRT 070.

Information: A student may concurrently enroll in WRT 070A, 070B, and 070C.

Information: Equivalent to WRT 075B.

Offered: Fall, Spring.

WRT 070C Developmental Writing: Module C

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills. Includes advanced sentence development, structure and written works.

Prerequisite(s): WRT 070B with a C or better, or concurrent enrollment; or concurrent enrollment in WRT 070A and 070B.

Information: WRT 070A, 070B, and 070C together constitute WRT 070.

Information: A student may concurrently enroll in WRT 070A, 070B, and 070C.

Information: Equivalent to WRT 075C.

Offered: Fall, Spring.

WRT 072 Sentence Patterns

1 cr. hrs. 1 periods (1 lec.)

Review of various types of sentence structures. Includes variety of sentences, common grammar and sentence errors, punctuation, and short papers.

Offered: Fall.

WRT 073 Punctuation

1 cr. hrs. 1 periods (1 lec.)

Review of punctuation mechanics. Includes rules of punctuation, punctuation mark usage, and written assignments.

Offered: Fall.

WRT 075 Developmental Writing for Non-Native Speakers of English

3 cr. hrs. 3 periods (3 lec.)

Development of fundamental writing skills for non-native speakers of English. Includes writing processes, sentence development and structure, and written works.

Prerequisite(s): Required score on the Writing assessment test.

Information: WRT 075A, 075B, and 075C together constitute WRT 075.

Information: Equivalent to WRT 070.

Offered: May not be offered this year, check class schedule.

WRT 075A Developmental Writing for Non-Native Speakers of English: Module A

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills for non-native speakers of English. Includes writing processes, beginning sentence development and structure, and written works.

Prerequisite(s): Required score on Writing assessment test.

Information: WRT 075A, 075B, and 075C together constitute WRT 075. A student may concurrently enroll in WRT 075A, 075B, and 075C. Equivalent to WRT 070A.

Offered: Fall, Spring.

WRT 075B Developmental Writing for Non-Native Speakers of English: Module B

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills for non-native speakers of English. Includes intermediate sentence development and structure and written works.

Prerequisite(s): WRT 075A with a C or better or concurrent enrollment in WRT 075A and/or 075C.

Information: WRT 075A, 075B, and 075C together constitute WRT 075. A student may concurrently enroll in WRT 075A, 075B, and 075C. Equivalent to WRT 070B.

Offered: Fall, Spring.

WRT 075C Developmental Writing for Non-Native Speakers of English: Module C

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills for non-native speakers of English. Includes advanced sentence development and structure and written works.

Prerequisite(s): WRT 075B with a C or better or concurrent enrollment in WRT 075A and/or 075B.

Information: WRT 075A, 075B, and 075C together constitute WRT 075. A student may concurrently enroll in WRT 075A, 075B, and 075C. Equivalent to WRT 070C.

Offered: Fall, Spring.

WRT 090 Writing Fundamentals

3 cr. hrs. 3 periods (3 lec.)

Introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

Prerequisite(s): With a C or better: ESL 088WG or WRT 070 or 075 or required score on the Writing assessment.

Information: WRT 090A, 090B, and 090C together constitute WRT 090. Equivalent to WRT 096.

Offered: Fall, Spring, Summer.

WRT 090A Writing Fundamentals: Module A

1 cr. hrs. 1 periods (1 lec.)

Introduction to academic writing. Includes basic, beginning practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing paragraphs and short essays.

Prerequisite(s): With a C or better: ESL 088WG or WRT 070 or 075 or required score on the Writing assessment.

Information: WRT 090A, 090B, and 090C together constitute WRT 090. A student may concurrently enroll in WRT 090A, 090B, and 090C. Equivalent to WRT 096A.

Offered: Fall, Spring, Summer.

WRT 090B Writing Fundamentals: Module B

1 cr. hrs. 1 periods (1 lec.)

Introduction to academic writing. Includes basic intermediate practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing short essays.

Prerequisite(s): WRT 090A with a C or better or concurrent enrollment.

Information: WRT 090A, 090B, and 090C together constitute WRT 090. A student may concurrently enroll in WRT 090A, 090B, and 090C. Equivalent to WRT 096B.

Offered: Fall, Spring, Summer.

WRT 090C Writing Fundamentals: Module C

1 cr. hrs. 1 periods (1 lec.)

Introduction to academic writing. Includes basic advanced practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing short essays.

