

Program/Course Abbreviations

ABF	AUTOMOTIVE COLLISION AND REFINISHING TECHNICIAN	HEQ	DIESEL/HEAVY DUTY EQUIPMENT
ACCT	ACCOUNTING	HIS	HEARING INSTRUMENT SPECIALIST
AGGEN	AGRICULTURE, GENERAL	HIST	HISTORY
AGHRT	AGRICULTURE/HORTICULTURE	HIT	HEALTH INFORMATION TECHNOLOGY
AIRC	HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION	HLTH	HEALTH
AIRSC	AVIATION/AIRWAY SCIENCE	HM	HOTEL AND RESTAURANT MANAGEMENT
ANTH	ANTHROPOLOGY	HRC	HEALTH RECORD CLERK
APLED	APPLIED EDUCATION	HS	HUMAN SERVICES
AQUAT	AQUATICS	HSEAR	INTERPRETER TRAINING PROGRAM/DEAFNESS
ARCFT	AVIATION MAINTENANCE TECHNOLOGY	HSGER	GERONTOLOGY PARAPROFESSIONAL
ARCHT	ARCHITECTURAL TECHNOLOGY	HSSOC	SOCIAL SERVICES
ART	ART	HSSUB	CHEMICAL DEPENDENCY PROFESSIONAL STUDIES
ASL	AMERICAN SIGN LANGUAGE	HUC	HEALTH UNIT COORDINATOR
ASTR	ASTRONOMY	HUM	HUMANITIES
AUDIO	AUDIO TECHNOLOGY	IBE	INTEGRATED BUSINESS AND ENTREPRENEURSHIP PROGRAM
AUTMT	AUTOMOTIVE MACHINIST	ICT	INVASIVE CARDIOVASCULAR TECHNOLOGY
AUTO	AUTOMOTIVE TECHNOLOGY	INTDS	INTERIOR DESIGN
BAK	BAKING: PROFESSIONAL PASTRIES AND SPECIALTY CAKES	IS	COMPUTING-INFORMATION SYSTEMS
BANK	FINANCIAL SERVICES/TELLER	ISFTY	INDUSTRIAL FIRST AID
BIOEQ	BIOMEDICAL EQUIPMENT TECHNICIAN	ITP	INTERPRETER TRAINING PROGRAM
BIOL	BIOLOGY	JAPN	JAPANESE
BIOTC	BIOTECHNOLOGY	JOURN	JOURNALISM
BOT	BOTANY	LA	PARALEGAL
BT	BUSINESS TECHNOLOGY	LIFE	EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC)
BUS	BUSINESS	LMLIB	LIBRARY AND INFORMATION SERVICES
CAD	CAD COMPUTER AIDED DESIGN AND DRAFTING	LSEC	LEGAL ADMINISTRATIVE ASSISTANT
CAPPS	COMPUTING-COMPUTER APPLICATIONS	MA	MEDICAL ASSISTANT
CARP	CARPENTRY AND CABINETRY	MACH	MACHINIST/CNC TECHNOLOGY
CATT	COMPUTER APPLICATION TECHNOLOGY TRAINING	MASS	MASSAGE THERAPY
CET	CIVIL ENGINEERING TECHNOLOGY	MATH	MATHEMATICS
CHEM	CHEMISTRY	MET	MECHANICAL ENGINEERING TECHNOLOGY
CHIN	CHINESE	MILSC	MILITARY SCIENCE
CIS	COMPUTER INFORMATION SYSTEMS	MMGT	MANAGEMENT
CJ	CRIMINAL JUSTICE	MSEC	MEDICAL OFFICE SPECIALIST
CMST	COMMUNICATION STUDIES	MUSC	MUSIC
COOP	COOPERATIVE EDUCATION	NATRS	NATURAL RESOURCE MANAGEMENT
COS	COSMETOLOGY	NCT	NONINVASIVE CARDIOVASCULAR TECHNOLOGY
CRMGT	CREDIT AND FINANCIAL MANAGEMENT	NURS	NURSING PROGRAM (R.N., L.P.N.)
CS	COMPUTING-COMPUTER SCIENCE	NUTRI	NUTRITION
CUL	CULINARY ARTS	OCEA	OCEANOGRAPHY
DENT	DENTAL ASSISTING	OR-PR	ORTHOTIC-PROSTHETIC TECHNICIAN
DRMA	DRAMA	PALEO	PALEONTOLOGY
ECED	EARLY CHILDHOOD EDUCATION	PE	PHYSICAL EDUCATION
ECHO	ECHOCARDIOGRAPHY	PHARM	PHARMACY TECHNICIAN
ECON	ECONOMICS	PHIL	PHILOSOPHY
EDUC	EDUCATION/EDUCATION PARAPROFESSIONAL, SPECIAL EDUCATION	PHOTO	PHOTOGRAPHY
ELECT	ELECTRONICS ENGINEERING TECHNICIAN	PHYS	PHYSICS
ELMT	ELECTRICAL MAINTENANCE AND AUTOMATION	POLS	POLITICAL SCIENCE
ENGL	ENGLISH	PSYC	PSYCHOLOGY
ENGR	ENGINEERING	PTA	PHYSICAL THERAPIST ASSISTANT
ENVS	ENVIRONMENTAL SCIENCES	RAD	RADIOLOGY TECHNOLOGY
FLPT	HYDRAULIC AND PNEUMATIC AUTOMATION TECHNICIAN	RT	RESPIRATORY CARE
FMDSE	FASHION MERCHANDISING	RUSS	RUSSIAN
FMT	HEALTH/FITNESS TECHNICIAN	SAL	SALISH
FOD	FIRE OFFICER	SBM	SMALL BUSINESS MANAGEMENT
FRCH	FRENCH	SOC	SOCIOLOGY
FS	FIRE SCIENCE TECHNOLOGY	SONO	DIAGNOSTIC MEDICAL SONOGRAPHY
FSCI	FUNDAMENTALS OF SCIENCE	SPAN	SPANISH
GENST	GENERAL STUDIES	SURG	SURGICAL TECHNOLOGY
GEOG	GEOGRAPHY	VASC	VASCULAR TECHNOLOGY
GEOL	GEOLOGY	VCT	VISION CARE
GERM	GERMAN	WATER	WATER RESOURCES TECHNOLOGY
GOVT	GOVERNMENT, STUDENT	WELD	WELDING AND FABRICATION
GRDSN	GRAPHIC DESIGN	WS	WOMENS STUDIES
GUID	GUIDANCE	ZOOL	ZOOLOGY
HED	HEALTH EDUCATION		

Course Descriptions

ACCOUNTING

ACCT 103 – Fundamental Bookkeeping Procedures (3 cr)

This course is an introduction to fundamental bookkeeping for a sole proprietorship. It focuses on learning how and when to record transactions and how and when to prepare financial statements. (SFCC)

ACCT 112 – Excel for Accounting (3 cr)

This course utilizes Excel to solve accounting problems and aid decision making. Areas covered include projection, cash flows, debt management, planning/budgeting and graphical presentation of accounting data. Prerequisite: ACCT 103, 104, CAPPs 112 or permission of instructor. (SFCC)

ACCT 114 – Access for Accounting (2 cr)

This course develops an understanding of the theory and practice of relational database management systems in accounting settings. The course enables students to build accounting system elements for three main accounting transaction cycles: The revenue cycle, the purchase cycle and the payroll cycle. Prerequisite: ACCT 103, CAPPs 114 or permission of instructor. (SFCC)

ACCT 121 – Payroll Procedures (3 cr)

This course enables students to properly prepare, file and report quarterly payroll taxes; to prepare all necessary journal entries for payroll expenses; and to prepare all necessary end-of-year reports for payroll. Prerequisite: ACCT 103, 115 or permission of instructor. (SFCC)

ACCT 122 – Business Tax Accounting (1 cr)

This course enables students to understand and account for the additional taxes (other than income taxes) paid by business in Washington state, Spokane County and the City of Spokane. Prerequisite: ACCT 103 or permission of instructor. (SFCC)

ACCT 141 – QuickBooks (1-5 cr)

This course offers a practical approach to computerized accounting using QuickBooks Pro. Students are exposed to basic setup and entry of daily accounting transactions and learn to manage revenue and expense accounts, payroll, inventory, bank reconciliation, and year-end procedures. This course does not fulfill the requirements for students majoring in accounting. Prerequisite: SCC: ACCT 151 or higher, or permission of instructor. SFCC: ACCT& 201, ACCT 151 or higher, or permission of instructor. (SCC, SFCC)

ACCT 142 – Advanced QuickBooks (1-5 cr)

This course offers a practical approach to computerized accounting using QuickBooks Pro. Students are exposed to advanced setup for service and merchandising companies. Processing quarterly payroll including, preparation of quarterly tax reports, tax transmittals and W2 forms are addressed. This course does not fulfill requirements for students majoring in accounting. Prerequisite: ACCT 141 or permission of instructor. (SCC, SFCC, IEL)

ACCT 151 – College Accounting I (5 cr)

Students learn the basic concepts of accounting for office, sales and small business personnel. The basic accounting cycle, use of general journals, worksheets, adjusting and closing entries, and complete financial statement preparation are emphasized. Payroll processing and employer payroll tax calculations, and reporting also are covered. These courses must be taken in sequence. These courses do not fulfill requirements for students majoring in accounting. (SCC, SFCC)

ACCT 152 – College Accounting II (5 cr)

Students learn the basic concepts of accounting for office, sales and small business personnel. The basic accounting cycle, use of general journals, worksheets, adjusting and closing entries, and complete financial statement preparation are emphasized. Payroll processing and employer payroll tax calculations, and reporting also are covered. These courses must be taken in sequence. These courses do not fulfill requirements for students majoring in accounting. (SCC, SFCC)

ACCT 161 – Payroll Procedures (4 cr)

This course enables students to properly prepare, file and report quarterly payroll taxes; prepare all necessary journal entries for payroll expenses; and prepare all essential end-of-the-year reports for payroll. Prerequisite: SCC: ACCT 151 or permission of instructor and concurrent enrollment in ACCT 162. SFCC: ACCT 103, 115 or permission of instructor and concurrent enrollment in ACCT 162. (SCC, SFCC)

ACCT 162 – Business Tax Accounting (1 cr)

This course enables students to understand and account for the additional taxes (other than income taxes) paid by businesses in Washington State, Spokane County and the City of Spokane. Prerequisite: SCC: ACCT 151 or permission of instructor and concurrent enrollment in ACCT 161. SFCC: ACCT 103 or permission of instructor and concurrent enrollment in ACCT 161. (SCC, SFCC)

ACCT& 201 – Prin of Accounting I (5 cr)

An introduction to the fundamentals of accounting, with application to sole proprietorship, partnership and corporate forms of business organization. Must be taken in sequence. (SCC, SFCC)

ACCT& 202 – Prin of Accounting II (5 cr)

An introduction to the fundamentals of accounting, with application to sole proprietorship, partnership and corporate forms of business organization. Must be taken in sequence. Prerequisite: A grade of 2.0 or better in ACCT& 201 or permission of instructor. (SCC, SFCC)

ACCT& 203 – Prin of Accounting III (5 cr)

Students learn presentation and interpretation of financial data for managerial use. Applications of accounting output to managerial control and planning are emphasized. Prerequisite: For SCC — ACCT& 201 or permission of instructor. For SFCC — ACCT& 202 or permission of instructor. (SCC, SFCC)

ACCT 204 – Accounting Integration (5 cr)

Students develop an understanding of the accounting information system, sales and acquisition cycles, internal controls, accounting fraud, accounting for not-for-profit organizations as well as federal taxation and tax return preparation. Prerequisite: ACCT& 201, ACCT 151 or permission of instructor. (SCC)

ACCT 212 – Accounting Applications and Analysis (5 cr)

An advanced course with emphasis on applications and analysis using accounting theories and concepts studied in principles and theory courses. Areas covered include funds flow analysis, tax elections, book-tax differences, and statement preparation directly from source documents and incomplete records. Prerequisite: ACCT 151 or ACCT& 202. (SCC)

ACCT 218 – Accounting Analysis Simulation (1 cr)

Students participate in an accounting-oriented computerized business simulation. Grading option: Pass/fail. Prerequisite: Concurrent enrollment in ACCT 212 or permission of instructor. (SCC)

ACCT 219 – Payroll and Business Taxes (5 cr)

This course is designed to give students a thorough understanding of the most common taxes (other than income taxes) paid by businesses in the states of Idaho and Washington, Spokane County and the City of Spokane. Emphasis will be placed on manual and computerized payroll preparation, understanding the difference between an employee and an independent contractor, and determining when it's necessary to file 1099 forms and the Combined Excise Tax Return form. Current rates and forms will be used. Speakers from the various tax agencies will discuss background, current conditions and benefits relating to their particular tax programs. Prerequisite: ACCT& 201 or ACCT. (SFCC)

ACCT 220 – Federal Tax Practice (5 cr)

Federal taxation and practice covering the historical background of federal taxation in the U.S.; an overview of the internal revenue code; and detailed analysis and practice in areas of gross income, exclusions, tax accounting, sales, and exchange of property and business deductions will be addressed. (SFCC)

ACCT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

ACCT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

ACCT 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

AGRICULTURE, GENERAL

AGGEN 150 – Commercial Driver Training (1 cr)

This course provides training to obtain a class A commercial driver's license in the state of Washington with endorsements for tank vehicles and hazardous materials. The course will not provide instruction pertaining to the transportation of passengers (passenger/bus endorsements). (SCC)

AGGEN 151 – Shop Skills (4 cr)

This course offers practical knowledge in a wide range of basic mechanical skills found in various agricultural industries. Safe use of hand and power tools, carpentry and woodworking, plumbing, electricity, concrete and masonry, and basic metalworking are emphasized. (SCC)

AGGEN 152 – Arc Welding (4 cr)

This course offers theory and practical applications using arc welding equipment to perform common maintenance and repairs that are encountered in agricultural occupations. Welding mild steel in flat, horizontal, vertical and overhead positions is emphasized. Students learn to select proper tools and equipment. Correct safety practices are stressed. (SCC)

AGGEN 153 – Oxy-acetylene Welding (4 cr)

This course offers theory and practical applications using oxy-acetylene welding equipment to perform common maintenance and repairs that are encountered in agricultural occupations. Students learn to select and use oxy-acetylene welding and cutting equipment. (SCC)

AGGEN 154 – Small Engine Operation and Maintenance (4 cr)

This course offers theory and practical applications of two- and four-cycle one-cylinder gas engines. The operation, care, maintenance and adjustment of engines common to agricultural applications are emphasized. (SCC)

AGGEN 156 – Equipment Operation and Maintenance (5 cr)

Safety, operation and preventive maintenance of engines and equipment used in agricultural occupations are emphasized. Theory and operation principles of two- and four-cycle diesel engines are included. (SCC)

AGGEN 157 – Arc Welding (1 cr)

Theory and practical applications in the selection and use of arc welding equipment are offered in the course. Performing basic maintenance, repair and construction in various mechanical fields are emphasized. (SCC)

AGGEN 158 – Oxy-acetylene Welding (1 cr)

Theory and practical applications using oxy-acetylene welding and cutting equipment to perform common maintenance, repair and construction jobs that are encountered in a variety of mechanical fields are introduced. (SCC)

AGGEN 161 – Advanced Maintenance Welding (1-4 cr)

This course introduces students to specific welding-related construction and repair jobs that are encountered in the industry. A menu concept is provided for individual programs to select the competencies required for their individual needs. The following competencies listed may include, but are not limited to, metal identification, specialized oxy-acetylene cutting, hard-facing, soldering and repairing metal parts utilizing a variety of welding processes. Prerequisite: AGGEN 152, 153 or permission of instructor. (SCC)

AGGEN 162 – Yard Art Welding (1 cr)

This course introduces the student to different forms of cutting and welding that can be used to create artistic forms. Students use new and discarded materials and cutting and welding forms which include, but are not limited to oxy/acetylene welding and cutting, MIG welding, brazing, soldering, and plasma cutting. (SCC)

AGRICULTURE/HORTICULTURE

AGHRT 100 – Agricultural Plant Biology (5 cr)

This course introduces nonscience majors to the principles of plant biology. Plant diversity, anatomy, morphology, and growth and development are emphasized. (SCC)

AGHRT 101 – Basic Crop Science (5 cr)

This course introduces students to the basic principles of agronomy and the science which underlies those principles. Emphasis is placed on crop management practices such as tillage methods, variety selection, and monitoring of crop growth and development. Course objectives are based on the requirements of Certified Crop Advisor exam. (SCC)

AGHRT 102 – Pesticides and Fertilizer Application Equipment (4 cr)

This course emphasizes the practical application of pesticides and includes discussion and use of sprayers and spreaders. Sprayer calibration is taught. Pesticide chemistry, selectivity and mode of action are introduced. Students prepare for the pesticide application exam. (SCC)

AGHRT 103 – Introduction to Greenhouse and Nursery Production (3 cr)

Students are introduced to greenhouse management and production. Variable physical conditions found in greenhouse environments and how they relate to plant growth and development are emphasized. Principles of greenhouse construction and operation also are covered. (SCC)

AGHRT 104 – Principles of Pest Management (5 cr)

Students are introduced to diseases, insects and weeds that pose problems to agricultural products in both the growth and storage stage. Options available to reduce or eliminate these problems for specific pest groups are discussed. Management, cultural practices, biological and natural controls, barriers, legislative controls and principles of chemical control are emphasized. (SCC)

AGHRT 105 – Horticultural Retail Sales (3 cr)

This course provides hands-on experience in the operation of the on-campus retail garden center, including operations, marketing and customer relations. (SCC)

AGHRT 106 – Greenhouse and Nursery Management I (5 cr)

This is the first in a series of three classes where students become engaged in the scheduling and production of flowering, tropical and bedding plants. Environmental factors affecting plant growth, manipulating the greenhouse environment, soil and water testing, fall propagation and nursery operations are emphasized. (SCC)

AGHRT 107 – Greenhouse and Nursery Management II (5 cr)

This class is the second in a series of three where students gain hands-on experience in scheduling and production of flowering, tropical and bedding plants. Greenhouse operations, site selection, greenhouse and nursery layout, heating and cooling, seed propagation, winter nursery operations, and bedding plant seed scheduling are emphasized. Prerequisite: AGHRT 106 or permission of instructor. (SCC)

AGHRT 108 – Greenhouse and Nursery Management III (4 cr)

This class is the third in a series of three where students become engaged in the scheduling and production of flowering, tropical and bedding plants. Plug production, production planning, determining cost and profit, pest and disease management, and spring nursery layout and operations are emphasized. Prerequisite: AGHRT 107 or permission of instructor. (SCC)

AGHRT 110 – Fall Landscape Plant Materials (5 cr)

Students learn to identify fall landscape plants and their use in the Inland Northwest. Terminology of woody plant parts and plant nomenclature is emphasized. (SCC)

AGHRT 111 – House Plants (5 cr)

This course introduces students to plant material, cultural requirements and how to properly select plants found in floral shops, mass market outlets and interior plantscapes. Indoor environment also is studied. (SCC)

AGHRT 112 – Spring Landscape Plant Materials (5 cr)

Students learn to identify spring landscape plants and their use in the Inland Northwest. Conifers, broadleaf evergreens, and spring blooming trees and shrubs are emphasized. (SCC)

AGHRT 114 – Landscape Maintenance (3 cr)

This course covers major landscape maintenance practices including pruning, planting, fertilizer and pesticide application, landscape equipment operation, and maintenance of irrigation systems. Relevant business practices such as bidding and scheduling also are presented. (SCC)

AGHRT 115 – Pruning (3 cr)

This course introduces students to the art and science of pruning ornamental trees and shrubs using a combination of lectures and hands-on field experience. (SCC)

AGHRT 116 – Green Industry Business Management (5 cr)

This practical course introduces basic principles of management found in the agriculture/horticulture industry. Analyzing situations and establishing appropriate procedures are emphasized. Topics presented include types of ownership, basic financial management, personnel management and government agency functions. (SCC)

AGHRT 119 – Basic Soils (5 cr)

Students are introduced to the various properties of soils as they relate to plant growth. Mineral makeup, organic matter, physical properties, water retention, aeration, temperature, nutrient holding capacity, and how these properties contribute to soil development are emphasized. (SCC)

AGHRT 120 – Introduction to Animal Science (5 cr)

An introduction to animal science relating to beef, sheep and swine production with emphasis on livestock safety and the environment. Topics to be presented includes livestock breeds, reproduction, digestions, genetics, meats, marketing and breeding systems. (SCC)