Prerequisite(s): WRT 090B with a C or better or concurrent enrollment in WRT 090A and/or 090B.

Information: WRT 090A, 090B, and 090C together constitute WRT 090. A student may concurrently enroll in WRT 090A, 090B, and 090C. Equivalent to WRT 096C.

Offered: Fall, Spring, Summer.

WRT 090P Writing Fundamentals Plus

4 cr. hrs. 4 periods (4 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on the Writing assessment or ESL 088WG with a B or better.

Information: WRT 090PA, 090PB, 090PC, and 090PD together constitute WRT 090P. Equivalent to WRT 096P.

Offered: Fall, Spring.

WRT 090PA Writing Fundamentals Plus: Module A

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing paragraphs.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on the Writing assessment or ESL 088WG with a B or better.

Information: WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PA

Offered: Fall, Spring.

WRT 090PB Writing Fundamentals Plus: Module B

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

Information: WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PB.

Offered: Fall, Spring.

WRT 090PC Writing Fundamentals Plus: Module C

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

Information: WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PC.

Offered: Fall, Spring.

WRT 090PD Writing Fundamentals Plus: Module D

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

Information: WRT 090PA, 090PB, 090PC, 090PD together constitute WRT 090P. Equivalent to WRT 096PD.

Offered: Fall, Spring.

WRT 090R Integrated Writing and Reading Fundamentals

6 cr. hrs. 6 periods (6 lec.)

Integrated writing and reading skills. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing texts using appropriate technology, and analyzing and creating paragraphs and short essays. Also includes vocabulary, comprehension, study strategies, metacognition, information literacy, and a community of readers.

Prerequisite(s): Requires both Reading and Writing prerequisites. Reading: With a C or better: ESL 088RV, or REA 081, or required score on the Reading assessment. Writing: With a C or better: ESL 088WG, or WRT 070, or required score on the Writing assessment.

Information: This course fulfills REA 091 and WRT 090.

Offered: Fall, Spring, Summer.

WRT 090S Writing Fundamentals

4 cr. hrs. 4.5 periods (3.5 lec., 1 lab)

Introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays. Integrates an intensive studio component that includes specific strategies designed to improve student performance and success.

Prerequisite(s): Placement into WRT 070 on the writing assessment.

Information: Equivalent to WRT 090. For students who assess into WRT 070 but believe that with additional studio instruction they can successfully complete WRT 090.

Offered: Fall, Spring.

WRT 096 Writing Fundamentals for Non-Native Speakers of English

3 cr. hrs. 3 periods (3 lec.)

Introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

Prerequisite(s): With a grade of C or better: ESL 088WG or WRT 070 or 075, or required score on the Writing assessment.

Information: WRT 096A, 096B, and 096C together constitute WRT 096. Equivalent to WRT 090.

Offered: Fall, Spring.

WRT 096A Writing Fundamentals for Non-Native Speakers of English: Module A

1 cr. hrs. 1 periods (1 lec.)

Introduction to academic writing. Includes basic, beginning practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing paragraphs and short essays.

Prerequisite(s): With a grade of C or better: ESL 088WG or WRT 070 or 075, or required score on the Writing assessment.

Information: WRT 096A, 096B, and 096C together constitute WRT 096. A student may concurrently enroll in WRT 096A, 096B, and 096C. Equivalent to WRT 090A.

Offered: Fall, Spring, Summer.

WRT 096B Writing Fundamentals for Non-Native Speakers of English: Module B

1 cr. hrs. 1 periods (1 lec.)

Introduction to academic writing. Includes basic intermediate practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing short essays.

Prerequisite(s): WRT 096A with a C or better or concurrent enrollment in WRT 096A and/or 096C.

Information: WRT 096A, 096B, and 096C together constitute WRT 096. A student may concurrently enroll in WRT 096A, 096B, and 096C. Equivalent to WRT 090B.

Offered: Fall, Spring, Summer.

WRT 096C Writing Fundamentals for Non-Native Speakers of English: Module C

1 cr. hrs. 1 periods (1 lec.)

Introduction to academic writing. Includes basic advanced practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing short essays.

Prerequisite(s): WRT 096B with a C or better or concurrent enrollment.

Information: WRT 096A, 096B, and 096C together constitute WRT 096. A student may concurrently enroll in WRT 096A, 096B, and 096C. Equivalent to WRT 090C.