AGHRT 124 – Agriculture Communication Skills (5 cr)

A practical course designed to give the student confidence through the development of human relations and communication skills, both verbal and written. Personal development is gained through an interaction between students and an understanding of course topics. Areas of emphasis includes developing a personal resume, writing letters of application and inquiry, and applying and interviewing for a job. Emphasis also is placed on developing a positive attitude, salesmanship and public relations skills. (SCC)

AGHRT 125 – Applied Agricultural Mathematics (5 cr)

Students are introduced to agriculturally oriented mathematical problems that are realistic, practical and thought-provoking. Agricultural production, management, marketing, horticulture and mechanization are emphasized. Students review basic mathematical concepts; calculations are accomplished with the aid of a calculator. (SCC)

AGHRT 126 – Computer Essentials for Environmental Sciences (2-5 cr)

This nonprogramming course introduces students to the use of computers as a tool for evaluating programs in agriculture, horticulture and related fields. Students are familiarized with key software through actual applications to problems in their chosen field of study. Windows, word processing, spreadsheets, databases, graphics and telecommunications are emphasized. (SCC)

AGHRT 131 – Horticultural Retail Sales (3 cr)

This course provides hands-on experience in the operation of the on-campus retail garden center, including operations, marketing and customer relations. (SCC)

AGHRT 132 – Horticultural Retail Sales (3 cr)

This course provides hands-on experience in the operation of the on-campus retail garden center, including operations, marketing and customer relations. (SCC)

AGHRT 150 – Agriculture/Horticulture Orientation (1 cr)

An orientation course for all students entering any of the agribusiness, production agriculture or horticulture options. Each option is explored, including requirements, job opportunities and working conditions. Special emphasis is placed on registration procedures. Grading option: Pass/fail. (SCC)

AGHRT 171 – Agricultural Leadership Training (1 cr)

This course orients students with the agricultural program, the campus and community. Study skills are presented on topics such as study techniques, time management, communication and leadership styles. Leadership skills are encouraged through participation in a variety of department, club and civic activities. (SCC)

AGHRT 172 – Agricultural Leadership Training (1 cr)

This course orients students with the agricultural program, the campus and community. Study skills are presented on topics such as study techniques, time management, communication and leadership styles. Leadership skills are encouraged through participation in a variety of department, club and civic activities. (SCC)

AGHRT 173 – Agricultural Leadership Training (1 cr)

This course orients students with the agricultural program, the campus and community. Study skills are presented on topics such as study techniques, time management, communication and leadership styles. Leadership skills are encouraged through participation in a variety of department, club and civic activities. (SCC)

AGHRT 181 – Agricultural Leadership Training (1 cr)

This course orients students with the agricultural program, the campus and community. Study skills are presented on topics such as study techniques, time management, communication and leadership styles. Leadership skills are encouraged through participation in a variety of department, club and civic activities. (SCC)

AGHRT 182 – Agricultural Leadership Training (1 cr)

This course orients students with the agricultural program, the campus and community. Study skills are presented on topics such as study techniques, time management, communication and leadership styles. Leadership skills are encouraged through participation in a variety of department, club and civic activities. (SCC)

AGHRT 183 – Agricultural Leadership Training (1 cr)

This course orients students with the agricultural program, the campus and community. Study skills are presented on topics such as study techniques, time management, communication and leadership styles. Leadership skills are encouraged through participation in a variety of department, club and civic activities. (SCC)

AGHRT 195 – Practicum (3 cr)

This course offers practical lab experience involving typical problems that arise in the various agricultural/horticultural fields such as florist, greenhouse/nursery and landscape/turf. The areas of emphasis vary depending on the students' chosen program of study. (SCC)

AGHRT 201 – Landscape Installation (5 cr)

This course offers hands-on experience in installing landscapes using live projects on and off campus. Students develop competencies to become certified landscape technicians. Prerequisite: Concurrent enrollment in AGHRT 206. (SCC)

AGHRT 202 – Principles of Irrigation (5 cr)

This course introduces residential, commercial and agricultural irrigation principles. Sprinkler irrigation methods and designs, and performance characteristics of sprinkler irrigation equipment are emphasized. Prerequisite: AGHRT 125 or permission of instructor. (SCC)

AGHRT 203 – Agriculture/Horticulture Marketing (5 cr)

This course presents the marketing of agricultural and horticultural crops and products. Direct marketing and value added products are emphasized. Advertising methods, pricing and selling strategies, and the development of marketing plans and break-even charts are introduced. (SCC)

AGHRT 204 – Landscape Design 1 (4 cr)

This course introduces landscape design and graphical techniques used in the landscape design profession. Students use processes and principles to design landscapes. A history of landscape design and how it has influenced the styles of today is presented. Students learn to draw landscape components and complete landscape designs by hand. (SCC)

AGHRT 205 – Landscape Design 2 (4 cr)

This course introduces advanced landscape design principles. Students use processes and principles to design several partial and whole landscapes using hand-drawn designs as well as computer aided drafting (CAD software). Prerequisite: AGHRT 204. (SCC)

AGHRT 206 – Landscape Construction (5 cr)

Students are introduced to the principles and procedures of landscape construction. Estimation, bidding and site preparation, as well as the removal and installation of landscape features such as plant materials, irrigation systems and a variety of hard features. Prerequisite: AGGEN 151 or permission of instructor. (SCC)

AGHRT 208 – Basic Landscape Design Lab (2 cr)

Lab techniques of planting design for media presentations on residential sales are emphasized. Prerequisite: AGHRT 204 or concurrent enrollment. (SCC)

AGHRT 210 – Indoor Plantscaping (3 cr)

A study of the plants used in the interior design of homes, offices and public buildings. Design principles, environmental and cultural needs of plants also are introduced. Course emphasis is on the professional maintenance of indoor plants. (SCC)

AGHRT 211 – Floral Design Techniques (5 cr)

This course introduces students to basic methods and principles of floral design with emphasis on the care and handling of flowers and plants, the use of color in floral arrangements, and the creation of a variety of floral arrangements. (SCC)

AGHRT 212 – Floral Design Applications (5 cr)

This course continues with the concepts introduced in AGHRT 211 emphasizing advanced floral arrangement methods. The study of historical periods of design and their application to contemporary floral design methods is presented. Prerequisite: AGHRT 211 or permission of instructor. (SCC)

AGHRT 213 – Retail Floristry (5 cr)

Students are introduced to the principles of successful florist management. Effective merchandising techniques and the creation of advanced floral arrangements are emphasized. Prerequisite: AGHRT 212 or permission of instructor. (SCC)

AGHRT 218 – Agricultural Marketing (5 cr)

A practical course studying the marketing of agricultural-related products with emphasis on the marketing and merchandising of supplies and services to primary producers and the marketing and merchandising of agricultural products from the primary producer to the end consumer. This study includes marketing terms, principles and costs. The development of a marketing plan and a comparison of the traditional, and as new alternative marketing trends are discussed. (SCC)

AGHRT 219 – Soil Management and Fertility (5 cr)

This course gives students a working knowledge of soil management. Students learn the role of each of the essential elements in plant growth and the deficiency symptoms of each. They also learn how the nutrients are stored in the soil and how they become available to plants. Numerous types of fertilizers and how each is used by plants are introduced. Various agricultural and horticultural soil management practices are discussed as well as how each affects the condition of the soil. Prerequisite: AGHRT 119. (SCC)

See program/course abbreviation key on page 143.

AGHRT 220 – Agricultural Recordkeeping and Analysis (5 cr)

This is an introduction to the methods of keeping and analyzing financial records with emphasis on double-entry accrual accounting. Areas of emphasis includes the application of basic accounting principles, to small businesses in agriculture and horticulture. (SCC)

AGHRT 222 – Livestock Management (5 cr)

An introduction to animal science relating to beef, sheep and swine production with emphasis on livestock safety and the environment. Topics to be presented includes livestock breeds, reproduction, digestion, genetics, meats, marketing and breeding systems. (SCC)

AGHRT 223 – Horse Selection, Health and Management (5 cr)

This course introduces students to the development of the different breeds of horses, functional anatomy, nutrition and feeding, reproduction, horse health, and management. (SCC)

AGHRT 225 – Weed Biology and Control (5 cr)

This course introduces students to the basic principles and economic significance of weed biology, identification and control. Students learn to identify weeds in all stages of growth and the common characteristics of each of the weed families. The principles of weed control using herbicides are emphasized. A weed collection is required. Prerequisite: AGHRT 104 is recommended. (SCC)

AGHRT 226 – Turfgrass Management (5 cr)

This course introduces theory and practical application in landscape management techniques. Grass selection and establishment, soil management, fertilization, irrigation, mowing, pest management and other cultural practices required in the care of home lawns, parks and golf courses are emphasized. Prerequisite: AGHRT 100, 104 or permission of instructor. (SCC)

AGHRT 228 – Arboriculture (5 cr)

This course presents the study of woody urban landscape plant forms including growth, selection, pruning, planting, maintenance and problem solving. (SCC)

AGHRT 229 – Arboriculture Climbing Techniques (3 cr)

This is a practical class to train students in safety, use of equipment and climbing techniques used in the arboriculture industry. Emphasis is on methods appropriate to the rope and saddle technique of tree access. (SCC)

AGHRT 230 – Plant Problem Diagnosis (5 cr)

Students study insects, diseases and environmental factors that adversely affect the health of agricultural and greenhouse crops and landscape plants. Problem diagnosis, identification of causal agent(s), and preparing recommendations for both chemical and cultural controls are emphasized. Prerequisite: AGHRT 104 or permission of instructor. (SCC)

AGHRT 231 – Agricultural Insects and Diseases (5 cr)

Students study insects, bacteria, fungi, viruses and environmental factors that adversely affect the health of agricultural plants. Emphasis in on problem diagnosis, prevention, identification of causal agent(s), and preparing recommendations for both chemical and cultural control. Prerequisite: AGHRT 104 or permission of instructor. (SCC)

AGHRT 232 – Pest Management Project (2 cr)

This is the capstone of the pest management series of courses. Students create a pest management plan for a crop or landscape including a variety of control measures for key pests. Students learn to select control measures based on a number of criteria. Prerequisite: AGHRT 104 is recommended and concurrent enrollment in AGHRT 230. (SCC)

AGHRT 234 – Bidding and Estimating (3 cr)

This course introduces the student to bidding and estimating practices for landscape design, construction, installation, and maintenance. Students learn to account for the numerous factors affecting the cost of these landscape practices. Contracts and risk management are also taught. (SCC)

AGHRT 240 – Practicum - Floral Design Projects 1 (3 cr)

This course provides practical lab experience involving advanced floral design techniques and floral shop management. Prerequisite: AGHRT 213. (SCC)

AGHRT 241 – Practicum - Floral Design Projects 2 (3 cr)

This course provides practical lab experience involving advanced floral design techniques and floral shop management. Prerequisite: AGHRT 213. (SCC)

AGHRT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

AGHRT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

AGHRT 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

AGHRT 296 – Special Problems (1-3 cr)

This course is designed to meet specific skill levels for individual students. Course content varies depending on areas of special interest and the number of credits chosen. Established guidelines allow students to research special areas of interest. Prerequisite: Permission of instructor. (SCC)

AGHRT 297 – Special Problems (1-3 cr)

This course is designed to meet specific skill levels for individual students. Course content varies depending on areas of special interest and the number of credits chosen. Established guidelines allow students to research special areas of interest. Prerequisite: Permission of instructor. (SCC)

AMERICAN SIGN LANGUAGE**ASL& 121 – Am Sign Language I (5 cr)**

First course in a series of three American Sign Language (ASL) courses that are prerequisites for the interpreter training program or can be taken for modern language credit. ASL I introduces at least 360 vocabulary words, receptive and expressive skills, deaf culture, and grammatical structure of ASL. (SCC, SFCC)

ASL& 122 – Am Sign Language II (5 cr)

Second course in a three-course series of American Sign Language (ASL). All are prerequisites to enter the interpreter training program or can be taken for modern language credit. This course I adds vocabulary development of at least 450 signs and their respective glosses, receptive and expressive skills, and enhance use and understanding of grammatical structure of ASL. Various aspects of deaf culture is discussed. Prerequisite: ASL& 121. (SCC, SFCC)

ASL& 123 – Am Sign Language III (5 cr)

This is the third course in a three- course series of American Sign Language (ASL). All are prerequisites to enter the interpreter training program or can be taken for modern language credit. This course increases vocabulary by introducing at least 350 new vocabulary words, advances receptive and expressive skills, enhances use of appropriate grammatical features of ASL and relate cultural aspects of the deaf community. Prerequisite: ASL& 121, 122. (SCC, SFCC)

ASL& 221 – American Sign Language IV (5 cr)

This is the fourth course in a series of 6 American Sign Language courses. This course emphasizes expressive and receptive communication skills involving elementary school coursework and accompanying vocabulary of at least 350 words; demand-control schema and aspects of ASL grammatical features. Information about Roles and Responsibilities of educational interpreters will be incorporated into each task. Prerequisite: ASL& 123 and concurrent enrollment in ITP 231, 241. (SFCC)

ASL& 222 – American Sign Language V (5 cr)

This is the fifth course in a series of 6 American Sign Language courses. This course incorporates expressive and receptive communication skills involving middle school subject matter and accompanying vocabulary of at least 400 words; additional information about demand-control schema and aspects of ASL grammatical features. Information about Deaf Culture will be compared to that of the majority hearing culture. Prerequisite: ASL& 221 and concurrent enrollment in ITP 232, 242. (SFCC)

ASL& 223 – American Sign Language VI (5 cr)

This is the sixth course in a series of 6 American Sign Language courses. This course incorporates expressive and receptive communication skills involving high school subject matter and accompanying vocabulary of at least 350 words; comparative information about demand-control schema and aspects of ASL grammatical features. Information about Deaf Culture will be compared to that of the majority hearing culture. Prerequisite: ASL& 222 and concurrent enrollment in ITP 233, 243. (SFCC)

ANTHROPOLOGY**ANTH& 100 – Survey of Anthropology (5 cr)**

Introduction to physical anthropology; the study of evolution, fossil forms and old world archeology. Prerequisite: SFCC required minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ANTH& 206 – Cultural Anthropology (5 cr)

Introduces the student to the concept of culture and the studies of people of the world. This is an introduction to the theories that these studies are based upon and the development of an anthropological perspective of the world and its peoples. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ANTH& 210 – Indians of North America (5 cr)

A descriptive account of the American Indians, confined to the Indians north of Mexico from prehistoric to the reservation period. There is a concentration on the Indians of the Northwest and the Plains Indians, with an emphasis on their social, political and material culture. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

ANTH 221 — Stone Age Survival (5 cr)

A general introduction to primitive technology. The student is given a chance to replicate tools. Explores kinship, ethnobotany and metaphysical positions that were held by prehistoric folks. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

APPLIED EDUCATION**APLED 091 — Success Strategies for Professional/Technical Students (3-4 cr)**

This is an introductory course to the skills needed to succeed in professional/technical programs. Topics include study skills, reading comprehension, listening strategies, learning styles and an introduction to technical writing. Prerequisite: Current enrollment in a professional/technical program or placement on a professional/technical program waiting list. (SCC)

APLED 112 — Applied Mathematics (3-5 cr)

This course is an introduction to mathematical theory and its application to the professional/technical fields. Topics include an overview of general mathematical concepts, geometry, trigonometry and algebra, and how they are successfully utilized in practical situations. (SCC)

APLED 121 — Applied Written Communication (4 cr)

This course is an introduction to written communication skills and their application to vocational and academic studies. Development of writing skills necessary to plan and write technically formatted documents is emphasized. (SCC)

APLED 123 — Leadership Skills for Business and Industry (3-4 cr)

This course is an introduction to verbal communication and team-building skills necessary for success in business and industry. Methods of improving communication including nonverbal communication and conflict management are emphasized. Verbal presentation strategies are presented. (SCC)

APLED 125 — Employment Preparation (3 cr)

This course provides advanced communication concepts that focus on resume writing, job interviewing, team building, problem solving and presentational skills. Course content varies depending upon the needs of individual departments. Prerequisite: APLED 121 and 5th or 6th quarter standing. (SCC)

AQUATICS**AQUAT 101 — Beginning Swimming (1 cr)**

This course introduces water safety techniques, development of confidence, floating and elementary strokes with special attention to form. Upon passage of skill levels, students are issued the appropriate Red Cross cards. (SCC)

AQUAT 110 — Intermediate Swimming (1 cr)

Students learn and perfect five basic strokes. Five advanced strokes are introduced, and basic rescue and water safety are emphasized. American Red Cross cards are awarded to those who successfully complete the course. Prerequisite: American Red Cross beginner's skills or permission of instructor. (SCC)

AQUAT 115 — Swimming (1 cr)

Students learn to improve skills at their own rate. Muscular and cardio-respiratory function through stroke development and general swimming activity are emphasized. (SCC)

AQUAT 132 — Springboard Diving - Beginning (1 cr)

This course introduces the skills and techniques of springboard diving. Approaches, take offs and entries for five basic dives are emphasized. (SCC)

AQUAT 136 — Aquatic Fitness (1 cr)

This progressive program of simple exercises in and out of the water develops general body conditioning and improves efficiency of the heart, lungs and circulation. Nonswimmers, as well as swimmers, benefit from this course. (SCC)

AQUAT 224 — Water Safety Instructor (2 cr)

This course covers swimming, life saving skills and fundamentals necessary to achieve W.S.I. certification. Students prepare for employment as teachers or administrators of aquatic programs. Prerequisite: Current lifeguard training certification; 17 years of age. (SCC)

AQUAT 230 — Lifeguard Training (2 cr)

Proper guidelines for lifeguarding in pools are covered in this course. Standard first aid and CPR for the professional rescuer are included, as is American Red Cross certification. Prerequisite: Intermediate swimming level; 15 years of age. (SCC)

AQUAT 232 — Springboard Diving - Advanced (1 cr)

This course introduces the skills and techniques of springboard diving. Approaches, take offs and entries for five basic dives are emphasized. (SCC)

ARCHITECTURAL TECHNOLOGY**ARCHT 112 — Introduction to Architectural Drafting (7 cr)**

This course includes instruction in the elements of floor plans and elevation development for inclusion in, and development of, a set of working drawings for a small residential project. Emphasis is placed on line construction, line quality and lettering. (SCC)

ARCHT 114 — Architectural Math (3 cr)

This course offers a review of basic math related to architectural drafting and math skills required for the construction industry. (SCC)

ARCHT 120 — Residential Architecture Theory (3 cr)

This course introduces students to the architectural drafting profession, including a historical review and basic principles of residential drafting. Career opportunities, comparisons with related professions, options regarding continuing education leading to a bachelor's degree and architectural licensing also are explored. (SCC)

ARCHT 122 — Basic Residential Drafting (5-7 cr)

Practical applications in the development of detailed architectural drawings for multilevel residences, quality lettering, line weight, drafting composition, drawing coordination and accuracy are emphasized. Preparation of a complete set of working drawings for each residence are included. Prerequisite: ARCHT 112 or permission of instructor. (SCC)

ARCHT 124 — Advanced Architectural Math (2 cr)

This course continues the principles introduced in ARCHT 114. Advanced math skills required for the construction industry are emphasized. Prerequisite: ARCHT 114 or permission of instructor. (SCC)

ARCHT 125 — Residential Building Codes (2 cr)

This course introduces uniform building codes as they apply to residential construction projects. An overview of general building codes is presented. (SCC)

ARCHT 126 — Introduction to Computer Assisted Drafting (1-5 cr)

Students are introduced to the basic principles of CAD commands. Practical applications of a drawing software package and the creation of basic working drawings are emphasized. (SCC)

ARCHT 130 — Residential Building Materials (4 cr)

This is an introductory course to the materials commonly used in residential construction. A variety of building components, their applications and limitations, and basic construction methods will be emphasized. (SCC)

ARCHT 132 — Advanced Residential Drafting/CAD (7 cr)

This course provides students with practical applications utilizing all theory and training presented in previous quarters. Students develop complete sets of working drawings from plans of their choice and/or the construction program project house. Prerequisite: ARCHT 122 or permission of instructor. (SCC)

ARCHT 134 — Electrical and Mechanical Systems (3 cr)

This course introduces students to electrical and mechanical systems used on structures. Drafting techniques used to produce electrical and mechanical drawings are presented. Prerequisite: ARCHT 120 or permission of instructor. (SCC)