Offered: Fall, Spring, Summer.

WRT 096P Writing Fundamentals Plus for Non-Native Speakers of English

4 cr. hrs. 4 periods (4 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

Information: WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090P.

Offered: Fall, Spring.

WRT 096PA Writing Fundamentals Plus for Non-Native Speakers of English: Module A

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in multiple writing processes, using appropriate conventions in creating and revising texts, and analyzing and writing paragraphs.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

Information: WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PA.

Offered: Fall, Spring.

WRT 096PB Writing Fundamentals Plus for Non-Native Speakers of English: Module B

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

Information: WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PB.

Offered: Fall, Spring.

WRT 096PC Writing Fundamentals Plus for Non-Native Speakers of English: Module C

1 cr. hrs. 1 periods (1 lab)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing processes, using appropriate conventions in creating and revising texts, composing using appropriate technology, and analyzing and writing paragraphs and short essays.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

Information: WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PC.

Offered: Fall, Spring.

WRT 096PD Writing Fundamentals Plus for Non-Native Speakers of English: Module D

1 cr. hrs. 1 periods (1 lec.)

Development of fundamental writing skills and introduction to academic writing. Includes basic practice in employing critical thinking skills, practicing multiple writing analyzing and writing paragraphs and short essays.

Prerequisite(s): WRT 070, 075 with a C or better, or required score on Writing Assessment test, or ESL 088WG with a B or better.

Information: WRT 096PA, 096PB, 096PC, 096PD together constitute WRT 096P. Equivalent to WRT 090PD.

Offered: Fall, Spring.

WRT 101 Writing I

3 cr. hrs. 3 periods (3 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts, employing critical thinking skills, practicing multiple writing processes, using conventions in creating and revising texts, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation.

Prerequisite(s): ESL 088WG with a B or better, WRT 090 or 096 with a C or better or required score on the Writing assessment.

Offered: Fall, Spring, Summer.

WRT 101A Writing I: Module A

1 cr. hrs. 1 periods (1 lec.)

Principles and practices of college-level writing. Includes practicing multiple writing processes, using conventions in creating and revising texts, and writing college-level essays with an emphasis on argumentation.

Prerequisite(s): ESL 088WG with a B or better, or WRT 090 or 096 with a C or better, or required score on the Writing assessment.

Information: WRT 101A, 101B, and 101C together constitute WRT 101. A student may concurrently enroll in WRT 101A, 101B, and 101C. Equivalent to WRT 107A.

Offered: Fall, Spring.

WRT 101B Writing I: Module B

1 cr. hrs. 1 periods (1 lec.)

Principles and practices of college-level writing. Includes employing critical thinking skills, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation.

Prerequisite(s): WRT 101A with a C or better or concurrent enrollment.

Information: WRT 101A, 101B, and 101C together constitute WRT 101. A student may concurrently enroll in WRT 101A, 101B, and 101C. Equivalent to WRT 107B.

Offered: Fall, Spring.

WRT 101C Writing I: Module C

1 cr. hrs. 1 periods (1 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts and writing college-level essays with an emphasis on argumentation.

Prerequisite(s): WRT 101B with a C or better or concurrent enrollment.

Information: WRT 101A, 101B, and 101C together constitute WRT 101. A student may concurrently enroll in WRT 101A, 101B, and 101C. Equivalent to WRT 107C.

Offered: Fall, Spring.

WRT 101HC Writing I: Honors

3 cr. hrs. 3 periods (3 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts, employing critical thinking skills, practicing multiple writing processes, using conventions in creating and revising texts, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation. Also includes additional Honors content.

Prerequisite(s): Honors assessment score required.

Information: Must qualify for Honors program and obtain instructor or advisor/counselor approval to register for this course.

Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; a publishable quality, peer reviewed paper or project in a format appropriate for the discipline; presentation of research, in class or to a wider audience.

Offered: Fall, Spring.

WRT 101S Writing I / Integrated Studio

4 cr. hrs. 4.5 periods (3.5 lec., 1 lab)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts, employing critical thinking skills, practicing multiple writing processes, using conventions in creating and revising texts, using appropriate technology, and writing college-level essays with an emphasis on argumentation. Integrates an intensive studio component that includes specific strategies designed to improve student performance and success.

Prerequisite(s): Placement into WRT 090 on the Writing assessment or placement into ESL 088WG with a B or better.