ARCHT 138 — CAD Applications (5 cr)

This course presents additional computer aided drafting (CAD) techniques. Specific details of stair, fireplace, window, cabinet and deck connections are emphasized. Prerequisite: ARCHT 122. (SCC)

ARCHT 139 — Delineation (4 cr)

This course explores numerous sketching techniques for plan and elevation development in addition to the fundamentals of perspective drawing to produce pictorial images for communication and design concepts. (SCC)

ARCHT 196 — Special Problems (2-5 cr)

This course offers an in-depth study of advanced topics relevant to the architectural technology field. Content includes basic and advanced blueprint reading, commercial building materials, sketching methods and techniques, site planning, and the uniform building code. Course content varies depending on program and student demand. (SCC)

ARCHT 240 — Commercial Building Codes (3 cr)

This course introduces code analysis and code conformance for nonresidential projects. Prerequisite: ARCHT 125 or permission of instructor. (SCC)

ARCHT 242 — Introduction to Commercial Drafting/CAD (8 cr)

Students receive practical lab experience in the development of a set of architectural working drawings from a preliminary design of a commercial building. Structural steel framing systems are emphasized with drawing on autocad software. Prerequisite: ARCHT 132 or permission of instructor. (SCC)

ARCHT 246 – Commercial Architecture Theory (3 cr)

Students are introduced to the commercial architectural drafting profession, including the processes and materials used in the construction of heavy timber, concrete and steel systems. Specific commercial drafting opportunities and procedures are emphasized. (SCC)

ARCHT 250 – Introduction to Commercial Building Materials (4 cr)

Students are introduced to the materials commonly used in commercial construction. A variety of building components, their applications and limitations, and basic construction methods are emphasized. (SCC)

ARCHT 251 – Advanced Commercial Building Codes (3 cr)

This course continues the concepts presented in ARCHT 240. Advanced code analysis and code conformance on commercial projects are emphasized. Prerequisite: ARCHT 240. (SCC)

ARCHT 252 – Basic Commercial Drafting/CAD (8 cr)

Practical lab experience is offered in this course in the development of a set of working drawings from a preliminary design of a nonresidential building utilizing structural concrete framing systems. Applications are drawn on the computer using Desktop Architectural software. Prerequisite: ARCHT 242 or permission of instructor. (SCC)

ARCHT 253 – Introduction to Architectural CAD (5 cr)

Students are introduced to the basic principles of CAD and its application to the architectural drafting field. Practical applications of a drawing software package and the creation of basic working drawings are emphasized. (SCC)

ARCHT 262 – Advanced Commercial Drafting/CAD (10 cr)

Practical lab experience is utilized in the development of a set of working drawings from a preliminary design of the student's choice. Final development is drawn on the computer using Architectural Desktop software. Prerequisite: ARCHT 252 or permission of instructor. (SCC)

ARCHT 263 – Advanced Commercial Building Materials (4 cr)

This course continues the concepts presented in ARCHT 250. A variety of building components, their applications and limitations, and basic construction methods are emphasized. Prerequisite: ARCHT 250. (SCC)

ARCHT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

ARCHT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

ARCHT 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

ART**ART& 100 – Art Appreciation (5 cr)**

A course to develop an appreciation and awareness of art, and to make art effective in daily living. Prerequisite: Recommend reading level: 80 COMPAS/40 ASSET. (SCC, SFCC)

ART 101 – Fundamentals of Drawing (4 cr)

Freehand drawing from observation is taught. Studies of form, texture, line, mass, shape and perspective applied to expressive drawing for the beginning student. (SFCC)

ART 102 – Drawing Composition (4 cr)

Includes studies of form, texture, line, mass and shape applied to expressive drawing with emphasis on good composition. (SFCC)

ART 103 – Drawing Techniques (4 cr)

Studies of form, texture, line, mass and shape are applied to expressive drawing with emphasis on a variety of drawing techniques. (SFCC)

ART 104 – Perspective Drawing (4 cr)

Students study fundamentals of perspective drawing for the artist and designer. One-, two- and three-point linear perspective; aerial perspective; the effects of light and shadow. (SFCC)

ART 105 – Color and Design (5 cr)

A first-quarter studio class introducing the elements and principles of two-dimensional design. This course emphasizes the structures and theories of color as it is perceived via pigment and light. Through individual projects, exercises and discussion, the student learns basic art vocabulary, compositional structure, analytical skills and professional craftsmanship. (SFCC)

ART 106 – 3-D Design (4 cr)

A second-quarter design class continuing the development and exploration of the elements and principles of design with the emphasis on form and space. A variety of processes including modeling, carving, casting and fabrication are introduced through a series of exercises. Materials may include paper, wood, found objects, metals, clay, plaster and latex. Students learn safety procedures and the proper use of hand and power tools. Prerequisite: ART 105 or permission of instructor. (SFCC)

ART 108 – Ancient/Medieval Art (5 cr)

History of the development of major and minor arts from prehistoric times through the Middle Ages. The civilizations of the Near East, Egypt and the classical world are introduced through illustrated lecture and individual research. The developing art of Western Europe during the Middle Ages is seen in the context of its political, social, economic and religious environment. (SCC, SFCC)

ART 109 – Renaissance/Baroque Art (5 cr)

History of the development of major and minor arts from the Early Renaissance through the 18th century. Through illustrated lectures and individual research, the student will explore the work of individual artists, observe the changing role of the artist in his/her society, note the support systems of art patronage, and attempt to assess the aesthetics of the given period or style. (SCC, SFCC)

ART 110 – Modern Art (5 cr)

History of the development of modern art beginning with the 19th century and concluding with an emphasis on contemporary art and architecture. The course attempts to critically assess the aesthetics of art styles and ideologies. Through illustrated lectures and individual research the student are exposed to a variety of contemporary approaches and media in the visual arts. (SCC, SFCC)

ART 111 – Art History (1-15 cr)

A special interest course offered when the opportunity arises; may include field trips and tours in addition to lecture and discussions. (SFCC)

ART 112 – Non-Western Art (5 cr)

This course is designed to explore the art from cultures outside the European tradition such as Asian, African, Meso American and groups from the North American continent. In addition to the basic slide/lecture format, there are guest speakers, films and videos, and one or two short art experiences. Prerequisite: Recommended reading level 80 compass/40 asset. (SCC, SFCC)

ART 122 – Health and Safety in Art (1 cr)

Designed to develop awareness of health, safety and toxicology concerns as they pertain to processes and materials used in the visual arts. Information on hazards and the necessary precautions for individual media, ventilation, substitutes for hazardous materials and safety in the studio is included. A recommended course for all art students. (SFCC)

ART 127 – Visual Arts Special Workshops (1-15 cr)

This course provides intensive studio experiences in specialized areas of visual arts including techniques or concepts not already covered by existing classes. May be repeated for a maximum of 15 credits. (SCC, SFCC)

ART 130 – Sculpture (4 cr)

Studio investigation of various sculptural concepts, materials and processes. Students work with equipment and tools and are given specific problems dealing with a variety of materials. Advanced students work closely and contractually with the instructor. Independent research and exploration is encouraged at beginning and advanced levels. May be repeated for a total of 16 credits. Prerequisite: ART 106 or 205 or an academic art course or permission of instructor. (SFCC)

ART 147 – Advanced Design (3 cr)

Advanced problems in aesthetic and symbolic considerations of 2-D and 3-D design. May be repeated for a total of 6 credits. Prerequisite: ART 105. (SFCC)

ART 151 – Calligraphy (3 cr)

Lettering basics including an application of drawn and indicated letter forms, space copy and basic lettering strokes. May be repeated for a total of 6 credits. (SFCC)

ART 161 – Portfolio I (1 cr)

A studio seminar to be taken at the end of the first year. An introduction to professional practices including preparation of a portfolio of original work, documentation of work using a copy stand and camera, and writing an artist's statement. Independent research, seminar discussions, guest artists, and viewing exhibitions and performances. Required for C.F.A. and A.F.A. candidates. To be taken spring quarter in the first year. Prerequisite: ART 106, 110 and 202, plus 10 additional Art credits at SFCC or permission of instructor. The above can be taken concurrently with ART 161. (SFCC)

ART 180 – Watercolor (4 cr)

Transparent and opaque watercolor, as well as other water mediums. Students learn to stretch paper and to handle the traditional tools and papers of this medium. Individual projects designed to encourage exploration and personal expression. May be repeated for a total of 16 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 186 — Oil Painting (4 cr)

Working with oil medium on canvas, board or paper. Practice in stretching canvas, preparing the ground and mixing paint. Course emphasizes the formal aspects of composition and the development of an expressive approach to subjects and themes. May be repeated for a total of 16 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 188 — Acrylic Painting (4 cr)

Working with acrylic and other compatible mediums on surfaces such as canvas, board or paper. Practice in stretching canvas, preparing the ground and mixing paint. Course emphasizes the formal aspects of composition and the development of an expressive approach to subjects and themes. On occasion, this course may be offered specifically to teach mural painting. May be repeated for a total of 16 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 189 — Printmaking (4 cr)

A survey of the various printing processes, and an exploration into these to encourage the student to experiment and make comparisons as to the various qualities of each medium. Instructor may select from metal, stone, wood and linoleum, incorporating monotype, stenciling and stamping approaches in order to help students develop the knowledge of tools, materials and techniques. May be repeated for a total of 16 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 190 — Printmaking Relief (4 cr)

Using surfaces such as wood and linoleum, the student explores direct and indirect methods of image formation. Stamping, frottage, embossing and traditional relief methods will be explored, as well as use of color on single and multiple plates. May be repeated for a total of 12 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 191 — Screen Printing (4 cr)

Individual exploration of screen printing may include the photo process, tusche and glue, and cut stencil. The instructor considers both technical and aesthetic concerns. May be repeated for a total of 12 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 192 — Printmaking, Intaglio (4 cr)

Dry point, engraving, etching, embossing and collography will be explored on surfaces such as zinc, copper, masonite and cardboard. Students may apply techniques such as soft ground, sugar lift, aquatint and color printing in conjunction with design concepts. May be repeated for a total of 12 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 193 — Lithography (Printmaking) (4 cr)

Students process directly drawn images on Bavarian limestone using wash and line drawing techniques. Color application is possible. The technique is based on the natural antipathy of grease and water. May be repeated for a total of 12 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 194 — Jewelry (3 cr)

Design and construction of jewelry in various materials including contemporary materials with emphasis on design and craftsmanship. Course applies to the artist as a craftsperson in the professional field. May be repeated for a total of 9 credits. Prerequisite: ART 101 or 102 or 103 or 105. (SFCC)

ART 197 — Art Mediums and Techniques (3 cr)

Introduction to various craft techniques. May include papermaking, mixed media, simple book designing, weaving, ceramic arts, enameling and printing techniques. Application of the elements and principles of design. Good craftsmanship is stressed. May be repeated for a total of 9 credits. (SFCC)

ART 201 — Experimental Drawing (3 cr)

Studio and outside assignments are designed to expand the student's understanding of drawing concepts. Student is expected to participate in individual and group assignments that challenge the traditional definitions of drawing. Emphasis is on a creative approach to traditional and unconventional materials. Prerequisite: ART 101 or 102 or 103 or 202 or permission of instructor. (SFCC)

ART 202 — Figure Drawing (3 cr)

Working from a live model, the student explores a range of drawing approaches including gestural drawings, sustained renderings, structural drawings and expressive treatment of the figure. Exercises are performed which emphasize anatomical structure and focus on fragments, such as hand studies and portraiture. The development of a personal approach to drawing the figure and an examination of how the figure can be handled in art is explored through such means as critiques, slide presentations and demonstrations. May be repeated for a total of 18 credits. Prerequisite: ART 101 or 102 or 103 or permission of instructor. (SFCC)

ART 205 — Ceramics (4 cr)

Clay forming processes, hand-building, potter's wheel and principles of glazing and firing. May be repeated for a total of 12 credits. (SFCC)

ART 206 — Advanced Ceramics (4 cr)

This course involves advanced work in ceramics including specialized glaze and firing techniques, sculpture and functional form, student-based research project, and development of individual artistic concepts in clay. May be repeated for a total of 12 credits. Prerequisite: Three quarters of ART 205 or permission of instructor. (SFCC)

ART 208 — Gallery and Museum Procedures (3 cr)

Arranging exhibits; matting, framing, building sculpture stands or other devices, easels, etc. for display; preparation of posters or other announcements for shows; proper handling of a show and how to acquire traveling exhibits; providing insurance and other necessary accompanying details; proper packing and shipping of traveling shows; and research in innovative ways of exhibiting 2-D and 3-D works. May be repeated for a total of 9 credits. Prerequisite: ART 105 and 5 credits of an academic art (ART& 100, ART 108, 109, 110, 112). (SFCC)

ART 261 — Exhibit (1 cr)

Planning and installation of a culminating exhibition. Seminar dealing with professional practices: slide documentation, presentation and exhibitions, resumes and statements, and public relations. Critiques and articulation of personal work. Independent research, seminar discussions, gallery visits and guest artists. Required for all C.F.A. and A.F.A. candidates for graduation. To be taken spring quarter in the second year. Prerequisite: ART 161 plus 25 credits in art at SFCC or permission of instructor. (SFCC)

ART 266 — Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

ART 267 — Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

ASTRONOMY**ASTR& 100 — Survey of Astronomy (5 cr)**

This course, offered as a television class, is a survey of astronomy including history, the solar system, stellar evolution and cosmology. While some laboratory work and field trips are elements of this course, it does not qualify as a laboratory science. Credit will not be granted for both ASTR& 101 and 100. This is a physical science course. (SCC, SFCC)

ASTR& 101 — Intro to Astronomy (5 cr)

An introductory study of the history and concepts of astronomy including the solar system, stars, galaxies and cosmology. Includes laboratory exercises and student projects. Credit will not be granted for both ASTR& 101 and ASTR& 100. (SCC, SFCC)

AUDIO TECHNOLOGY**AUDIO 113 — Live Sound and Location Recording I (3 cr)**

This course instructs students in the design and use of live sound reinforcement systems and principles of live concert recording. Students receive hands-on training in cabling, acoustics, equalization, critical listening, and mixing, as well as techniques for successful location recording. Prerequisite: AUDIO 117, 155 and concurrent enrollment in AUDIO 120. (SFCC)

AUDIO 116 — Music Basics for Audio Professionals (5 cr)

Students learn basic music theory, vocabulary, instrumental concepts and communication skills needed to succeed in the professional recording industry. Basic keyboard skills are developed as preparation for MIDI sequencing. Prerequisite: Concurrent enrollment in AUDIO 155. (SFCC)

AUDIO 117 — Introduction to Music Technology (5 cr)

Students learn the history of electronic music, and the development of analog/digital synthesis and sampling technology. MIDI concepts and applications are covered. Students receive hands-on experience programming and editing sounds on analog synthesizers and digital samplers. Basic PC computer music sequencing is introduced. (SFCC)

AUDIO 120 — Digital Audio I (4 cr)

This course is an introduction to digital audio workstations, including: basic audio recording, editing and mixing functions, MIDI sequencing and arranging, digital audio theory, file management, and basic operating system skills. Prerequisite: AUDIO 116, 117, 155, MUSC& 141 and concurrent enrollment in AUDIO 156. (SFCC)

AUDIO 121 — Digital Audio II (4 cr)

This course is a continuation of Digital Audio I and provides intermediate level Digital Audio Workstation instruction. Students further explore the recording, editing, and mixing capabilities of DAW software. Prerequisite: AUDIO 120, 156. (SFCC)

AUDIO 151 — Audio Project I (1 cr)

Students plan and implement complete recording studio projects including set up, recording, overdubbing, mixdown and mastering. Prerequisite: AUDIO 155 and concurrent enrollment in AUDIO 156. (SFCC)

AUDIO 155 – Introduction to Recording (5 cr)

This course is an introduction to techniques and equipment for audio recording. Students study acoustics, studio construction, microphones, signal flow, multitrack recording, signal processing and receive hands-on recording experience. Prerequisite: Concurrent enrollment in AUDIO 117. (SFCC)

AUDIO 156 – Audio Engineering I (4 cr)

Students study multitrack recording and mixdown techniques including signal flow, microphone techniques, reverb, delay, effects, signal processing and basic mastering. Critical listening and aural skills are developed and applied in mixdowns and Audio Project classes. Prerequisite: AUDIO 155 and concurrent enrollment in AUDIO 151. (SFCC)

AUDIO 159 – Business of Music (5 cr)

With emphasis on human relations and personal communication skills, students are guided through the maze of the music industry. Skills are developed for working with agents, managers, attorneys, recording company executives, ad agencies, promoters, club owners and musicians. Various music and studio career opportunities are explored along with the pros and cons of contracts, unions, guilds, copyright, publishing and performing rights organizations. (SFCC)

AUDIO 205 – MIDI Arranging (5 cr)

Students compose and arrange music for small groups of instruments as used in live performance, commercial radio and TV jingles. Using Finale notation software and MIDI production software for the Mac workstation, students study composition and style techniques. Prerequisite: AUDIO 218, MUSC 214 and concurrent enrollment in AUDIO 213 and 219 or 255. (SFCC)

AUDIO 206 – Scoring for Film and Multi-Media (5 cr)

This advanced course provides students with a comprehensive foundation of music scoring and sound design structures for film and video. Students use Mac computer workstations and music production software. Open to full time students in the Audio Technology program. Prerequisite: AUDIO 205, 219 and concurrent enrollment in AUDIO 220, 259. (SFCC)

AUDIO 213 – Live Sound II (4 cr)

This course is a continuation of AUDIO 113 with emphasis on setup and operation of larger systems. Students study system design, signal processing, acoustics, troubleshooting, critical listening and effective communication. Students receive extensive hands-on experience running sound for a variety of music ensembles. Prerequisite: AUDIO 113, 156 and concurrent enrollment in AUDIO 217, 218, MUSC 214. (SFCC)

AUDIO 217 – System Setup and Maintenance (3 cr)

Students learn to set up and solve technical problems within a digital audio/MIDI workstation. Learn about MIDI/Audio interface connections and troubleshooting in both digital and combination digital/analog recording studio environments. Prerequisite: MUSC 167 and concurrent enrollment in AUDIO 218 and 213 or 255, MUSC 214. (SFCC)

AUDIO 218 – Digital Audio III (5 cr)

This course provides intermediate level instruction on Pro Tools digital audio workstations with an emphasis on music editing and professional mixing techniques. Prerequisite: AUDIO 121, 156 and MUSC 167. (SFCC)

AUDIO 219 – Digital Audio IV (5 cr)

This course provides advanced level instruction on Pro Tools digital audio workstations with an emphasis on MIDI and music production. Prerequisite: AUDIO 218 and 213 or 255 and concurrent enrollment in AUDIO 205, 213 or 255. (SFCC)

AUDIO 220 – Digital Audio V (5 cr)

This course will provide an overview of the sound for picture industry as well as in-depth instruction on sound effects creation/ editing, ADR, field recording, synch, and post-production utilizing Pro Tools digital audio workstations. Prerequisite: AUDIO 213, 218 or 255 and concurrent enrollment in AUDIO 205, 213 or 255. (SFCC)

AUDIO 251 – Audio Projects II (1 cr)

Students record, edit, and mix audio projects for their portfolios in this course. Students begin pre-production and then projects are assessed at several points during the recording process. Finished mixes are critiqued and then mastered. Prerequisite: AUDIO 151, 255, 219 and concurrent enrollment in AUDIO 260. (SFCC)

AUDIO 255 – Audio Engineering II (4 cr)

Students study more advanced audio recording and production techniques as they participate in live recording and mixdown sessions. This includes further study of analog and digital signal processing multitrack editing and CD production. Prerequisite: AUDIO 121, 156 and concurrent enrollment in AUDIO 217, 218, MUSC 214. (SFCC)

AUDIO 259 – Business of Music II (5 cr)

Students explore the numerous career options in Audio Technology, from CD production to live sound to film scoring. Emphasis is on recording studio ownership, including studio design, equipment, budget, taxes, sales, marketing and income opportunities. Students develop a studio business plan and investigate the world of the producer. Prerequisite: AUDIO 113, 156, 159. (SFCC)

AUDIO 260 – Audio Portfolio (1 cr)

In this course students assemble a professional audio portfolio for presentation to prospective employers. Students learn advanced signal processing techniques and develop refined critical listening skills. Prerequisite: AUDIO 151, 255, 219 and concurrent enrollment in AUDIO 206, 220, 251. (SFCC)