Information: Equivalent to WRT101. For students who assess into WRT 090 but believe that with additional studio instruction they can successfully complete WRT101.

Offered: Fall, Spring.

WRT 102 Writing II

3 cr. hrs. 3 periods (3 lec.)

Continuation of WRT 101. Includes reading, analyzing, and discussing various types of text; writing analytical or critical papers; and developing research skills. Also includes writing a research paper.

Prerequisite(s): WRT 101 or 107 with a C or better.

Offered: Fall, Spring, Summer.

WRT 102A Writing II: Module A

1 cr. hrs. 1 periods (1 lec.)

Continuation of WRT 101. Includes beginning practice in reading, analyzing, and discussing various types of text and beginning practice in writing analytical or critical papers.

Prerequisite(s): WRT 101 or 107 with a C or better.

Information: WRT 102A, 102B and 102C together constitute WRT 102. A student may concurrently enroll in WRT 102A, 102B and 102C. Equivalent to WRT 108A.

Offered: Fall, Spring.

WRT 102B Writing II: Module B

1 cr. hrs. 1 periods (1 lec.)

Continuation of WRT 101. Includes intermediate practice in reading, analyzing, and discussion various types of text; intermediate practice in writing analytical or critical papers; and developing basic research skills. Also includes writing a research paper.

Prerequisite(s): WRT 102A with a C or better, or concurrent in WRT 102A.

Information: WRT 102A, 102B and 102C together constitute WRT 102. A student may concurrently enroll in WRT 102A, 102B, and 102C. Equivalent to WRT 108B.

Offered: Fall, Spring.

WRT 102C Writing II: Module C

1 cr. hrs. 1 periods (1 lec.)

Continuation of WRT 101. Includes advanced practice in reading, analyzing, and discussing various types of text and advanced practice in writing analytical or critical papers.

Prerequisite(s): WRT 102B with a C or better, or concurrent enrollment in WRT 102A and 102B.

Information: WRT 102A, 102B and 102C together constitute WRT 102. A student may concurrently enroll in WRT 102A, 102B and 102C.

Information: Equivalent to WRT 108C.

Offered: Fall, Spring.

WRT 102HC Writing II: Honors

3 cr. hrs. 3 periods (3 lec.)

Continuation of WRT 101 or WRT 101HC. Includes writing analytical or critical papers, analysis and discussion of various types of literature, developing advanced research and critical thinking skills, and written works. Also includes writing a research paper as well as additional Honors level content.

Prerequisite(s): WRT 101 or WRT 101HC with a C or better.

Information: Qualification for Honors program and consent of instructor or advisor/counselor is required before enrolling in this course. Honors Content: Intensive research using highest standards and best practices for the discipline, and a significant number/variety of readings of both primary and secondary sources; publishable quality, peer reviewed paper or project in format appropriate for this discipline: presentation of research, in class or to a wider audience.

Offered: Spring.

WRT 107 Writing I for Non-Native Speakers of English

3 cr. hrs. 3 periods (3 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts, employing critical thinking skills, practicing multiple writing processes, using conventions in creating and revising texts, composing using appropriate technology, and writing college-level essays

Prerequisite(s): ESL 088WG with a B or better, or WRT 090 or 096 with a C or better, or required score on the Writing assessment.

Information: WRT 107A, 107B, and 107C together constitute WRT 107. Equivalent to WRT 101.

Offered: Fall.

WRT 107A Writing I for Non-Native Speakers of English: Module A

1 cr. hrs. 1 periods (1 lec.)

Principles and practices of college-level writing. Includes practicing multiple writing processes, using conventions in creating and revising texts, and writing college-level essays with an emphasis on argumentation.

Prerequisite(s): ESL 088WG with a B or better, or WRT 090 or 096 with a C or better, or required score on Writing assessment.

Information: WRT 107A, 107B, and 107C together constitute WRT 107. A student may concurrently enroll in WRT 107A, 107B, and 107C. Equivalent to WRT 101A.

Offered: Fall, Spring.

WRT 107B Writing I for Non-Native Speakers of English: Module B

1 cr. hrs. 1 periods (1 lec.)

Principles and practices of college-level writing. Includes employing critical thinking skills, composing using appropriate technology, and writing college-level essays with an emphasis on argumentation.

Prerequisite(s): WRT 107A with a C or better or concurrent enrollment.

Information: WRT 107A, 107B, and 107C together constitute WRT 107. A student may concurrently enroll in WRT 107A, 107B, and 107C. Equivalent to WRT 101B.

Offered: Fall, Spring.

WRT 107C Writing I for Non-Native Speakers of English: Module C

1 cr. hrs. 1 periods (1 lec.)

Principles and practices of college-level writing. Includes using rhetorical principles in analyzing and creating texts and writing college-level essays with an emphasis on argumentation.

Prerequisite(s): WRT 107B with a C or better or concurrent enrollment.

Information: WRT 107A, 107B, and 107C together constitute WRT 107. A student may concurrently enroll in WRT 107A, 107B, and 107C. Equivalent to WRT 101C.

Offered: Fall, Spring.

WRT 108 Writing II for Non-Native Speakers of English

3 cr. hrs. 3 periods (3 lec.)

Continuation of WRT 107 appropriate for non-native speakers of English. Includes reading, analyzing, and discussing various types of text; writing analytical or critical papers; and developing research skills. Also includes writing a research paper.

Prerequisite(s): WRT 101 or 107 with a C or better.

Information: Equivalent to WRT 102.

Offered: May not be offered this year, check class schedule.

WRT 108A Writing II for Non-Native Speakers of English: Module A

1 cr. hrs. 1 periods (1 lec.)

Continuation of WRT 107. Includes beginning practice in reading, analyzing, and discussing various types of text and beginning practice in writing analytical or critical papers.

Prerequisite(s): WRT 101 or 107 with a C or better.

Information: WRT 108A, 108B and 108C together constitute WRT 108. A student may concurrently enroll in WRT 108A, 108B and 108C.

Information: Equivalent to WRT 102A.

Offered: Fall, Spring.

WRT 108B Writing II for Non-Native Speakers of English: Module B

1 cr. hrs. 1 periods (1 lec.)

Continuation of WRT 107. Includes intermediate practice in reading, analyzing, and discussion various types of text; intermediate practice in writing analytical or critical papers; and developing basic research skills. Also includes writing a research paper.

Prerequisite(s): WRT 108A with a C or better, or concurrent enrollment in WRT 108A.

Information: WRT 108A, 108B and 108C together constitute WRT 108. A student may concurrently enroll in WRT 108A, 108B and 108C.

Information: Equivalent to WRT 102B.

Offered: Fall, Spring.

WRT 108C Writing II for Non-Native Speakers of English: Module C

1 cr. hrs. 1 periods (1 lec.)

Continuation of WRT 107. Includes advanced practice in reading, analyzing, and discussing various types of text and advanced practice in writing analytical or critical papers.

Prerequisite(s): WRT 108B with a C or better, or concurrent enrollment in WRT 108A and 108B.

Information: WRT 108A, 108B and 108C together constitute WRT 108. A student may concurrently enroll in WRT 108A, 108B and 108C.

Information: Equivalent to WRT 102C.

Offered: Fall, Spring.

WRT 125 Beginning Poetry Writing

3 cr. hrs. 3 periods (3 lec.)

Poetry for beginners. Includes beginning poetry writing techniques, beginning evaluation and critical response to poems, and beginning original writing.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

WRT 126 Basics of Short Story Writing

3 cr. hrs. 3 periods (3 lec.)

Short fiction writing for beginners. Includes beginning fiction writing techniques, beginning critical responses to fiction, and beginning original writing.

Information: May be taken three times for a maximum of nine credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall, Spring.

WRT 140 Writing and Editing Technical Communications

3 cr. hrs. 3 periods (3 lec.)

Introduction to basic concepts and techniques for writing and editing technical documents. Includes sentence structure and style; common grammar, usage, and punctuation rules; paragraph structure; common style-level problems; advanced writing-style concepts; editing in document development, publication, and use; editing technical reports; and writing a technical document.

Prerequisite(s): WRT 101 or 107 with a grade of C or better.

Offered: May not be offered this year, check class schedule.

WRT 140A Writing and Editing Technical Communications: Module A

1 cr. hrs. 1 periods (1 lec.)

Introduction to concepts and techniques for writing and editing technical documents at the beginning level. Includes sentence structure and style; common style-level problems; advanced writing-style concepts; editing in document development, publication, and use; and editing technical reports.

Prerequisite(s): WRT 101 or 107 with a grade of C or better or required score on writing assessment test.

Information: WRT 140A, 140B and 140C together constitute WRT 140. A student may concurrently enroll in WRT 140A, 140B and 140C.

Offered: Fall, Spring.