AUDIO 266 – Cooperative Education Seminar (1 cr)

For course description, see Cooperative Education. (SFCC)

AUDIO 267 – Cooperative Education Work Experience (1-3 cr)

For course description, see Cooperative Education. (SFCC)

AUTOMOTIVE COLLISION AND REFINISHING TECHNICIAN**ABF 113 – Introduction to Job Safety, Tools, and Equipment (4 cr)**

Students are introduced to personal safety and health protection requirements found in typical body shops. General shop procedures and operations are emphasized. Prerequisite: Concurrent enrollment in ABF 114, 115, 116. (SCC)

ABF 114 – Introduction to Unibody and Frame Alignment and Repair (4 cr)

Applications of basic auto sheet metal work, body shop power tools and welding equipment are introduced. Safety procedures and minor auto body repairs are emphasized. Prerequisite: Concurrent enrollment in ABF 113, 115, 116. (SCC)

ABF 115 – Basic Metal Straightening and Panel Alignment (4 cr)

Auto plastics and other body shop repairs are introduced. Major collision diagnosis, body alignment techniques and corrosion protection are emphasized. Prerequisite: Concurrent enrollment in ABF 113, 114, 116. (SCC)

ABF 116 – Introduction to Estimating and Parts Identification (4 cr)

Students learn to estimate major collision damage, auto body repair and finishing costs. Classifying body damage and parts identification are included. Prerequisite: Concurrent enrollment in ABF 113, 114, 115. (SCC)

ABF 117 – Automotive Collision MIG Welding (1 cr)

This course introduces students to the basic MIG skills required for success in the automotive collision and refinishing field. A variety of basic welding skills are introduced with emphasis on welding safety. (SCC)

ABF 123 – Introduction to Major Panel Replacement (5 cr)

Students learn the basic theory of major panel replacement. Alignment, replacement procedures and the use of plastics are emphasized. Prerequisite: Concurrent enrollment in ABF 124, 125, 126. (SCC)

ABF 124 – Introduction to Mechanical Components (3 cr)

Students are introduced to automobile body construction types and their common mechanical components. Areas of emphasis include energy absorbers, suspension and steering systems, and CV joints. Prerequisite: Concurrent enrollment in ABF 123, 125, 126. (SCC)

ABF 125 – Introduction to Major Unibody and Frame Repair (5 cr)

Students learn the basic theory and application of major unibody and frame repairs. Metalworking, glass replacement, fiberglass repair and universal measuring systems are emphasized. Prerequisite: Concurrent enrollment in ABF 123, 124, 126. (SCC)

ABF 126 – Fundamentals of Shop Procedures (3 cr)

Students learn practical applications found in typical body shops. Hydraulic equipment, corrosion proofing, welding and cost estimating are emphasized. Prerequisite: Concurrent enrollment in ABF 123, 124, 125. (SCC)

ABF 133 – Introduction to Industrial Safety and Hygiene (3 cr)

Students learn basic theory and techniques of industrial safety and hygiene. Personal safety and health practices, and safe operating procedures for shop equipment are emphasized. Prerequisite: Concurrent enrollment in ABF 134, 135, 136, 137. (SCC)

ABF 134 – Introduction to Interior and Exterior Surface Preparation (4 cr)

Basic principles of interior and exterior surface preparation are introduced. Students analyze the components of primers, undercoats and topcoats. (SCC)

ABF 135 – Basic Polishing and Detailing (3 cr)

Students are introduced to polishing and detailing procedures. Washing, compounding and polishing, and interior and exterior detailing are emphasized. Prerequisite: Concurrent enrollment in ABF 133, 134, 136, 137. (SCC)

ABF 136 – Introduction to Topcoat Systems and Application Procedures (3 cr)

Students are introduced to the basic principles of topcoat application with emphasis on the types of automotive topcoat systems and their application procedures. The development of skillful spraying techniques is introduced. Prerequisite: Concurrent enrollment in ABF 133, 134, 135, 137. (SCC)

ABF 137 – Basic Color Matching and Paint Mixing Fundamentals (3 cr)

Students are introduced to the basic principles of color matching and paint mixing. Students practice color analysis and tinting. Prerequisite: Concurrent enrollment in ABF 133, 134, 135, 136. (SCC)

ABF 220 – Welding (3 cr)

Students are introduced to MIG and Oxy/acetylene welding. Theory and application of metal inert gas welding; oxy/acetylene welding and hammer welding techniques are emphasized. Prerequisite: Admission to the program and concurrent enrollment in ABF 221, 222, 223. (SCC)

ABF 221 – Sheet Metal Repair and Fabrication (4 cr)

This course introduces students to sheet metal repair and fabrication. Theory and application of sheet metal repair, metal fabrication and shaping are emphasized. Prerequisite: Admission to the program and concurrent enrollment in ABF 220, 222, 223. (SCC)

ABF 222 – Chassis and Suspension (3 cr)

This course offers chassis and suspension design, fabrication and modification techniques. Prerequisite: Admission to the program and concurrent enrollment in ABF 220, 221, 223. (SCC)

ABF 223 – Body Assembly (2 cr)

Students learn the basic theory of body assembly, preparation and alignment techniques. Preparation and application of automotive substrate and top coat systems is emphasized. Prerequisite: Admission to the program and concurrent enrollment in ABF 220, 221, 222. (SCC)

ABF 243 – Advanced Unibody and Frame Alignment and Repair (6 cr)

Students learn a variety of advanced applications of auto sheet metal work, body shop power tools and welding equipment techniques. Prerequisite: Concurrent enrollment in ABF 244, 245. (SCC)

ABF 244 – Advanced Metal Straightening and Panel Alignment Methods (5 cr)

Students practice advanced methods of metal straightening and panel alignment. Prerequisite: Concurrent enrollment in ABF 243, 245. (SCC)

ABF 245 – Estimating Applications (5 cr)

Students focus on advanced estimating procedures and techniques for a variety of auto repairs. Prerequisite: Concurrent enrollment in ABF 243, 244. (SCC)

ABF 253 – Intermediate Major Panel Replacement Applications (6 cr)

This course continues with the concepts introduced in ABF 123 with emphasis on plastic welding, patching and rust repair. Prerequisite: Concurrent enrollment in ABF 254, 255. (SCC)

ABF 254 – Intermediate Mechanical Components Applications (4 cr)

This course continues with the concepts introduced in ABF 124. Students practice diagnostic and repair techniques for energy absorbers, steering and cooling systems. Prerequisite: Concurrent enrollment in ABF 253, 255. (SCC)

ABF 255 – Intermediate Major Unibody and Frame Methods (6 cr)

This course continues with the theory and application of major unibody and frame repair. Hydraulic equipment, various welding techniques and repair of miscellaneous automobile components are emphasized. Prerequisite: Concurrent enrollment in ABF 253, 254. (SCC)

ABF 263 – Advanced Interior and Exterior Surface Preparation (4 cr)

This course offers practical applications of interior and exterior surface preparation. Surface defects, sanding techniques and primers are emphasized. Prerequisite: ABF 134, 135, 136, 137. (SCC)

ABF 264 – Advanced Paint Application, Color Matching, and Paint Mixing (4 cr)

This course offers applications of detailing and polishing techniques. Carpet and engine cleaning are emphasized. Prerequisite: Concurrent enrollment in ABF 263, 265, 268. (SCC)

ABF 265 – Materials and Cost Estimation (3 cr)

This course continues with the concepts introduced in ABF 245. Part prices, labor costs and refinishing time calculations are emphasized. Prerequisite: Concurrent enrollment in ABF 263, 264, 268. (SCC)

ABF 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

ABF 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

ABF 268 – Advanced Finishing, Compounding, and Detailing (5 cr)

This course emphasizes practical applications of color matching, paint mixing and tinting procedures. Prerequisite: ABF 134, 135, 136, 137. (SCC)

ABF 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

AUTOMOTIVE MACHINIST**AUTMT 109 – Principles of Engine Operation (4 cr)**

This course is an introduction to the fundamentals of engine operation with an emphasis on engine disassembly and assembly methods. (SCC)

AUTMT 110 – Principles of Engine Operation and Identification (5 cr)

This course is an introduction to the fundamentals of engine operation and core identification with an emphasis on engine disassembly and assembly methods. (SCC)

AUTMT 111 – Engine Disassembly Methods (4 cr)

Students learn practical applications in the disassembly of an engine. Identification of parts and the determination of remachinable core parts are emphasized. (SCC)

AUTMT 112 – Basic Machinery Operation (3 cr)

This course introduces students to machine operations such as connecting rod reconditioning and cylinder boring and honing. Safety requirements utilized while using precision measuring instruments are emphasized. (SCC)

AUTMT 113 – Shop Safety and Hazardous Waste Management (2 cr)

This course introduces students to safety policy requirements and regulations as they apply to the automotive machine shop. State and federal standards and the shop environment are emphasized. (SCC)

AUTMT 120 – Machinery Setup and Maintenance (4 cr)

This course introduces students to the installation methods and leveling, and procedures required in machinery setup. Maintenance methods and servicing schedules of a variety of equipment are presented. Prerequisite: AUTMT 110, 111, 112, 113. (SCC)

AUTMT 121 – Machinery Setup and Maintenance Applications (8 cr)

Students learn practical applications in the installation, leveling and adjustment of machine shop equipment. Equipment servicing methods also are presented. Prerequisite: AUTMT 110, 111, 112, 113. (SCC)

AUTMT 122 – Machinery Maintenance (3 cr)

This course introduces students to the installation methods and leveling, and procedures required in machinery setup. Maintenance methods and servicing schedules of a variety of equipment are presented. Prerequisite: AUTMT 110, 111, 112, 113. (SCC)

AUTMT 130 – Principles of Air Flow (8 cr)

This course is an introduction to the theory of camshaft and cylinder head technology from early design to current combustion chambers. Camshaft terminology and applications are emphasized. Prerequisite: AUTMT 120, 121. (SCC)

AUTMT 131 – Air Flow Applications (2 cr)

This course offers practical applications utilizing computer programs to further understand the camshaft, port and combustion chamber principles. Prerequisite: AUTMT 120, 121. (SCC)

AUTMT 132 – Camshaft and Cylinder Head Applications (8 cr)

This course offers practical applications in the testing and rebuilding of cylinder heads. Prerequisite: AUTMT 120, 121. (SCC)

AUTMT 133 – Engine Machining (4 cr)

This course introduces students to Engine Machining. Prerequisite: AUTMT 110, 111, 112, 113. (SCC)

AUTMT 134 – Engine Applications (8 cr)

This course introduces students to Engine Applications. Prerequisite: AUTMT 110, 111, 112, 113. (SCC)

AUTMT 135 – Machining & Business Math (4 cr)

This course introduces students to Machining Business Mathematics. Prerequisite: AUTMT 110, 111, 112, 113. (SCC)

AUTMT 180 – Automotive Machinist Equipment Specialization (2-5 cr)

This course is highly specialized for students currently employed or employed in the automotive machinist industry. Students receive additional training on equipment commonly used in the industry. Students learn to accurately and safely operate any of the following machines to factory authorized specifications: power hone, boring bar and stand, crankshaft

regrinder, resurfacers, valve refacer, valve guide and seat head shop, lathes, cylinder hone, line bore and magnaflux. Credits are assigned at the rate of 1 credit for each 22 hours of supervised laboratory experience. (SCC)

AUTMT 210 – Engine Construction (2 cr)

This course offers theory and practical applications of short block construction and internal components. Iron and aluminum castings, forged steel and aluminum parts, and design requirements are emphasized. Prerequisite: AUTMT 130, 131, 132 or permission of instructor. (SCC)

AUTMT 211 – Engine Machining Theory I (6 cr)

This course is an introduction to the study and use of specifications manuals and computer programs as they relate to the automotive machine shop. The proper use of machine shop operations and equipment, equipment safety, and the correct procedures used to restore core parts to factory tolerance are emphasized. Prerequisite: AUTMT 130, 131, 132 or permission of instructor. (SCC)

AUTMT 212 – Engine Machine Applications I (8 cr)

This course offers practical applications in the proper and safe use of automotive machine shop equipment such as rod reconditioners, boring bars and stands, power hones, resurfacers, head shop, valve refacers, seating equipment, pressure testers, and magnaflux. Prerequisite: AUTMT 130, 131, 132 or permission of instructor. (SCC)

AUTMT 220 – Practical Math (2 cr)

This course is an introduction to practical math concepts and their relationship to automotive machine shop management and employees. Utilizing computer programs for math review; profit and loss, and markup and discount; compression ratios and work order calculations are emphasized. Prerequisite: AUTMT 210, 211, 212 or permission of instructor. (SCC)

AUTMT 221 – Engine Machining Theory II (6 cr)

Students study machine shop operations and learn the proper use of equipment used to produce components that meet factory specifications. Prerequisite: AUTMT 210, 211, 212 or permission of instructor. (SCC)

AUTMT 222 – Engine Machining Applications II (8 cr)

This course offers practical applications in the care and proper use of automotive machine shop equipment such as crankshaft regrinders, align bore machinery, engine balancers, CC burrets and engine cleaning equipment. Prerequisite: AUTMT 210, 211, 212 or permission of instructor. (SCC)

AUTMT 230 – Engine Assembly and Testing (3 cr)

Students are introduced to the theories and safe methods used to prepare the machined components for final assembly and testing of parts. Short and long block assembly including seals and sealing, and valve timing and adjustments are emphasized. Prerequisite: AUTMT 220, 221, 222 or permission of instructor. (SCC)

AUTMT 231 – Engine Machining Theory III (6 cr)

Students study cylinder block principles including design, purpose, manufacturing processes and important features. Testing for ASE (Automotive Service Excellence) also is included. Prerequisite: AUTMT 220, 221, 222 or permission of instructor. (SCC)

AUTMT 232 – Engine Machining Applications III (7 cr)

This course offers practical applications in the safe operation of machine shop equipment used to produce factory remanufactured engines. Engine assembly, installation, testing and break-in are emphasized. Prerequisite: AUTMT 220, 221, 222 or permission of instructor. (SCC)

AUTMT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

AUTMT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

AUTMT 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

AUTOMOTIVE TECHNOLOGY

AUTO 102 – Introduction to Toyota (1 cr)

This course introduces students to Toyota T-TEN coursework. A brief overview of tire service, tools and equipment, lube service, Toyota information systems and the Toyota Dealership is presented. Prerequisite: Concurrent enrollment in AUTO 103. (SCC)

AUTO 103 – Introduction to Toyota Lab (1 cr)

This course introduces students to the basic Toyota automotive tool system and testing equipment. Prerequisite: Concurrent enrollment in AUTO 102. (SCC)

AUTO 104 – Toyota Internship (2 cr)

This course introduces students to the first portion of the Technician Portfolio and the on-the-job portion of this course. Prerequisite: Dealership qualifications apply and concurrent enrollment in AUTO 105. (SCC)

AUTO 105 – Toyota Electrical Systems I (3 cr)

This course introduces the student to the Toyota Electrical System and its electrical components. Prerequisite: Concurrent enrollment in AUTO 104. (SCC)

AUTO 106 – Toyota Internship (1 cr)

This course continues the dealership training and TPORT work done as on-the-job training. Prerequisite: Concurrent enrollment in AUTO 105. (SCC)

AUTO 107 – Toyota Electrical Circuitry Theories (5 cr)

The student will learn basic essential electronic concepts; circuits; batteries; starting systems and charging systems. Prerequisite: Concurrent enrollment in AUTO 106. (SCC)

AUTO 111 – Theory of Brakes (3 cr)

This course is an introduction to the theory and operation of automotive brake systems, hydraulic systems and all types of brake systems. Prerequisite: Concurrent enrollment in AUTO 112. (SCC)

AUTO 112 – Theory and Application of Brake Repair (4 cr)

This course provides practical shop experience in the application of the principles taught in AUTO 111. Areas of emphasis are hydraulic systems and brake systems. Prerequisite: Concurrent enrollment in AUTO 111. (SCC)

AUTO 113 – Theory of Transmissions/Transaxles (3 cr)

This course provides an introduction to the theory and operation of automotive manual transmissions and transaxles, differential, drive line, and constant velocity joints. Prerequisite: Concurrent enrollment in AUTO 114. (SCC)

AUTO 114 – Diagnosis of Transmissions/Transaxles (4 cr)

This course provides practical shop experience and application of transmissions and transaxles. Prerequisite: Concurrent enrollment in AUTO 113. (SCC)

AUTO 115 – Theory of Electronics and Accessories (4 cr)

This course introduces students to the theory of basic electrical concepts including Ohm's Law, magnetism, analog and digital meters, and test equipment. Electronics and electrical components also are introduced. Prerequisite: Concurrent enrollment in AUTO 116. (SCC)

AUTO 116 – Diagnosis of Electronics and Accessories (5 cr)

Practical shop experience in the testing of electrical circuits is offered in this course. Related test equipment such as test lamps, voltmeters, ammeters and ohmmeters is used to diagnose electrical problems. Prerequisite: Concurrent enrollment in AUTO 115. (SCC)

AUTO 117 – Theory of Engine Performance (5 cr)

This course introduces students to the diagnosis and repair of automotive engines. Areas of emphasis includes ignition, fuel, exhaust and emissions control. Prerequisite: Concurrent enrollment in AUTO 118. (SCC)

AUTO 118 – Diagnosis of Engine Performance (6 cr)

Students are introduced to practical shop experience in the diagnosis and repair of automotive engines. Ignition, fuel, exhaust and emissions control are emphasized. Prerequisite: Concurrent enrollment in AUTO 117. (SCC)

AUTO 119 – Theory of Air Conditioning (2 cr)

This course introduces students to the theory of automotive heating and air conditioning systems. (SCC)

AUTO 120 – Air Conditioning Applications (3 cr)

This course provides students with practical shop experience in the diagnosis and repair of heating and air conditioning systems. Prerequisite: Concurrent enrollment in AUTO 119. (SCC)

AUTO 121 – Principles of Engine Performance, Air Conditioning, and Electrical (4 cr)

Students learn advanced concepts introduced in AUTO 215 and 217. Theory and principles of computerized engine controls, automotive exhaust emissions, fuel injection and ignition systems are emphasized. Prerequisite: AUTO 215, 216, 217, 218 and concurrent enrollment in AUTO 122. (SCC)

AUTO 122 – Engine Performance, Service, and Repair (5 cr)

Students learn advanced concepts introduced in AUTO 216 and 218. Theory and principles of computerized engine controls, automotive exhaust emissions, fuel injection and ignition systems are emphasized. Prerequisite: AUTO 215, 216, 217, 218 and concurrent enrollment in AUTO 121. (SCC)

AUTO 123 – Toyota Engine Performance I (2 cr)

The student will learn the Basic techniques of diagnosis of automotive electronic control engines. Prerequisite: Concurrent enrollment in AUTO 106, 107. (SCC)

AUTO 124 – Toyota Engine Performance I Lab (4 cr)

This basic course includes component idea, troubleshooting and diagnosing. Prerequisite: Concurrent enrollment in AUTO 123. (SCC)

See program/course abbreviation key on page 143.

AUTO 125 – Toyota Engine Repair (2 cr)

This course enables the student to understand engine operation, cleaning and safety operations. It includes the US and Metric system and troubleshooting and diagnosing. Prerequisite: Concurrent enrollment in AUTO 124. (SCC)

AUTO 126 – Toyota Engine Repair Lab (4 cr)

This course enables the student to remove, reinstall, teardown, overhaul, diagnosis of engine operation, service and repair. Prerequisite: Concurrent enrollment in AUTO 125. (SCC)

AUTO 127 – Toyota Electrical Systems II (1 cr)

This advanced course continues studies of the Toyota Electrical System, computer controlled circuits, wiring diagram reading, and its electrical components. Prerequisite: Concurrent enrollment in AUTO 126. (SCC)

AUTO 128 – Toyota Electrical Systems II Lab (1 cr)

This advanced course focuses on the electronic concepts, circuits, Troubleshooting, wiring diagram reading, and electronic computer systems. Prerequisite: Concurrent enrollment in AUTO 127. (SCC)

AUTO 129 – Principles of Automatic Transmissions (4 cr)

Principles of steering systems, including four-wheel alignment, late model transmissions, transaxles and sub-assemblies are emphasized. Prerequisite: Concurrent enrollment in AUTO 130. (SCC)

AUTO 130 – Service and Repair of Automatic Transmissions (5 cr)

This course emphasizes application of principles presented in AUTO 129. Content areas include all types of steering systems, including four-wheel alignments; late model transmissions, transaxles and sub-assemblies. Prerequisite: Concurrent enrollment in AUTO 129. (SCC)

AUTO 131 – Principles of Suspension Systems (4 cr)

This course introduces students to the basic principles of steering and suspension systems including MacPherson struts and four-wheel alignment. Prerequisite: Concurrent enrollment in AUTO 132. (SCC)

AUTO 132 – Service and Repair of Suspension Systems (5 cr)

This course introduces students to the practical applications of steering and suspension systems including MacPherson struts and four-wheel alignment. Prerequisite: Concurrent enrollment in AUTO 131. (SCC)

AUTO 201 – Toyota Brakes (3 cr)

Students learn to identify, describe the purpose, types of applications, and operation methods pertaining to automobile brake systems. Prerequisite: Concurrent enrollment in AUTO 128. (SCC)

AUTO 202 – Toyota Brakes Lab (3 cr)

This course introduces students to Toyota T-TEN coursework. A brief overview of tire service, tools and measurements, lube service, Toyota information systems, and electrical theory and circuitry is presented. Prerequisite: Concurrent enrollment in AUTO 201. (SCC)

AUTO 203 – Toyota Steering and Suspension (3 cr)

This course includes instruction on the service and repair of all types of steering and suspension systems. Prerequisite: Concurrent enrollment in AUTO 202. (SCC)

AUTO 204 – Toyota Steering and Suspension Lab (3 cr)

This course includes instruction on the service and repair of all types of Steering and Suspension systems. Prerequisite: Concurrent enrollment in AUTO 203. (SCC)

AUTO 205 – Toyota Internship (5 cr)

This course continues the work involving TPORT with the Toyota dealer and the student technician. Prerequisite: Concurrent enrollment in AUTO 204. (SCC)

AUTO 206 – Theory of Engine Performance (3 cr)

The student will learn to identify the components of the standard Toyota engine. The function of the engine and its components and operation will also be explored. (SCC)

AUTO 207 – Toyota Engine Performance II (2 cr)

This course includes instruction on identifying the components of the standard Toyota engine. It explains the function of engine components and includes advanced shop application. Prerequisite: Concurrent enrollment in AUTO 205. (SCC)

AUTO 208 – Toyota Engine Performance II Lab (3 cr)

This course includes instruction on identifying, servicing and repairing the Toyota engine performance concerns. Prerequisite: Concurrent enrollment in AUTO 207. (SCC)

AUTO 209 – Toyota Internship (12 cr)

This continues the internship with the dealership using TPORT. Prerequisite: Concurrent enrollment in AUTO 208. (SCC)

AUTO 211 – Theory of Engines (8 cr)

This course is an introduction to the theory and operation of fundamentals of engine diagnosis, cylinder heads, valve trains, engine blocks, lubrication and cooling systems. Prerequisite: AUTO 111 and concurrent enrollment in AUTO 212. (SCC)

AUTO 212 – Theory and Application of Engine Repair (8 cr)

This course provides practical shop experience in engine repair including engine diagnosis, cylinder head inspection, valve trains, engine blocks, lubrication and cooling fundamentals. Prerequisite: AUTO 112 and concurrent enrollment in AUTO 211. (SCC)

AUTO 215 – Advanced Theory of Electronics and Accessories (3 cr)

Students learn the practical application of Ohm's Law, analog and digital meters, and test equipment. Hookup and testing of electronics and electrical components are presented. Prerequisite: AUTO 115, 116 and concurrent enrollment in AUTO 216. (SCC)

AUTO 216 – Advanced Diagnosis of Electronics and Accessories (4 cr)

Students obtain practical shop experience in the repair and replacement of electrical circuits. Related test equipment such as test lamps, voltmeters, ammeters, lab scopes and ohmmeters is used to diagnose electrical problems. Prerequisite: AUTO 115, 116 and concurrent enrollment in AUTO 215. (SCC)

AUTO 217 – Principles of Automatic Transmissions (4 cr)

Students will learn about the principles of Automatic Transmissions system. Diagnosing problems and repair methods will be explored. Prerequisite: Concurrent enrollment in AUTO 209. (SCC)

AUTO 218 – Service and Repair of Automatic Transmissions (5 cr)

Students will become familiar with the service and repair of transmissions and transaxles, differential, drive line, and constant velocity joints. Prerequisite: Concurrent enrollment in AUTO 217. (SCC)

AUTO 219 – Toyota Hybrid Technology (2 cr)

Students explore the purpose, types of applications, and operation methods pertaining to hybrid service and repair. Prerequisite: Concurrent enrollment in AUTO 218. (SCC)

AUTO 221 – Advanced Principles of Engine Performance, Air Conditioning, and Electrical (3 cr)

Students are offered advanced shop experience introduced in AUTO 121. The application of principles of computerized engine controls, automotive exhaust emissions, fuel injection and ignition systems is emphasized. Prerequisite: AUTO 121 and concurrent enrollment in AUTO 222. (SCC)

AUTO 222 – Advanced Engine Performance, Service, and Repair (4 cr)

Students learn advanced concepts introduced in AUTO 122 with shop experience in special problems of principles of computerized engine controls, automotive exhaust emissions, fuel injection and ignition systems. Prerequisite: AUTO 121, 122 and concurrent enrollment in AUTO 221. (SCC)

AUTO 223 – Theory of Transmissions (3 cr)

This course includes advanced knowledge of the purpose, types of applications, and operation methods pertaining to all types of transmissions and transaxles, and suspension systems. Prerequisite: Concurrent enrollment in AUTO 219. (SCC)

AUTO 224 – Diagnosis of Transmissions (4 cr)

This advanced course includes further knowledge about the purpose, types of application, and operation methods pertaining to all types of transmissions and transaxles and suspension systems. Prerequisite: Concurrent enrollment in AUTO 223. (SCC)

AUTO 225 – Toyota Heating and Air Conditioning (2 cr)

Advanced knowledge of the refrigeration process, AC systems, ATC systems diagnosing and repairing all systems are explored in this course. Prerequisite: Concurrent enrollment in AUTO 224. (SCC)

AUTO 226 – Toyota Heating and Air Conditioning Lab (3 cr)

This course includes in-depth knowledge of advanced knowledge of the repair and service of the refrigeration process, AC systems, ATC systems diagnosis and repair of all systems explored in this course. Prerequisite: Concurrent enrollment in AUTO 225. (SCC)

AUTO 227 – Theory of Hybrids (5 cr)

This course introduces students to the diagnosis and repair of electric vehicles. Areas of emphasis include alternative fuels, hybrid vehicles, batteries, and safety precautions. Prerequisite: AUTO 111, 112, 113, 114, 115, 116, 117-120, 129, 130, 131, 132, 215, 216 or ASE Certifications and concurrent enrollment in AUTO 228. (SCC)

AUTO 228 – Diagnosis of Hybrids (6 cr)

Students are introduced to practical shop experience in the diagnosis and repair of hybrid vehicles. Regenerative brake systems, hybrid vehicle transmissions and transaxles, and various manufacturers' vehicle type controls are emphasized. Prerequisite: AUTO 227 or permission of instructor and concurrent enrollment in AUTO 227. (SCC)

AUTO 229 – Alternative Fuels (3 cr)

This course introduces students to the theory of alternative fuel systems and fuel cells. Prerequisite: AUTO 227 or permission of instructor. (SCC)

AUTO 230 – Safety Procedures for Hybrids (2 cr)

This course provides students with theory and practical shop experience in the safety procedures used when working on hybrid vehicles. Prerequisite: AUTO 227 or permission of instructor and concurrent enrollment in AUTO 229. (SCC)

AUTO 235 – Engine Performance - Toyota T-TEN (16 cr)

Information in this course includes an introduction to electrical circuit diagnosis with emphasis on electrical terminology, circuit concepts, and diagnostic techniques used to repair starting and charging systems. Course content is limited to the Toyota T-TEN (Technical Educational Network) instructional program. (SCC)

AUTO 236 – Toyota Internship (7 cr)

This is the final internship the student will have with the dealer to complete the Toyota T-TEN program. Prerequisite: Concurrent enrollment in AUTO 226. (SCC)

AUTO 240 – Heating and Air Conditioning - Toyota T-TEN (16 cr)

Information in this course includes an introduction to the diagnosis and repair of air conditioning and automatic temperature control systems. Course content is limited to the Toyota T-TEN (Technical Education Network) instructional program. (SCC)

AUTO 241 – Manual/Automatic Transmissions - Toyota T-TEN (16 cr)

Information presented in this course includes the study of both automatic and manual transmissions in front and rear wheel drive vehicles. Practical applications include the diagnosis and repair of the transmission system including clutches, transmissions, transaxles and transfer cases. Course content is limited to the Toyota T-TEN (Technical Education Network) instructional program. (SCC)

AUTO 250 – Automotive Service Writer (16 cr)

Theory and practical shop experience is the responsibility of the service writer employed in an automotive dealership or an independent service center. Sales and service techniques and the daily operational procedures practiced in automotive service centers is emphasized. Prerequisite: Permission of instructor. (SCC)

AUTO 252 – Engines - Toyota T-TEN (16 cr)

This course introduces the theory and operation of engine fundamentals including cylinder heads, valve trains, engine blocks, and lubrication and cooling systems. Practical applications include the removal, disassembly and inspection of the car engine. Course content is limited to the Toyota T-TEN (Technical Education Network) instructional program. (SCC)

AUTO 262 – Suspension, Brakes and ABS - Toyota T-TEN (16 cr)

This course introduces students to the theory and operation of all types of brake systems, suspension systems including MacPherson struts, short- and long-arm systems, and rear suspension systems. Course content is limited to the Toyota T-TEN (Technical Education Network) instructional program. (SCC)

AUTO 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

AUTO 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

AUTO 270 – High Performance Engines (16 cr)

This course is designed for students interested in expanding their knowledge after completion of their A.A.S. degree in Automotive Technology. Special needs and skills required to work on high performance engines are emphasized. Prerequisite: A.A.S. degree in Automotive Technology or ASE Masters degree. (SCC)

AUTO 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

AVIATION MAINTENANCE TECHNOLOGY**ARCFT 115 – Introduction to General Aircraft Maintenance (1-5 cr)**

This course introduces students to the basic concepts of airframe and powerplant mechanics including the use of tools and equipment, basic mechanics techniques, materials, and processes. FAA regulations, weight and balance control, basic electrical systems and instrumentation are emphasized. Prerequisite: Concurrent enrollment in ARCFT 116. (SCC)

ARCFT 116 – Introduction to General Aircraft Maintenance Shop (1-4 cr)

Students learn practical applications to basic aerodynamics and the use of tools and equipment. Basic mechanics techniques, materials and processes are emphasized. FAA regulations, weight and balance control, basic electrical systems, and instrumentation are covered. Prerequisite: Concurrent enrollment in ARCFT 115. (SCC)

ARCFT 117 – General Aircraft Maintenance (1-5 cr)

Students learn advanced concepts of ARCFT 115 including the use of tools and equipment, basic mechanics techniques, materials and processes. FAA regulations, weight and balance control, basic electrical systems, and instrumentation are emphasized. Prerequisite: ARCFT 115. (SCC)

ARCFT 118 – General Aircraft Maintenance Shop (1-4 cr)

Students learn advanced applications to aerodynamics and the use of tools and equipment. Advanced mechanics techniques, materials and processes are emphasized. FAA regulations, weight and balance control, electrical systems, and instrumentation applications are offered. Prerequisite: ARCFT 116 and concurrent enrollment in ARCFT 117. (SCC)

ARCFT 119 – Advanced General Aircraft Maintenance (1-5 cr)

Students are introduced to advanced concepts offered in ARCFT 117. The use of tools and equipment, basic mechanics techniques, materials, and processes are emphasized. A review of FAA regulations, weight and balance control, advanced electrical systems, and instrumentation concepts are presented. Prerequisite: ARCFT 117 and concurrent enrollment in ARCFT 120. (SCC)

ARCFT 120 – Advanced General Aircraft Maintenance Shop (1-4 cr)

Students apply advanced knowledge of aerodynamics and use of tools and equipment. Advanced mechanics techniques, materials and processes are emphasized. A review of FAA regulations, weight and balance control, electrical systems, and instrumentation applications are offered. Prerequisite: ARCFT 118 and concurrent enrollment in ARCFT 119. (SCC)

ARCFT 135 – Basic Airframe Maintenance (1-5 cr)

This course introduces students to basic aerodynamics, woodworking, aircraft fabric finishing, and aircraft sheet metal and welding. Prerequisite: ARCFT 119 and concurrent enrollment in ARCFT 136. (SCC)

ARCFT 136 – Basic Airframe Maintenance Shop (1-5 cr)

Students apply their skills in woodworking, aircraft fabric and finishing, and aircraft sheet metal and welding. Prerequisite: ARCFT 120 and concurrent enrollment in ARCFT 135. (SCC)

ARCFT 137 – Airframe Structures (1-5 cr)

This course presents concepts in aircraft sheet metal, aircraft assembly and disassembly, and rigging. Prerequisite: ARCFT 135 and concurrent enrollment in ARCFT 138. (SCC)

ARCFT 138 – Airframe Structures Shop (1-5 cr)

Students apply their knowledge in aircraft sheet metal, aircraft assembly and disassembly, controls and control surfaces, and rigging. Prerequisite: ARCFT 136 and concurrent enrollment in ARCFT 137. (SCC)

ARCFT 139 – Airframe Systems (1-5 cr)

Students are introduced to aircraft airframe 100-hour and annual inspections, aircraft landing gear systems, and hydraulic and pneumatic systems. Prerequisite: ARCFT 137 and concurrent enrollment in ARCFT 140. (SCC)

ARCFT 140 – Airframe Systems Shop (1-5 cr)

Students prepare for aircraft airframe 100-hour and annual inspections, aircraft landing gear systems, and hydraulic and pneumatic systems. Prerequisite: ARCFT 138 and concurrent enrollment in ARCFT 139. (SCC)

ARCFT 235 – Advanced Airframe Systems (1-5 cr)

Students learn various types of aircraft systems including instrument and electrical, navigation and communication, and position and warning classifications. Prerequisite: ARCFT 139 and concurrent enrollment in ARCFT 236. (SCC)

ARCFT 236 – Advanced Airframe Systems Shop (1-5 cr)

This course emphasizes the applications of various aircraft systems including instrument and electrical, navigation and communication, and position and warning systems. Prerequisite: ARCFT 140 and concurrent enrollment in ARCFT 235. (SCC)

ARCFT 237 – Integrated Airframe Powerplant Maintenance (1-5 cr)

This course includes theory and practice of integrated aircraft inspections, ice and rain control systems, and fire protection systems. Prerequisite: ARCFT 235 and concurrent enrollment in ARCFT 238. (SCC)

ARCFT 238 – Integrated Airframe Powerplant Maintenance Shop (1-5 cr)

Students apply their skills in the practice of integrated aircraft inspections, ice and rain control systems, and fire protection systems. Prerequisite: ARCFT 236 and concurrent enrollment in ARCFT 237. (SCC)

ARCFT 245 – Aircraft Engines I (1-5 cr)

This course addresses theoretical and practical instruction in aircraft engine theory as well as maintenance and inspection. Prerequisite: ARCFT 119 and concurrent enrollment in ARCFT 246. (SCC)

ARCFT 246 – Aircraft Engines Shop I (1-5 cr)

Students apply the theories learned in ARCFT 245 with shop practice in theoretical and practical maintenance as well as servicing and inspecting aircraft engines. Prerequisite: ARCFT 120 and concurrent enrollment in ARCFT 245. (SCC)

ARCFT 247 – Aircraft Engines II (1-5 cr)

This course addresses theoretical and practical instruction in aircraft engine overhauls, maintenance, operation and inspections. Prerequisite: ARCFT 245 and concurrent enrollment in ARCFT 248. (SCC)

ARCFT 248 – Aircraft Engines Shop II (1-5 cr)

Students apply the theories learned in ARCFT 247 with shop practice in practical maintenance as well as servicing and inspecting aircraft engine overhauls, maintenance, operation and inspections. Prerequisite: ARCFT 246 and concurrent enrollment in ARCFT 247. (SCC)

ARCFT 255 – Powerplant Systems and Components I (1-5 cr)

This course offers practical and theoretical instruction in auxiliary powerplants; unducted fans; engine fire protection systems; lubrication systems; fuel and fuel metering systems; and engine electrical, ignition and starting systems. Prerequisite: ARCFT 247 and concurrent enrollment in ARCFT 256. (SCC)

ARCFT 256 – Powerplant Systems and Components I Shop (1-5 cr)

This course offers practical shop experience in powerplant systems including auxiliary powerplants; and fire, lubrication, fuel and electrical systems. Prerequisite: ARCFT 248 and concurrent enrollment in ARCFT 255. (SCC)

ARCFT 257 – Powerplant Systems and Components II (1-5 cr)

This course offers theory on propellers as well as powerplant airflow and cooling exhaust systems. Prerequisite: ARCFT 255 and concurrent enrollment in ARCFT 258. (SCC)

ARCFT 258 – Powerplant Systems and Components II Shop (1-5 cr)

This course offers practical shop experience in propeller maintenance as well as powerplant cooling and exhaust systems. Prerequisite: ARCFT 256 and concurrent enrollment in ARCFT 257. (SCC)

ARCFT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

ARCFT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

ARCFT 275 – Theory and Review - Airframe or Powerplant (1-10 cr)

This class provides students with additional time to meet Federal Aviation Administration (FAA) requirements. Grade option: Pass/fail. Prerequisite: Completion of all six quarters of ARCFT courses. (SCC)

ARCFT 276 – Airframe or Powerplant Shop (1-10 cr)

This class provides students with additional lab time to meet Federal Aviation Administration (FAA) requirements. Grading option: Pass/fail. Prerequisite: Completion of all six quarters of ARCFT courses. (SCC)

AVIATION/AIRWAY SCIENCE**AIRSC 102 – Introduction to Aviation (6 cr)**

This course includes the student's first exposure to aerodynamics of flight. It serves as a preparation for the private pilot written, oral and flight test required by the FAA for issuance of a private pilot certificate. Course content includes instruction in FAA regulations, weather, air and radio navigation, flight safety, and emergency procedures. Prerequisite: College-level reading and writing scores, MATH 091 or appropriate placement score and concurrent enrollment in AIRSC 110. (SFCC)

AIRSC 103 – Introduction to Meteorology (6 cr)

This course provides an introduction to meteorological principals such as precipitation, temperature, cloud types, humidity, latent heat, pressure, gas laws, wind, radiation and refraction. Prerequisite: Permission of instructor. (SFCC)

AIRSC 110 – Private Flight Lab (1 cr)

This course serves as a preparation for the practical test in issuance of a private pilot certificate that is taken on the completion of the AIRSC 120. Course content includes ground and flight instruction in the maneuvers and procedures prescribed in the FAA practical test standards booklet. Prerequisite: Concurrent enrollment in AIRSC 102. (SFCC)

AIRSC 120 – Private Flight Lab II (1 cr)

This course serves as a preparation for the practical test in issuance of a private pilot certificate that is taken on the completion of this flight course. Course content includes ground and flight instruction in the maneuvers and procedures prescribed in the FAA practical test standards booklet. Prerequisite: AIRSC 110 and concurrent enrollment in AIRSC 121. (SFCC)

AIRSC 121 – Basic Attitude Instrument Flying (3 cr)

This course includes an in-depth study of basic attitude instrument flying. In addition, the operation, interpretation and practical use of VOR, ADF, DME, RNAV, RMI, HIS, and Flight Director systems are studied. The course also includes the different types of instrument charts required for IFR flight. Prerequisite: AIRSC 102 and concurrent enrollment in AIRSC 150. (SFCC)

AIRSC 122 – IFR Regulations and Procedures (3 cr)

This course provides a detailed study of the regulations, procedures and publications necessary for operating IFR in the national airspace system. Terminal and en route procedures also are studied in detail. Prerequisite: AIRSC 121 and concurrent enrollment in AIRSC 250. (SFCC)

AIRSC 150 – Commercial Flight Lab I (2 cr)

This course includes an in-depth practical study of basic attitude instrument flying and developing the student's cross-country skills to a commercial pilot standard prescribed in the commercial FAA practical test standards booklet. Prerequisite: AIRSC 102 and concurrent enrollment in AIRSC 121. (SFCC)

AIRSC 203 – Aviation Meteorology (5 cr)