WRT 140B Writing and Editing Technical Communications: Module B

1 cr. hrs. 1 periods (1 lec.)

Introduction to concepts and techniques for writing and editing technical documents at the intermediate level. Includes common grammar, usage, and punctuation rules; common style-level problems; writing-style concepts; editing in document development, publication, and use; and editing

Prerequisite(s): WRT 140A with a grade of C or better or concurrent enrollment in WRT 140A and 140C.

Information: WRT 140A, 140B and 140C together constitute WRT 140. A student may concurrently enroll in WRT 140A, 140B and 140C.

Offered: Fall, Spring.

WRT 140C Writing and Editing Technical Communications: Module C

1 cr. hrs. 1 periods (1 lec.)

Introduction to concepts and techniques for writing and editing technical documents at the advanced level. Includes common grammar, usage, and punctuation rules; paragraph structure; common style-level problems; writing-style concepts; editing in document development, publication, and use; editing technical reports; and writing a technical document.

Prerequisite(s): WRT 140B with a grade of C or better or concurrent enrollment in WRT 140A and 140B.

Information: WRT 140A, 140B and 140C together constitute WRT 140. A student may concurrently enroll in WRT 140A, 140B and 140C.

Offered: Fall, Spring.

WRT 154 Career Communications

3 cr. hrs. 3 periods (3 lec.)

Job related writing skills for use in career communications. Includes writing for audiences and situations at the beginning and intermediate levels, applying business writing and organization conventions, completing job-related forms at the beginning and intermediate levels, and writing resumes.

Prerequisite(s): WRT 090 or 096 with a C or better or required score on writing assessment test.

Information: WRT 154A, 154B, and 154C together constitute WRT 154. A student may concurrently enroll in WRT 154A, 154B, and 154C, but courses must be completed sequentially.

Offered: May not be offered this year, check class schedule.

WRT 154A Career Communication: Job Related Writing Principles and Skills

1 cr. hrs. 1 periods (1 lec.)

Job-related writing principles and skills. Includes writing for audiences and situations at the beginning level, and applying business writing and organization conventions.

Prerequisite(s): WRT 090 or 096 with a C or better or required score on writing assessment test.

Information: WRT 154A, 154B, and 154C together constitute WRT 154. A student may concurrently enroll in WRT 154A, 154B, and 154C, but courses must be completed sequentially.

Offered: Fall, Spring.

WRT 154B Career Communications: Basic Job Related Correspondence

1 cr. hrs. 1 periods (1 lec.)

Writing skills for basic job-related correspondence. Includes completing job-related forms at the beginning level, and writing resumes.

Prerequisite(s): WRT 154A with a C or better.

Information: WRT 154A, 154B, and 154C together constitute WRT 154. A student may concurrently enroll in WRT 154A, 154B, and 154C, but courses must be completed sequentially.

Offered: Fall, Spring.

WRT 154C Career Communications: Basic Job Related Reports

1 cr. hrs. 1 periods (1 lec.)

Writing skills for basic job-related reports. Includes writing for audiences at the intermediate level, and completing job-related forms at the intermediate level.

Prerequisite(s): WRT 154B with a C or better.

Information: WRT 154A, 154B, and 154C together constitute WRT 154. A student may concurrently enroll in WRT 154A, 154B, and 154C, but courses must be completed sequentially.

Offered: Fall, Spring.

WRT 162 Literary Magazine Workshop

3 cr. hrs. 3 periods (3 lec.)

Creative magazine publication. Includes review of college literary magazines, critical review, magazine design and editing, magazine production techniques, as well as printing and distribution.

Information: May be taken two times for a maximum of six credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Spring.

WRT 196 Independent Studies in Writing

1-4 cr. hrs. 3-12 periods (3-12 lab)

Independent projects in writing to be arranged with the instructor.

Information: May be taken four times for a maximum of sixteen credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

WRT 205 Introduction to Poetry Writing

3 cr. hrs. 3 periods (3 lec.)

Writing contemporary poetry. Includes poetry writing techniques, evaluation and critical response to poems, and original writing.

Prerequisite(s): WRT 102 or 108 with a C or better.

Offered: Fall, Spring.

WRT 206 Short Story Writing

3 cr. hrs. 3 periods (3 lec.)

Short fiction writing. Includes fiction writing techniques, critical responses to fiction, and original writing.

Prerequisite(s): WRT 102 or 108 with a C or better.