This course studies weather information as related to aviation, such as basic weather, reading/interpreting charts, texts, observations and forecasts. This course also includes Aeronautical Decision Making, application of information to decision process and aviation weather hazards. Prerequisite: AIRSC 103. (SFCC)

AIRSC 223 – Aerodynamics-Airplanes (3 cr)

This course provides a study of aerodynamics, performance, stability, control, weight and balance, and special flight conditions as appropriate for commercial pilots. A discussion of commercial maneuvers and flight computers also is included. Prerequisite: AIRSC 122 and concurrent enrollment in AIRSC 224, 260. (SFCC)

AIRSC 224 – Aircraft Systems and Instruments (3 cr)

This course provides an in-depth study of flight instruments. Reciprocating engine, propeller, electrical, environmental, hydraulic, pneumatic, fuel, ignition, lubrication and pressurization systems also are studied. Prerequisite: AIRSC 250 and concurrent enrollment in AIRSC 223. (SFCC)

AIRSC 225 – Multiengine Systems and Procedures (3 cr)

This course covers the operations necessary to operate light twin-engine aircraft. Normal and abnormal procedures are included along with a discussion of the systems and aerodynamics normally associated with these aircraft. Regulations for commercial pilots also are included. Prerequisite: AIRSC 224 and concurrent enrollment in AIRSC 270. (SFCC)

AIRSC 250 – Commercial Flight Lab II (2 cr)

This flight course provides detailed flight experience for the practical use of regulations and procedures necessary to fly safely in IFR conditions. Prerequisite: AIRSC 150 and concurrent enrollment in AIRSC 122. (SFCC)

AIRSC 260 – Commercial Flight Lab III (2 cr)

This flight course provides the flight experience required to possess the flight skills of a commercial pilot prescribed by the FAA practical test standards. Prerequisite: AIRSC 250 and concurrent enrollment in AIRSC 223. (SFCC)

AIRSC 270 – Multiengine Flight Lab (2 cr)

This flight course provides the student with the commercial and instrument skills in the multiengine aircraft required by the FAA practical test standards booklet. Prerequisite: AIRSC 260 and concurrent enrollment in AIRSC 225. (SFCC)

BAKING: PROFESSIONAL PASTRIES AND SPECIALTY CAKES

BAK 101 – Introduction to Baking and Pastries (1 cr)

Students learn terminology of basic baking and methods such as ingredient identification, volume, weights and measurements, and mixing types. (SCC)

BAK 110 – Artisan Breads (5 cr)

Students learn to create hand-crafted, preservative-free breads with natural starters, long-fermentation periods and use of sponges and sour starters. (SCC)

BAK 111 – Pastries (7 cr)

Students learn to produce a variety of yeast breads including Danish, cinnamon rolls, coffee cakes, croissants, artisan and specialty pastries. (SCC)

BAK 120 – Special Occasion Cakes (2 cr)

This course introduces students to techniques needed to produce birthday, wedding and anniversary cakes. (SCC)

BAK 121 – Tortes and Gateau (2.5 cr)

Students learn to produce a variety of European style torts and gateau, bakery style cakes, and sculptured and wedding cakes. (SCC)

BAK 130 – Sculptured Cakes (2.5 cr)

Students learn advanced techniques in producing sculptured, hand-crafted specialty occasion cakes. (SCC)

BAK 131 – Rolled Fondant (2.5 cr)

This course emphasizes the development of advanced techniques in European rolled fondants. (SCC)

BAK 140 – Yeast Doughs (1 cr)

This course introduces students to a variety of mixing methods used to create yeast doughs and breads. (SCC)

BAK 248 – Wedding Cakes (2.5 cr)

Students learn advanced techniques in decorating artistic wedding cakes. (SCC)

BAK 250 – Advanced Cake Decorating Production (10 cr)

Students use advanced techniques to create, design and decorate wedding and other specialty cakes. Prerequisite: BAK 120, 121, 130, 131, 248 or permission of instructor. (SCC)

BAK 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

BAK 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

BAK 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

BIOLOGY

BIOL 100 – Environmental Biology (5 cr)

This course is the study of man in his environment for nonscience majors and vocational program students. Biological concepts presented in this course include energy production and utilization, waste generation and disposal, population growth and control, and ecosystem construction and destruction. How these concepts are influenced by human activities is emphasized. This course meets A.A. lab science requirements. (SCC, SFCC)

BIOL 110 – Insects and People (5 cr)

This course is a systematic approach to study insect interactions with one another, their physical and chemical environments, and with people. The course includes competition within and between populations and extends through communities, ecosystems and the biosphere with emphasis on interactions among insects and humans. (SFCC)

BIOL 115 – Biology for Elementary Education (5 cr)

This course introduces cellular, organismal, and ecosystem biology, including human systems, for students majoring in elementary education. Inquiry based biological investigations that support science instruction outlined in the National Science Education Standards and Washington Essential Academic Learning Requirements are emphasized. Prerequisite: Permission of instructor. (SCC)

BIOL 120 – Scientific Investigation (5 cr)

This course introduces students to laboratory investigation. Scientific method, observation and maintaining a scientific notebook are presented. A brief history of science, the nature of matter, tests of validity and statistical methods, and the role of scientists in society are emphasized. Laboratory exercises include measurement and the metric system, light absorbency and spectrophotometry, charge attraction and repulsion, and working with living organisms, including the use of microscopes also are presented. A term paper with two or more revisions is required. (SCC)

BIOL 140 – Medical Sciences Vocabulary (1 cr)

A programmed course which teaches the meanings of 300 Latin and Greek word elements used in developing up to 10,000 complex anatomical and medical terms. (SFCC)

BIOL& 160 – General Biology w/Lab (5 cr)

An integrated view of the living world including the nature of sciences, evolution of biological organization, composition and organization of living substances, metabolism, control, reproduction, heredity and ecological relationships. (SCC, SFCC)

BIOL& 221 – Majors Ecology/Evolution: w/Lab (5 cr)

Intended for students majoring in life sciences, this course provides an introduction to ecology and evolution. Topics cover the origin, evolution, and characteristics of living things and the processes that influence them. Prerequisite: BIOL& 222. (SCC, SFCC)

BIOL& 222 – Majors Cell/Molecular: w/Lab (5 cr)

Intended for students majoring in life sciences, this course provides an introduction to cellular and molecular biology. Topics include cells, cellular respiration, photosynthesis, the cell cycle and genetics. It also fulfills introductory biology requirement for the health sciences. A prior course in chemistry is highly recommended. (SCC, SFCC)

BIOL& 223 – Majors Organismal Phys: w/Lab (5 cr)

Intended for students majoring in life sciences, this course explores how plants and animals work. Topics covered include development, transport, nutrition, osmoregulation, sensory systems, and reproduction. Prerequisite: BIOL& 222. (SCC, SFCC)

BIOL 237 – Introduction to Immunology (5 cr)

This course focuses on human immune response, antibodies, receptors and immunochemical techniques. The nature of primary interaction with antigens is explored, as well as the origin of immune diversity. Topics include innate vs. acquired immune responses, hypersensitivity, transplantation, immunodeficiency and autoimmune disorders. (SCC)

BIOL& 241 – Human A & P 1 (5 cr)

Human body structure and function with emphasis on introductory cytology and histology; the skeletal, muscular and nervous systems; and the sense organs. Prerequisite: BIOL& 160 or permission of instructor. (SCC, SFCC)

BIOL& 242 – Human A & P 2 (5 cr)

Continued study of human body structure and function with emphasis on circulatory, respiratory, digestive, urinary, endocrine and reproductive systems. Prerequisite: BIOL& 241. (SCC, SFCC)

BIOL 244 – Genetics (5 cr)

This course introduces basic principles of inheritance, the significance of the cell cycle events to variation, genetic links to physical traits, mutations, DNA repair, gene analysis and linkage. Applications and molecular techniques such as DNA sequencing, cloning, genomics and proteomics are introduced. Classical experimental methods and findings are examined in detail. Problem-solving skills that require logic and mathematical understanding are emphasized. Prerequisite: BIOL& 160 or BIOL& 222. (SCC, SFCC)

BIOL& 260 – Microbiology (5 cr)

Introduction to the study of bacteria, viruses, rickettsiae, spirochetes, fungi and protozoa with emphasis on microbial structure, physiology, genetics, physical and chemical control, and the role of microorganisms in disease and immunology. Laboratory includes staining, media making, isolation, cultivation and identification techniques of bacteria. Meets A.A. degree lab science requirement. Prerequisite: BIOL& 160, CHEM 101 recommended. (SCC, SFCC)

BIOMEDICAL EQUIPMENT TECHNICIAN

BIOEQ 199 – Medical Terminology for Biomedical Equipment Technology (2 cr)

This course presents a study of basic medical terminology for students interested in the field of biomedical equipment technology. Prefixes, suffixes, word roots, combining forms, special endings, plural forms and abbreviations are included in the content. A programmed learning, word building system is used to learn word parts that are used to construct or analyze new terms. Definitions, word usage and pronunciation are emphasized. Prerequisite: Permission of the instructor and enrollment in the biomedical equipment technician program. (SCC)

BIOEQ 241 – Biomedical Circuits and Devices (7 cr)

Students continue to learn electronics fundamentals. Individual circuits using such devices as EETs, UJTs, SCRs, and Linear ICs with emphasis on amplifiers and switching circuits. All circuits presented are directly related to the applications used within biomedical equipment. Prerequisite: ELECT 131, 132 and permission of instructor and concurrent enrollment in BIOEQ 243. (SCC)

BIOEQ 242 – Physiology for Biomedical Equipment Technology (3 cr)

Students learn the underlying physiological principles with which medical equipment is designed to interface. A specific level of understanding is expected of students, with emphasis on the cells and the nervous, muscular, circulatory and respiratory systems. (SCC)

BIOEQ 243 – Biomedical Circuit Laboratory (6 cr)

Students receive hands-on experience with the circuits learned in BIOEQ 242, which reinforces the concepts presented. Prerequisite: ELECT 131, 132 and concurrent enrollment in BIOEQ 241. (SCC)

BIOEQ 251 – Biomedical Instrumentation Patient Monitoring and Clinical (10 cr)

Students learn the operation of several biomedical instruments by thorough analysis of electronic circuitry. These instruments are directly related to patient monitoring and clinical applications. Prerequisite: BIOEQ 241 and concurrent enrollment in BIOEQ 252. (SCC)

BIOEQ 252 – Biomedical Instrumentation Laboratory (6 cr)

Students receive hands-on experience with circuits and equipment discussed in BIOEQ 251. Prerequisite: Concurrent enrollment in BIOEQ 251. (SCC)

BIOEQ 261 – General Medical Instrumentation (5 cr)

Students learn to operate several medical instruments. The principles of operation, calibration and typical problems are emphasized. (SCC)

BIOEQ 262 – Hospital and Patient Safety (2 cr)

Students learn to solve specific problems through case studies. Risk management, liability and safety programs are evaluated with emphasis on electrical safety. The use of safety standards and codes are presented. Prerequisite: Sixth-quarter biomedical equipment technician students only. (SCC)

BIOEQ 263 – Introduction to Digital Electronics (14 cr)

This course is designed to give a systematic approach to the analysis of digital circuitry with applications specifically related to medical equipment. Laboratory projects provide hands-on reinforcement of concepts presented. Microprocessor, memory systems and microcontrollers will be studied. Prerequisite: BIOEQ 241. (SCC)

BIOEQ 271 – Biomedical Equipment Technology Clinical Rotation (10 cr)

Students are assigned to specific healthcare facilities and apply their knowledge to develop additional skills which enhance their understanding of healthcare environments. Their learning experience is strengthened by functioning within those environments. Prerequisite: BIOEQ 242, 251, 252 and concurrent enrollment in BIOEQ 272. (SCC)

BIOEQ 272 – Biomedical Seminar (4 cr)

Students discuss technical problems, ethics, safety concerns and other situations that may develop during clinical rotation. Students are assisted with the final draft of their resumes. Prerequisite: BIOEQ 242, 251, 252 and concurrent enrollment in BIOEQ 271. (SCC)

BIOTECHNOLOGY**BIOTC 120 – Cell Culture Techniques (5 cr)**

This course introduces students to aseptic techniques for working with microbiological cultures and mammalian cells. Lecture topics include the origins and maintenance of commonly used cell lines, considerations for working with potentially hazardous cultures, basic requirements for cell cultures, types of selective and specialized media, basic concepts of mammalian cell fermentation, large-scale fermentation, and an introduction to downstream processing of biologics. (SCC)

BIOTC 122 – Good Manufacturing Practices (1 cr)

This course explores the regulations which govern the production of drugs, biologics and devices for human use. This is of increasing importance in the biotechnology industry since the US Food and Drug Administration has generally required that products which are eventually used for human diagnostics or treatment must be developed in a GMP environment. Basic concepts of GMP are discussed as well as in-depth exploration of specific regulatory compliance topics such as record keeping, working from standard operating procedures, quality control and validation. (SCC)

BIOTC 129 – Introduction to Protein Chemistry (2 cr)

This course introduces students to the principles of protein analysis and methods used in the biotechnology industry for the isolation and purification of proteins. (SCC)

BIOTC 201 – Scientific Communication (3 cr)

This course presents an in-depth examination of scientific literature and the nature of interaction among scientists, other scientists and the public. Students write a variety of scientific communications, including a prospectus of a hypothesis, a laboratory protocol, a press release, a scientific poster and a review article. Students give oral presentations using their ideas or a scientific experiment which has recently appeared in the literature. Methods for locating quality references on scientific topics are presented, including the advantages and pitfalls of using the Internet for literature research. (SCC)

BIOTC 220 – Instrumental Analysis (1 cr)

This course explores instrumental methods commonly used in biotechnology. Topics include pH and temperature measurements, UV/vis spectrophotometry, gas chromatography, infrared spectroscopy, DNA amplification, and liquid chromatography. (SCC)

BIOTC 240 – Biotechnology Internship (1-5 cr)

Internship projects are determined by the instructor and include a variety of subjects related to current trends in the biotechnology industry, such as development of DNA chip technologies, characterization of biologics, product assembly/testing for area biotech companies and research assistantships at area universities. Prerequisite: Permission of instructor. (SCC)

BIOTC 251 – Recombinant DNA (5 cr)

This course covers the basic theory and methods of molecular biology including DNA isolation, cloning, expression of genes in bacteria, transgenic organisms, gene sequencing and various analytic techniques. (SCC)

BIOTC 261 – Fermentation (5 cr)

This course offers an in-depth examination of microbial fermentation, animal and plant cell culture, and bioprocessing. Topics include a brief history of fermentation, examples and methods of industrial fermentation, product recovery and down-stream processing, and the process of moving from a laboratory scale to an industrial scale culture. (SCC)

BIOTC 289 – Biotechnology Project Internship (1-3 cr)

Internship projects are determined by the instructor and include a variety of subjects related to current trends in the biotechnology industry. This course offers more advanced coursework and lab applications than those found in BIOTC 240. Prerequisite: Permission of instructor. (SCC)

BOTANY**BOT 111 – Botany: Plant Structure and Function (5 cr)**

A study of anatomy, physiology and genetics of flowering plants. Meets A.A. degree lab science requirement. Prerequisite: BIOL& 160. (SCC, SFCC)

BOT 112 – Botany: Survey of the Plant Kingdom (5 cr)

Representative types of plants from the major groups of the plant kingdom with emphasis on structure and taxonomy. Meets A.A. degree lab science requirement. Prerequisite: BIOL& 160. (SCC, SFCC)

BOT 113 – Field Botany (5 cr)

Proficiency acquired in use of plant identification keys. Through laboratory experiences and field trips the student will learn to collect, press and identify by species any plants in Southeastern Washington. Meets A.A. degree lab science requirement. Prerequisite: BIOL& 160 or permission of instructor. (SFCC)

BUSINESS**BUS 100 – Money Management (3 cr)**

Students are introduced to managing all phases of family finances. Tips and techniques to help consumers survive on a limited budget are presented. Subjects include obtaining and using credit; saving money on food, financial services, automobiles, clothing, major appliances, insurance, travel, renting an apartment or buying a home. Students develop personal financial statements and budgets for future use. (SCC, SFCC)

BUS& 101 – Intro to Business (5 cr)

Students are introduced to the broad field of business and its organization, operation and management. Business opportunities, ownership, marketing, physical factors, human resources, finance, regulations and decision-making processes are emphasized. (SCC, SFCC)

BUS 102 – Math Skills for Business (3 cr)

Vocational number skills with or without the use of calculators are presented in the course. Rounding, decimals, fractions, percents, word problems and using special functions on a calculator are emphasized. Applications include commissions, discounts, invoices, checking accounts and interest. (SCC, SFCC)

BUS 103 – Basic Business Math and Electronic Calculators (5 cr)

Students work with numbers and solve business problems using a 10-key pad including special features found on most modern business desk calculators and apply basic business math formulas. (SCC, SFCC)

BUS 104 – Business Mathematics (5 cr)

Practical problems in the various fields of business including a review of fundamentals are emphasized in this course. Financial statements, buying and selling goods, simple and compound interest and discounts, annuities, sinking fund and amortization, consumer credit, and stocks and bonds are presented. Prerequisite: BUS 103. (SCC, SFCC)

See program/course abbreviation key on page 143.

BUS 105 – Principles of Leadership (3 cr)

Students learn several theoretical approaches to leadership applicable within various organizational contexts including profit and nonprofit settings. Experiential learning, self-analysis instruments, role playing, case studies and related learning approaches are used to demonstrate the application of leadership principles. Selected skills and values associated with leadership success are taught. (SFCC)

BUS 107 – Introduction to Electronic Calculators (1 cr)

Students learn to perform basic operations of an electronic calculator and develop a reasonable combination of speed and accuracy. (SCC, SFCC)

BUS 108 – eBusiness (2 cr)

This course is an introduction to the basics of using the Internet as a marketing medium. Special emphasis is placed on searching, exploring and establishing a commercial presence on the World Wide Web. Topics include effective search strategies, examples of outstanding web sites, and guidelines for creating persuasive home pages. The course also allows the student to create a marketing plan. Prerequisite: Browser and word processing courses or permission of instructor. (SFCC)

BUS 109 – Internet Marketing (3 cr)

Students focus on using the Internet as a communication medium to market business. Elements of a marketing plan as they relate to e-commerce are introduced. Simple web site creation and promotion, on-line selling strategies, and the mechanics of e-commerce are presented. (SCC, SFCC)

BUS 110 – Number Skills (1 cr)

This class is a review of basic number skills both with and without an electronic calculator. Topics include the arithmetic functions of addition, subtraction, multiplication and division. (SFCC)

BUS 111 – Math Skills (1 cr)

This class focuses on the important math skills involved in the process of estimating numbers and using the worldwide metric system. Prerequisite: BUS 110 or BMC Math Skills Test. (SFCC)

BUS 112 – Advanced Calculator Skills (1 cr)

This class covers special functions and operations of an electronic calculator. Topics include accumulation, fractions, percentages, powers and using machine memory. Prerequisite: BUS 110. (SFCC)

BUS 113 – Essential Business Applications (1 cr)

This class focuses on essential applications of business math using the electronic calculator and computer. Topics include word problems, simple and compound interest, percentages, commissions, inventory and payroll. Prerequisite: BUS 112. (SFCC)

BUS 114 – Basic Retail Application (1 cr)

This class covers the math techniques used for merchandising operations such as cash and trade discounts; invoices and transportation costs; and markups, markdowns and markons while using the special features available on an electronic calculator. Prerequisite: BUS 112. (SFCC)

BUS 115 – Budgeting Skills (1 cr)

This class is a practical, basic guide to managing finances. Students prepare a workbook to set financial goals, prepare easy-to-use budget worksheets and keep track of spending. (SFCC)

BUS 116 – Cash, Checks and Credit Cards (1 cr)

This class introduces wise use of banking and financial services, including checking and savings accounts, cash machines, credit cards, consumer loans and dangers of overextending credit use. (SFCC)

BUS 117 – Smart Consumer Buying Techniques (1 cr)

This class covers special tips and techniques to help consumers make their money go farther. Topics include saving money on buying food, transportation, appliances, energy, clothes, housing, health care, leisure and other family needs. (SFCC)

BUS 118 – Managing Risk (1 cr)

This class covers the fundamental aspects of risk management, including home and auto insurance, health and disability insurance, and life insurance. (SFCC)

BUS 120 – International Business (5 cr)