Offered: Fall, Spring.

WRT 207 Creative Nonfiction

3 cr. hrs. 3 periods (3 lec.)

Creative nonfiction writing. Includes techniques of creative nonfiction writing, original writing, and critical responses to nonfiction.

Prerequisite(s): WRT 102 with a grade of C or better.

Information: Consent of instructor is required to enroll in this course.

Offered: Fall.

WRT 215 Advanced Poetry Writing

3 cr. hrs. 3 periods (3 lec.)

Advanced poetry writing workshop. Includes continued focus on techniques of writing, evaluation and critical responses to poetry, and original writing. Also includes more intensive study of contemporary poets and poetry.

Prerequisite(s): WRT 125 or 205 with a C or better.

Information: Consent of instructor is required to enroll in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

WRT 216 Advanced Fiction Writing

3 cr. hrs. 3 periods (3 lec.)

Advanced techniques of fiction writing. Includes advanced techniques of fiction writing, original writing, and critical response to fiction. Also includes preparing manuscripts for publication.

Prerequisite(s): WRT 206 with a C or better.

Information: Consent of instructor is required to enroll in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

WRT 217 Advanced Creative Nonfiction

3 cr. hrs. 3 periods (3 lec.)

Advanced techniques of creative nonfiction writing. Includes advanced original writing, advanced critical responses to nonfiction, and marketing techniques.

Prerequisite(s): WRT 207 with a grade of C or better.

Information: Consent of instructor is required to enroll in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: Fall.

WRT 226 Special Projects in Fiction

3 cr. hrs. 3 periods (3 lec.)

Advanced fiction writing for book-length projects. Includes techniques for book-length fiction writing, original writing and/or revision process, critical responses to fiction, and marketing and publishing of fiction books.

Prerequisite(s): WRT 216 with a C or better.

Information: Consent of instructor is required to enroll in this course.

Information: May be taken four times for a maximum of twelve credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.

WRT 254 Advanced Professional Communications

3 cr. hrs. 3 periods (3 lec.)

Techniques of writing for scientific, technical and other professional occupations. Includes writing long and short reports, researching and writing about a topic, presentations, and use of appropriate style.

Prerequisite(s): WRT 102 or 108 with a C or better.

Information: WRT 254A, 254B, and 254C together constitute WRT 254.

Offered: May not be offered this year, check class schedule.

WRT 254A Advanced Professional Communications: Module A

1 cr. hrs. 1 periods (1 lec.)

Techniques of writing for scientific, technical, and other professional occupations. Includes writing long and short reports at a beginning level and researching and writing about a topic at a beginning level.

Prerequisite(s): WRT 102 or 108 with a C or better.

Information: WRT 254A, 254B, and 254C together constitute WRT 254. A student may concurrently enroll in WRT 254A, 254B, and 254C.

Offered: Fall, Spring.

WRT 254B Advanced Professional Communications: Module B

1 cr. hrs. 1 periods (1 lec.)

Techniques of writing for scientific, technical, and other professional occupations. Includes writing long and short reports at an intermediate level and researching and writing about a topic at an intermediate level.

Prerequisite(s): WRT 254A with a C or better or concurrent enrollment in WRT 254A and/or 254C.

Information: WRT 254A, 254B, and 254C together constitute WRT 254. A student may concurrently enroll in WRT 254A, 254B, and 254C.

Offered: Fall, Spring.

WRT 254C Advanced Professional Communications: Module C

1 cr. hrs. 1 periods (1 lec.)

Techniques of writing for scientific, technical, and other professional occupations. Includes researching and writing about a topic at an advanced level and presentations.

Prerequisite(s): WRT 254B with a C or better or concurrent enrollment in WRT 254A and/or 254B.

Information: WRT 254A, 254B, and 254C together constitute WRT 254. A student may concurrently enroll in WRT 254A, 254B, and 254C.

Offered: Fall, Spring.

WRT 285 Pima Writers' Workshop

2 cr. hrs. 2 periods (2 lec.)

Writing of fiction, nonfiction, poetry, and stories for children. Includes techniques of writing, publishing trends and approaches, and criteria for evaluating writing. Also includes the opportunity for participants to have their writing critiqued and presentations by professional authors, editors, and agents.

Information: May be taken five times for a maximum of ten credit hours. If this course is repeated, see a financial aid or Veterans Affairs advisor to determine funding eligibility.

Offered: May not be offered this year, check class schedule.