Students investigate the importance of international business and trade within the U.S., the Pacific Northwest, and Washington State as a way of promoting economic growth and future job opportunities. International people management, international finance and accounting, and international legal and political considerations are emphasized. Other topics addressed are the effects of culture, politics, ethics and communication on international business practices, and overseas marketing and advertising, using an interdisciplinary and multicultural approach. International career options and business opportunities are discussed. (SCC, SFCC)

BUS 121 – Global Business Life and Culture (5 cr)

This is an interdisciplinary course designed to give students a broad overview of the business practice, culture and civilization of specific countries or regions. It uses a social, historical and cultural approach to various, contemporary, global societies and business practices. It includes lectures by U.S. and foreign faculty, supporting seminars, and related field trips and site visits. This course is offered only for SFCC students registered in the corresponding summer Study Abroad program. Prerequisite: Concurrent participation in summer Study Abroad program. (SFCC)

BUS 130 – International Finance (3 cr)

Students study the confusing world of international finance. Methods of payment for imports and receiving payment for exports are presented. National and international monetary systems, the role of foreign currency and foreign exchange, and international capital markets are emphasized. Basic concepts and practical applications and examples of international finance transactions are addressed. (SCC, SFCC)

BUS 140 – International Marketing (3 cr)

The problems of marketing in the international arena and how marketers approach and solve them are addressed in this course. Theory and practice of international marketing through the use of practical examples and actual case studies of international marketing organizations are emphasized. (SCC, SFCC)

BUS 150 – International Economics (2 cr)

Student's survey selected international economic institutions and problems. Trade, balance of payments, monetary relations, economic development and multinational corporations are discussed. The importance for students to have a better grasp of international economics institutions as the U.S. economy becomes more dependent on the world economy is stressed. (SCC, SFCC)

BUS 160 – International Management (3 cr)

This course is an overview of the complex, dynamic field of international management. Typical management functions (planning, organizing, staffing and controlling) focusing on cross-cultural and cross-national implications for business are emphasized. Recruitment, training, compensating and retention of a multinational workforce with an emphasis on increasing the effectiveness and efficiency of employees are covered. (SCC, SFCC)

BUS 170 – Export/Import Techniques (2 cr)

An overview of the steps involved in exporting or importing a product or service. Course covers the different aspects of export/import and assists in developing a working knowledge of various terms and techniques essential to success. Topics include pros and cons of export/import, sources of private and public advice and assistance, methods, channels of distribution, terms of payment, appropriate documentation, and sources of financing. (SFCC)

BUS 180 – Travel and Tourism (3 cr)

This course is an overview of the dynamic "world of travel" with an introduction to tourism and its international impact. Topics will include the who, why, what, when, where and how of travel. Emphasis is on organizing professional and personal travel as a life-enriching experience and exploring careers in the travel industry. (SFCC)

BUS 182 – Selling Travel (3 cr)

Focusing on the skills and techniques necessary for successful sales, this course concentrates on principles of selling and promoting travel. Students learn to reach a target market, discover client travel needs, present features and benefits, create positive client rapport, and close the sales. (SFCC)

BUS 185 – Travelography: Destinations for Business and Tourism (3 cr)

This course provides an introduction to the destinations and geographic background which are important for business and tourism. Topics include discussions of domestic and international sites (countries, continents, regions and cities), with an emphasis on locations, facilities, physical features, time, climate, weather, language, money, and other business and cultural implications for people traveling, or doing business at, different sites around the world. (SFCC)

BUS 186 – Customer Service for Travel (2 cr)

This class reviews marketing principles and selling skills for successful travel sales, including effective customer service techniques and strategies to build a loyal customer base. (SFCC)

BUS 187 – Making Travel Arrangements (2 cr)

This class assists people in making reservations and travel arrangements for hotel/motel accommodations, airline flights, rental cars, airport transfers and so on. Topics cover both personal travel and making arrangements for professional travel for others. (SFCC)

BUS 188 – Organizing and Leading Tours (2 cr)

This class is a practical guideline introducing the tools and techniques used in planning, organizing and leading tours. Topics range from arranging simple museum visits to the complex itinerary of an international trip. The course assists students in preparing for careers as tour guides, directors or planners. (SFCC)

BUS 190 – Call Center Job Preparation Skills (3 cr)

This course is designed to prepare students for the job search process. Topics included in the course are self-analysis, personal appearance and grooming, communicating ideas through written assignments and oral presentations, resume writing, employment letters, applications, interviewing practice, job search techniques, and call center functions. (SFCC)

BUS 191 – Job Success (1-3 cr)

A course or courses to include selected material from the following areas: self-analysis, goal setting, career exploration, personal appearance and grooming, resume writing, application letter writing, the employment interview, communication of ideas, interviewing practice, and other techniques of the job search. (SFCC)

BUS 192 – Special Business Topics (1-5 cr)

Students are provided a variety of pertinent, current business topics. Course content varies depending upon the number of credits and topics chosen. (SCC)

BUS 193 – Special Business Topics (1-5 cr)

Students are provided a variety of pertinent, current business topics. Course content varies depending upon the number of credits and topics chosen. (SCC)

BUS 194 – Special Business Topics (1-5 cr)

Students are provided a variety of pertinent, current business topics. Course content varies depending upon the number of credits and topics chosen. (SCC)

BUS& 201 – Business Law (5 cr)

Students learn fundamental principles of law and the legal system and their application and operation in society. Analysis of business fact situations, isolating issues and recognizing the need for appropriate legal counsel, and the exercise of preciseness of language and action in matters with legal significance are emphasized. (SCC, SFCC)

BUS 204 – Introduction to Law (5 cr)

Students study today's legal environment including the various types of law, analysis of the different courts and judicial systems. Tort law, consumer law, domestic relations and estate planning are emphasized. How judges make decisions and what type of relief they may grant are presented. (SCC)

BUS 209 – Internet Project (3 cr)

This is the final project and the capstone course for the Internet certificate program. Students are required to develop a complete marketing plan on the Internet/World Wide Web, which culminates in the creation of a home page for a real business. Prerequisite: GRDSN 126. (SFCC)

BUS 217 – Business Statistics (5 cr)

The application and interpretation of statistics are presented in this course. Descriptive and inferential statistical methods that are most useful in marketing and business research studies are emphasized. Prerequisite: MATH 099 with a 2.0 or better or appropriate placement scores. (SCC, SFCC)

BUS 280 – Human Relations in Business (5 cr)

The needs of the business or other formal work institutions and how they interact with individual needs are covered in this course. Leadership styles, formal organizational policies and procedures, and general cultural patterns to determine how humans act in a work environment are emphasized. The manager's role in creating an acceptable and satisfying organizational climate is covered. (SCC, SFCC)

BUS 284 – Special Business Topics (1-5 cr)

Students are provided a variety of pertinent, current business topics. Course content varies depending upon the number of credits and topics chosen. (SCC)

BUS 285 – Special Business Topics (1-5 cr)

Students are provided a variety of pertinent, current business topics. Course content varies depending upon the number of credits and topics chosen. (SCC)

BUS 286 – Special Business Topics (1-5 cr)

Students are provided a variety of pertinent, current business topics. Course content varies depending upon the number of credits and topics chosen. (SCC)

BUS 295 – Special Topics in Business (0.5-3 cr)

This course focuses on unique current issues affecting business and business people. The topics and content vary each quarter. Emphasis is on jurisdiction of local, state and federal agencies; professional career opportunities and qualifications for recruitment within these agencies; an overview of police problems and the scope of the law enforcement officer's role. (SFCC)

BUSINESS TECHNOLOGY**BT 100 – Beginning Keyboarding (1 cr)**

Students learn computer word processing skills using the keyboard and 10-key pad. Developing speed and accuracy is emphasized; no production work. SCC only: Grading option: Pass/fail. (SCC, SFCC)

BT 101 – Keyboarding (5 cr)

Students learn beginning computer keyboarding that includes the mastery of the alphabetic keyboard using the "key-by-touch" method. Word processing software is presented in conjunction with formatting theory for personal and business letters, memoranda, reports, centering and simple tabulation techniques. Students develop proofreading and editing skills. (SCC, SFCC)

BT 102 – Document Processing (5 cr)

This course covers formatting theory and application instruction for personal and business letters, tables, memoranda, and reports using word processing software. Commonly used word processing software features are presented. Instruction includes the development of proofreading, editing, formatting and mechanics of written expressions. Speed and accuracy are emphasized. This course is a continuation of BT 101 or utilized as a refresher course for those who have been away from a keyboard. Prerequisite: BT 101 and 30 wpm. (SCC, SFCC)

BT 103 – Formatting (5 cr)

Word processing software features, letters, memoranda, tables, reports and special business forms formats are taught. Techniques for speed and accuracy development are presented, and instruction includes the development of proofreading, editing, formatting and mechanics of written expression. Prerequisite: BT 102 or permission of instructor. (SFCC)

BT 104 – Basic Grammar for Business I (5 cr)

Students review the fundamentals of grammar including basic parts of speech, writing simple sentences, and subject/verb identification and agreement. Prerequisite: Reading assessment score of 20-39 percentile. (SCC)

BT 105 – Basic Grammar for Business II (5 cr)

Students review fundamental writing skills with major emphasis on improving sentence structure and grammar. Accuracy in spelling, punctuation, vocabulary and proofreading is stressed. Prerequisite: BT 104. A reading score of at least 33 on the ASSET or 59 on the COMPASS is acceptable in lieu of BT 104. (SCC)

BT 107 – Business Communications (3 cr)

This class offers a comprehensive review of correct grammar usage and spelling. (SFCC)

BT 108 – Business Communications (3 cr)

This class concentrates on the mechanics of punctuation and continued review of spelling. Prerequisite: BT 107. (SFCC)

BT 109 – Business Communications (5 cr)

Business students learn basic writing skills including grammar, punctuation, spelling and vocabulary. Business terminology and usage are emphasized. Prerequisite: Must meet minimum standard on assessment test or 2.0 grade or better in BT 105. (SCC)

BT 121 – Office Procedures Update (1-3 cr)

A course or courses to include selected material from the following procedural areas: receptionist duties, telephone skills, mail handling, reprographics, ordering and storage of supplies, office careers, travel arrangements, meeting planning and taking of minutes, filing and records management, financial transactions, time management, and office management. (SCC, SFCC)

BT 122 – Office Skills Update (1-3 cr)

This course includes selected material from the following skill areas: key-boarding, formatting, notetaking, shorthand review, shorthand transcription, dictation, machine transcription and text editing/word processing. (SCC, SFCC)

BT 123 – Written Communication Skills Update (1-3 cr)

This course includes selected materials from the following skill areas: basic business grammar, grammar and punctuation review, proofreading, editing, business letter composition, and report preparation. (SCC, SFCC)

BT 124 – Office Automation Update (1-3 cr)

This course includes selected material from the following areas: technology used in today's offices; application and evaluation of technological information; integration of applications; information management; organization and control; future technological developments and expectations; and technology as applied to calendaring, electronic mail, spreadsheets, records management and networking. (SCC, SFCC)

BT 125 – Office Politics (1-3 cr)

Students learn the definition of office politics using selected material in today's office environment. Self-analysis in a political setting; tools of political analysis; victims of office politics; when to change jobs; how politics affect women; minorities, older and younger workers; extraordinary politics; and politics in profit and nonprofit organizations are emphasized. Setting objectives and goals, and planning strategies are discussed. (SCC)

BT 126 – Spelling and Vocabulary (1-3 cr)

This course includes selected material from the following areas: spelling, prefixes, homonyms, synonyms, confusables, compound nouns, compound adjectives, capitalization, bias-free terms and other spelling demons; computer-related vocabularies, business-related vocabulary, important abbreviations and symbols; and use of the dictionary and thesaurus. (SCC, SFCC)

BT 127 – Human Relations and Professional Development (1-3 cr)

This course includes selected material from the following areas: how to get along with people on the job and in your life; the importance of communication; the qualities of business success; your professional and personal image; and the elements of personal development covering grooming, business dress, nutrition and exercise. (SCC, SFCC)

BT 128 – Office Math Applications (1-5 cr)

Students learn mathematical concepts for the office employee including review of addition, subtraction, multiplication and division, and the use of fractions, percentages and decimals as they pertain to business office applications. Students work with numbers and solve business problems using a 10-key pad including special features found on most modern business desk calculators and apply basic business math formulas. (SCC)

BT 135 – Introduction to Machine Transcription (3 cr)

This is an introductory course using transcription machines with emphasis on developing listening skills and basic machine transcription techniques for document processing. Transcription is done applying correct grammar, punctuation, formatting, capitalization, number expression and abbreviations. (SFCC)

BT 140 – Notetaking (5 cr)

Students learn alphabetic shorthand, an abbreviated writing system based on longhand and phonics. Students, secretaries, managers and others who take dictation, classroom notes, telephone messages and meeting minutes are presented with techniques in writing notes quickly and legibly with a minimum of learning time. Prerequisite: Basic keyboarding skills. (SFCC)

BT 142 – Transcription Skills (3 cr)

This course includes introduction and development of basic transcription skills using notes taken from dictation. The dictation includes letters, memos, minutes of meetings and reports. Other important components of the course are spelling and punctuation review. (SFCC)

BT 151 – Business Student Preparation (5 cr)

Students increase the ability to succeed in college business courses. Skills necessary to reach educational objectives are presented including planning, test taking, communication skills, study techniques, question and answering skills, library use, and personal issues that face many students as they complete their business course requirements. (SCC)

BT 155 – Records Information Management (3 cr)

Records management emphasizes the principles and practices of effective management of information for both manual indexing and automated records systems. The basic manual indexing systems concept covers all standard indexing rules published by the Association of Records Managers and Administrators (ARMA). The automated records systems provide the opportunity to work with the kinds of computer databases encountered in business. The process of coordinating both the manual indexing rules and computer indexing rules are stressed. The course emphasizes the need to understand the record's life cycle—from creation to disposition—within the structure of any given organization. The course stresses the federal legislation designed to protect information and the privacy of the individual or organization. The course prepares the student for several career options within the records/information management field. Prerequisite: 1 credit of CAPPS 114. (SFCC)

BT 160 – Job Preparation Techniques (3 cr)

Students prepare for the job search process. Self-analysis, goal setting, personal appearance and grooming, communicating ideas through individual and group presentations, resume writing, application cover letter writing, interviewing practice, and other techniques are emphasized. Prerequisite: Second-year student or permission of instructor. (SCC, SFCC)

BT 165 – Word Processing (5 cr)

Students learn word processing functions such as formatting, maintaining and printing documents including tables and long manuscripts. Using writing tools, manipulating text among and within documents, creating and formatting tables, adding visual appeal, creating charts, and importing data are emphasized. Formatting with macros and styles, and sorting and selecting text and data are presented using Microsoft Word. Critical thinking skills, the mechanics of written expression, proofreading, editing and formatting are included. Prerequisite: BT 102 with a minimum of 2.0 grade or permission of instructor. (SCC)

BT 170 – WordPerfect 1 (2 cr)

This course is the introductory course in a series of courses designed to develop proficiency in the use of WordPerfect. The focus of this course is basic formatting and editing applications. Prerequisites: Basic keyboarding skill. (SFCC)

BT 172 – Publisher (2 cr)

This class offers beginning and advanced instruction in Microsoft Publisher. (SFCC)

BT 175 – Voice Processing (2 cr)

Students learn skills necessary to create documents using Microsoft Office Speech Recognition to improve writing, increase productivity, avoid injury and overcome handicaps. Students also learn to create a voice profile, use voice training to improve speech recognition, dictate text and voice commands. This course is offered online only. Grading option: Pass/fail. (SCC)

BT 180 – E-Commerce for the Office (3-5 cr)

Students search and evaluate product sites on the Internet. Learning to secure transactions, discuss privacy issues and perform career searches is emphasized. (SCC)

BT 186 – Customer Service for Travel (2 cr)

This class reviews marketing principles and selling skills for successful travel sales, including effective customer service techniques and strategies to build a loyal customer base. (SFCC)

BT 196 – Skillbuilding (1 cr)

This individualized program builds keyboarding speed and improves accuracy. It may be taken a maximum of three times. Grading option: Pass/fail. Prerequisite: Ability to keyboard by touch. (For SCC: BT 196. For SFCC: BT 196, 197, 199). (SCC, SFCC)

BT 197 – Skillbuilding (1 cr)

This individualized program builds keyboarding speed and improves accuracy. It may be taken a maximum of three times. Grading option: Pass/fail. Prerequisite: Ability to keyboard by touch. (For SCC: BT 196. For SFCC: BT 196, 197, 199). (SFCC)

BT 199 – Skillbuilding (1 cr)

This individualized program builds keyboarding speed and improves accuracy. It may be taken a maximum of three times. Grading option: Pass/fail. Prerequisite: Ability to keyboard by touch. (For SCC: BT 196. For SFCC: BT 196, 197, 199). (SFCC)

BT 201 – Information Processing (5 cr)

Information processing techniques using word processing, database, spreadsheet and presentation software are taught in this course. Students complete office projects requiring critical thinking and problem-solving skills. Assignments include producing reports using information from databases and spreadsheets, formatting intricate tables and graphs, and correspondence with special features. Prerequisite: For SCC: BT 165 with a 2.0 or better. For SFCC: Permission of instructor. (SCC, SFCC)

BT 202 – Advanced Information Processing (5 cr)

Students utilize advanced features of spreadsheet, database and presentation software and integrate these software programs with word processing. Critical thinking and problem-solving skills are emphasized by focusing on proofreading, editing and the mechanics of written expression. Prerequisite: BT 201. (SCC)

BT 231 – Office Procedures (5 cr)

This course presents the basic office duties of a receptionist. Answering the telephone, mail handling, reprographics, ordering and storage of supplies. Professionalism and human relations concepts also are presented. Guest speakers and tours may be scheduled. Prerequisite: BT 102. (SCC, SFCC)

BT 232 – Office Procedures II (5 cr)

This course prepares students to handle advanced office tasks required of an administrative assistant. Projects require using technology and organizational skills in handling office communications and managing meetings. Critical-thinking and decision-making abilities are emphasized. Prerequisite: Permission of instructor. (SFCC)

BT 233 – Directed Office Practice (3-6 cr)

Students perform at beginning, intermediate and/or advanced levels of office work in a professional environment. A minimum of one or two hours of lab daily is required. Prerequisite: Permission of instructor. (SCC)

BT 234 – Administrative Professional Practicum (5 cr)

Students gain hands-on experience using current integrated office software while working at their own office work stations using electronic mail, calendaring, scheduling and graphics. Students complete simulated office projects requiring application of information, work organization, perception, human relations skills, prioritizing and decision-making skills. Prerequisite: BT 262 and permission of instructor. (SFCC)

BT 235 – Machine Transcription (5 cr)

Machine transcription techniques are presented in this course and demonstrated with emphasis on language mechanics, including spelling, punctuation, grammar, style, capitalization, abbreviation, word division and expression of numbers. Word processing software is used to achieve these goals. Prerequisite: For SCC: BT 109 with a 2.0 and 50 wpm. For SFCC: BT 102, 107, 108 or permission of instructor. (SCC, SFCC)

BT 240 – Administrative Office Procedures (8 cr)

This course provides office-related situations including decision-making and critical thinking activities. Planning international travel, developing and conducting a seminar, choosing resources, and selecting guest presenters are included. Tours of local businesses are scheduled. Prerequisite: BT 235 with a 2.0 grade or better and keyboarding speed of at least 50 wpm. (SCC)

BT 241 – Office Politics (3 cr)

This course provides insight into the political and working relationships encountered in the business world. Emphasis is given to the importance of self-understanding and the bearing this has on working successfully in a business environment. (SCC)

BT 250 – Information Technology (5 cr)

This course provides an overview of office information systems for students entering administrative office careers. Students explore office technology. Microcomputer operation and hardware, the Internet, multimedia, electronic record systems are addressed. Students learn to evaluate and purchase office technology, set up a microcomputer, install software, and identify and troubleshoot problems commonly faced by administrative office professionals. (SCC)

BT 255 – Business Productivity Tools (3 cr)

This course is designed to prepare students to use computerized business productivity tools to support the functions of management: planning, organizing, leading and controlling. Students will design, customize and implement a variety of business applications. Prerequisite: 1 credit of CAPPs 112. (SFCC)

BT 257 – Presentation Graphics/Publishing (5 cr)

This course is designed to prepare students to create desktop publishing documents for a typical office. Students will be able to design a variety of publications used in an office such as newsletters, letterheads, flyers, and brochures using the latest software. Students will apply design concepts and use appropriate media to present material. Prerequisite: Permission of instructor. (SCC, SFCC)

BT 258 – Desktop Publishing (5 cr)

This course is designed to prepare students to create desktop publishing documents for a typical office. Students will be able to design a variety of publications used in an office such as newsletters, letterheads, flyers, and brochures using the latest software. Students will apply design concepts and use appropriate media to present material. Prerequisite: Permission of instructor. (SFCC)

BT 260 – Administrative Office Management (5 cr)

Students are presented with the fundamental principles of office organization and management as applied to business enterprises. Flow of work, routines, equipment and systems are studied. Prerequisite: Second year standing. (SCC, SFCC)

BT 262 – Word Processing (5 cr)

Students accomplish entry-level competence on word processors and knowledge of procedures in word processing centers. Assignments are given to develop proofreading, editing, formatting, mechanics of written expression and critical thinking skills. This course consists of three hours of lecture and four hours of skill development, two of which are to be arranged. Prerequisite: BT 102. (SFCC)

BT 263 – Integrated Office Applications (5 cr)

Students use advanced software and learn to process handwritten, dictated and stored office documents. Developing, formatting, proofreading and editing documents also are included. The mechanics of written expression, critical thinking skills, technical problem solving and software related troubleshooting skills are emphasized. Prerequisite: For SCC: BT 201 and BT 235 with a 2.0 or better and keyboarding at 50 wpm. For SFCC: BT 262. (SCC, SFCC)

BT 265 – Information Processing Practicum (3-6 cr)

Students input, edit, revise, merge and/or print documents on word processing equipment in an office environment to produce manuals, tests, course outlines, mailing lists, correspondence and other documents. Labeling and filing rules for electronic media are presented following the directions of users. Prerequisite: Permission of instructor. (SCC)

BT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

BT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

BT 270 – Office Computer Support (3 cr)

Students learn how an employee in an office can troubleshoot, maintain office computers, networks, and peripherals. Practical hands-on experience emphasizes the analysis of problems. Prerequisite: IS 120, 160 or permission of instructor. Recommended second year course. (SFCC)

BT 272 – Business Correspondence (5 cr)

Students learn to compose common types of business correspondence including the various types of letters, memos and reports. Prerequisites: SCC: Typing proficiency and BT 109 with a 2.0 or better and SFCC: BT 107, 108 or ENGL& 101. (SCC, SFCC)

BT 280 – Project Management for the Office (3-5 cr)

Students learn the key elements of project management. Students also conduct problem analysis, and develop action plans and cost/benefit analysis using project management software to assist in developing and managing their plans. Prerequisite: Second-year student. (SCC)

BT 285 – Administrative Professional Internship (2-3 cr)

Students apply their office and human relation skills during this two-week assignment at an area business. Internship sites are tailored to meet individual student needs to complement the student's program. SFCC Grading option: Pass/Fail. Prerequisite: For SFCC: BT 160 or concurrent enrollment in BT 160 and permission of instructor. (SCC, SFCC)

BT 288 – Cooperative Education Work Experience (No Seminar) 1-18 cr

For course description, see Cooperative Education. (SCC)

CAD COMPUTER AIDED DESIGN AND DRAFTING**CAD 105 – Basic Blueprint Reading (3 cr)**

This course introduces students to blueprint reading with emphasis on the interpretation of a variety of drafting styles. Students practice freehand sketching. (SCC)

CAD 114 – Engineering Graphics 1 (4 cr)

This course introduces students to fundamental drafting practices with emphasis on drawing methods used in architecture, mechanical engineering, civil/structural engineering and electronics. Drafting media, drawing reproduction and storage, the format of drawing arrangement, and the drafting tools used in manual drafting also are emphasized. (SCC)

CAD 124 – Engineering Graphics 2 (5 cr)

This course is an extension of CAD 114 with emphasis on drawing methods used in engineering. Dimensioning techniques, auxiliary views and sectioning methods also are emphasized. Prerequisite: CAD 114 and MET 125 or CAD 129. (SCC)

CAD 129 – Computer Aided Drafting (5 cr)

Students are introduced to the fundamentals of computer aided design (CAD) drafting. AutoCAD software using the principles of mechanical, architectural, civil and electrical/electronics is emphasized. This course is for students focused specifically in CAD, MET and engineering technology programs. Prerequisite: MET 101; CAD 114 or approved equivalent. (SCC)

CAD 131 – Dimensioning and Tolerancing (3 cr)

This course introduces the use of geometric calculations and measuring instruments to determine true tolerances on detail drawings. Both linear tolerances and "Geometric Dimensioning and Tolerancing" formats are covered. Prerequisite: CAD 124, 129. (SCC)

See program/course abbreviation key on page 143.

CAD 132 – Engineering Graphics 3 (5 cr)

This course introduces the development of production-type working drawings. Drafting and CAD techniques used to create assembly and detail drawings in orthographic and pictorial formats are emphasized. Raw materials and general machine components also are introduced as well as the selection processes used in industry. Prerequisite: CAD 124 and MET 125 or CAD 129. (SCC)

CAD 135 – Schematics (3 cr)

This course introduces the basic electrical theory and the development and preparation of drawings for the manufacturing of electronic products. The combination of electronics, industrial electricity and hydraulic and pneumatic power components for machine control is emphasized. Types of drawings include schematic, logic, system, interconnection and wiring diagrams. An introduction and practice in programmable logic controls also is included. Prerequisite: MET 122. (SCC)

CAD 241 – CAD Solid Modeling (2-5 cr)

This course offers advanced computer aided drafting techniques in three-dimensional solid modeling. Individual part files, and application files in weldments and sheet metal are emphasized. Solid model prototype printing and CNC applications are also included. This course may be repeated up to a maximum of 5 credits. (SCC)

CAD 248 – Mechanical CAD Applications (4 cr)

This course introduces advanced concepts and applies CAD skills in mechanical engineering drafting and design projects. Students research and develop a comprehensive definition of this field as well as use CAD to create drafting projects and demonstrate the ability to present their projects in an engineering format. Prerequisite: CAD 132. (SCC)

CAD 252 – Advanced CAD (5 cr)

This course presents advanced concepts and applications for computer assisted drafting systems in an engineering environment. Advanced drafting techniques are included with emphasis on three-dimensional solid modeling. Software/hardware customization techniques including menus, start-up, CAD programming fundamentals and management skills are also emphasized. Prerequisite: CAD 241. (SCC)

CAD 258 – Schematic CAD Applications (4 cr)

This course introduces advanced concepts and applies CAD drafting skills in schematic engineering drafting and design projects. Students research and develop a comprehensive definition of this field as well as use CAD to create drafting projects and demonstrate the ability to present their projects in an engineering format. Prerequisite: CAD 132. (SCC)

CAD 259 – Architectural CAD Applications (4 cr)

This course introduces advanced concepts and applies CAD skills in architectural drafting and design projects. Students research and develop a comprehensive definition of this field as well as use CAD to create drafting projects and demonstrate the ability to present their projects in an engineering format. Prerequisite: CAD 132. (SCC)

CAD 260 – Fabrication and Piping CAD Applications (4 cr)

This course introduces advanced concepts and applies CAD drafting skills in sheet metal/HVAC fabrication drafting and piping drafting projects. Students research and develop a comprehensive definition of this field as well as use CAD to create drafting projects and then demonstrate the ability to present their projects in an engineering format. Prerequisite: CAD 132. (SCC)

CAD 261 – Project Design (4 cr)

This advanced course is structured to correlate all technical disciplines covered in physics, statics, strength of materials and mathematics. Power transmission systems and power requirements, design techniques for specific mechanical advantage, efficiency and friction loss in mechanical systems, linear and angular time-motion concepts, stress determination and analysis, and structural member sizing are emphasized. Results of projects are presented in a formal engineering report format. Prerequisite: MET 250. (SCC)

CAD 268 – Structural CAD Applications (4 cr)

This course introduces advanced concepts and applies CAD skills in structural engineering drafting and design projects. Students research and develop a comprehensive definition of this field as well as use CAD to create drafting projects and demonstrate the ability to present their projects in an engineering format. Prerequisite: CAD 132. (SCC)

CAD 269 – Civil CAD Applications (4 cr)

This course introduces advanced concepts and applies CAD drafting skills in civil engineering drafting and design projects. Students research and develop a comprehensive definition of this field as well as use CAD to create drafting projects and then demonstrate the ability to present their projects in an engineering format. Prerequisite: CAD 132. (SCC)

CARPENTRY AND CABINETRY**CARP 113 – Carpentry Math (5 cr)**

This course is an overview of basic math concepts and their applications to the carpentry field. (SCC)

CARP 114 – Transit Layout and Design (4 cr)

This course introduces students to the fundamentals of transit setup and use as it pertains to residential construction. Practical experience, including house layout, excavation, and foundation layout and design is emphasized. (SCC)

CARP 115 – Basic Construction Systems (7 cr)

This course is an introduction to residential construction methods and materials. Practical shop experience includes layout and design of footings and foundations; floor, wall, ceiling and roof framing; and materials estimation for all building aspects. (SCC)

CARP 123 – Cabinetry Math (3 cr)

This course continues with the concepts introduced in CARP 113. Linear, board, and square foot measurements, and using formulas to calculate material requirements and costs are emphasized. Prerequisite: CARP 113, 114, 115 or permission of instructor. (SCC)

CARP 124 – Cabinet Layout and Design (5 cr)

This course introduces the fundamentals of cabinet making. Design requirements, layout methods and installation practices are emphasized. An in-depth study of the types and uses of building materials and their application to cabinetry also is covered. Prerequisite: CARP 113, 114, 115 or permission of instructor. (SCC)

CARP 125 – Cabinet Construction (5 cr)

This course offers practical shop experience in layout, machining, and assembly of residential cabinetry. The use of tools such as table saws, jointers, radial arm saws, planers and shapers, and their use in the sizing, shaping, and preassembly process is emphasized. The application of hardware and plastic laminate countertops also is covered. (SCC)

CARP 126 – Cabinet Finishing (3 cr)

This course offers practical shop experience and techniques in finishing methods commonly used in the cabinetry field. Application of stains, sealers, and lacquers, and the proper use of a HVLP (high volume, low pressure spray system) is emphasized. Prerequisite: CARP 113, 114, 115 or permission of instructor. (SCC)

CARP 133 – Introduction to Estimating (3 cr)

This course offers practical applications and theory in estimation of materials for all phases of a building project. The use of construction plans and local building codes in determining the cost of materials is emphasized. Prerequisite: CARP 123, 124, 125, 126 or permission of instructor. (SCC)

CARP 134 – Introduction to Trim and Exterior Finish (3 cr)

This course introduces the materials and methods used in exterior finish work including door and window terminology, roofing and exterior siding materials, and soffit and gable end components. Prerequisite: CARP 113, 114, 115. (SCC)

CARP 135 – Practical Construction Applications (8 cr)

This course offers practical applications and on-the-job experience on an actual construction project utilizing all training experience and carpentry techniques learned in the previous quarters. An on-site project includes building layout, forming and pouring footings and walls, framing, roof construction, door and window installation, and exterior siding and trim work. Prerequisite: CARP 123, 124, 125, 126. (SCC)

CARP 136 – Residential Blueprint Reading (2 cr)

This course introduces the interpretation of residential blueprint reading emphasizing plan types, dimension lines, scaling prints, and the symbols and abbreviations common to a variety of construction plans. Prerequisite: CARP 123, 124, 125, 126 or permission of instructor. (SCC)

CARP 223 – Advanced Cabinetry Math (3 cr)

This course provides students with advanced skills in using formulas for calculation of a variety of projects. Prerequisite: CARP 123. (SCC)

CARP 224 – Advanced Cabinet Layout and Design (5 cr)

This course provides students with 77 hours of practical applications in the layout and design of custom cabinets. Prerequisite: CARP 124. (SCC)

CARP 225 – Advanced Cabinet Construction (5 cr)

This course provides practical shop experience in the cutting, marking and assembly of a variety of kitchen and bathroom cabinets. Students gain 110 hours of practice in advanced cabinet construction methods. Prerequisite: CARP 113, 114, 115. (SCC)

CARP 226 – Advanced Cabinet Finishing (3 cr)

This course provides a combination of lecture and advanced lab applications in the areas of staining, sealing and other finishing methods used on kitchen and bathroom cabinets. Prerequisite: CARP 126. (SCC)

CARP 243 – Plan Reading and Material Estimation (7 cr)

This course offers theory and practical applications in materials estimation for a building project. Interpretation of architectural drawings, plans and materials estimation from these drawings is emphasized. Prerequisite: CARP 133, 134, 135, 136 or permission of instructor. (SCC)

CARP 244 – Practical Framing Applications (9 cr)

This course offers practical applications in aspects of residential framing methods. Building layout procedures; floor, wall and roof framing methods are emphasized. Prerequisite: CARP 133, 134, 135, 136 or permission of instructor. (SCC)

CARP 251 – Introduction to Construction Trades (2 cr)

This course provides students with a broad overview of trades other than carpentry involved in a typical residential construction site. Topics include scheduling, basic concepts and terminology, and installation costs associated with each trade emphasizing, electrical, plumbing, and HVAC (heating, ventilation, air conditioning and refrigeration). (SCC)

CARP 253 – Exterior Estimating (7 cr)

This course offers practical applications in estimating that simulate on-the-job experience. Methods of calculating the quantity of materials needed for stairs, windows and doors, and insulating wall finishes are emphasized. Prerequisite: CARP 243, 244 or permission of instructor. (SCC)

CARP 254 – Exterior Application Methods (9 cr)

This course offers practical applications in exterior construction that simulate on-the-job experience. Exterior stair and wall treatments are emphasized. Prerequisite: CARP 243, 244 or permission of instructor. (SCC)

CARP 263 – Interior Estimating (7 cr)

This course offers practical applications in interior estimating that simulates on-the-job experience. Methods of calculating the quantity of materials needed for cabinetry, interior trim and finish work are emphasized. Prerequisite: CARP 253, 254 or permission of instructor. (SCC)

CARP 264 – Interior Application Methods (9 cr)

This course offers practical applications in residential construction emphasizing installation methods of interior trim and finish work. Cabinet construction and installation are covered in detail. Prerequisite: CARP 253, 254 or permission of instructor. (SCC)

CARP 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

CARP 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

CARP 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

CARP 290 – Service Learning (1-2 cr)

This course is a teaching strategy combined with learning that integrates meaningful voluntary community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. Grading option: Pass/fail. (SCC)

CHEMICAL DEPENDENCY PROFESSIONAL STUDIES**HSSUB 131 – Survey of Chemical Dependency (3 cr)**

Students are introduced to the many and varied drug-use behaviors that permeate our society, including psychosocial, physiological affects on personality, lifestyle and behavior. This is a foundational course for those who want to understand drugs and drug-use behavior. (SFCC)

HSSUB 141 – Law and Chemical Dependency Professionals (2 cr)

This course is designed for the student seeking information regarding legal issues in the field of chemical dependency counseling. Included are topics on the Washington Administrative Code (WAC) regarding completion of the necessary steps to become certified as a counselor, as well as current Driving Under the Influence of Intoxicants (DUI) laws. The course reviews the fundamental and technical aspects of laws and policies regarding alcohol and drug treatment, liability and malpractice. It also acquaints the students/professionals with their legal obligations to clients regarding confidentiality. (SFCC)

HSSUB 142 – Ethics in Chemical Dependency (2 cr)

This course is designed for the student seeking information regarding ethical issues in the field of chemical dependency counseling. Included are specific case studies to enable the student to distinguish between "ethics" and "laws", a comparison of ethical guidelines for counselors and social workers, development of an individual code of ethics and self-evaluation procedures, and development of professional skills that support ethical and effective practice as a member of the health care community, particularly regarding client-counselor relationships. (SFCC)

HSSUB 172 – Chemical Dependency in the Family (3 cr)

This course examines family systems in drug-free and drug-affected family disease and recovery. It examines how to facilitate change in those persons who are affected by the problems of an alcoholic or chemically dependent individual. Prerequisite: HSSUB 131 (SFCC)

HSSUB 176 – Chemical Dependency Counseling Techniques (5 cr)

This is an experiential course on techniques used in counseling. The student is exposed to basic counseling skills, strategies employed in chemical dependency treatment, counseling techniques used in addressing treatment needs and techniques used for removing blocks to recovery. Specific techniques are demonstrated and practiced that are appropriate for a variety of populations. Prerequisite: HSSUB 131 or permission of instructor. (SFCC)

HSSUB 179 – HIV/AIDS and Chemical Dependency (2 cr)

This course prepares chemical dependency professionals to respond to community, client and personal HIV-related needs that are effective and humane. Topics include risk assessment and intervention, legal and ethical issues, and vital information on other STDs and TB. (SFCC)

HSSUB 182 – Cultural Diversity in Addiction Counseling (2 cr)

This course provides the foundation information about multicultural perspectives as well as culturally sensitive counseling dynamics. (SFCC)

HSSUB 261 – Alcohol and Other Drug Information School: Instructor Training (3 cr)

This course is designed to teach chemical dependency counselors or trainees to conduct the 9-12 hour class that is required for nonchemically dependent persons convicted for driving under the influence. This course assists in developing curriculum planning and instruction skills. Prerequisite: HSSUB 131, 275. (SFCC)

HSSUB 275 – Physiological Actions of Alcohol and Drugs (5 cr)

This is a review of the pharmacology of psychoactive drugs. It is a research-based study of all categories of mind-altering substances. Prerequisite: HSSUB 131, 172. (SFCC)

HSSUB 277 – Group Process in Chemical Dependency Treatment (5 cr)

Designed to clarify the role and function of the chemical dependency counselor as a group facilitator. The student learns to use group therapy as an effective tool in working with people with alcohol/drug-related problems. Prerequisite: HSSUB 131 or permission of instructor. (SFCC)

HSSUB 279 – Case Management of Chemically Dependent Client (3 cr)

This course prepares students to function effectively as case managers. It includes detailed instruction in a systemized, uniform, problem-oriented recording system as well as methods and strategies employed in intervention, assessment, intake, treatment planning and case supervision in a variety of treatment settings. Prerequisite: HSSUB 131, 172. (SFCC)

HSSUB 280 – Advanced Case Management (3 cr)

This course allows addiction studies students the time necessary to become more proficient in the records management competencies. Prerequisite: HSSUB 279. (SFCC)

HSSUB 290 – Current Issues in Chemical Dependency (5 cr)

This is an advanced course for those completing or adding to new certification requirements. This is a multi-topic course addressing abnormal psychology and chemical dependency counseling, adolescent assessment in chemical dependency, and relapse prevention. Prerequisite: HSSUB 131, 275, 279. (SFCC)

CHEMISTRY**CHEM 101 – General Chemistry (5 cr)**

A survey of basic principles of general chemistry including the metric system theory and structure, periodic table, bonding, moles, stoichiometry, gases and enthalpy changes. Intended for nonscience majors. Prerequisite: A working knowledge of basic algebra. (SCC)

CHEM 104 – Fundamental Concepts of Chemistry (1-2 cr)

This is a short course of variable 1 to 2 credits, designed to introduce fundamental chemistry concepts by engaging students in hands-on learning activities. It provides students with basic knowledge of chemistry as support for further studies and personal enrichment. Content of the learning activities include atomic structure, periodic table, chemical bonding, types of reactions such as acid/base and redox, physical states of matter, molecular structure, polarity, measurements, mole concept and stoichiometry. Fulfills up to 2 credits of the laboratory science requirement for the A.A. degree. (SCC)

CHEM& 110 – Chemical Concepts w/Lab (5 cr)

A survey course of basic concepts in chemistry with emphasis on the application of these topics in society. Topics covered may include philosophy and methods of science, arithmetic calculations, the metric system, unit conversions, atomic theory, chemical bonding, types of chemical reactions, gases, nuclear chemistry and current chemical issues such as ozone layer depletion, energy and society, acid rain, polymers, or foods and drugs among others. Recommended for non-science and liberal arts majors. Fulfills laboratory science requirement for AA degree. (SCC, SFCC)

CHEM 114 – Introduction to Chemistry--Online (5 cr)

Introduction to chemistry is an entry-level chemistry class with a modest prerequisite of elementary algebra. This course is taught online via the Internet and is aimed at people who have no prior chemistry experience. This course does not qualify as a laboratory science. Prerequisite: Basic algebra. (SCC, SFCC)

CHEM 115 – Environmental Chemistry w/Lab (5 cr)

This introductory course explores a wide range of topics for nonscience majors. Topics include ozone and SMOG chemistry, airborne particulates and acid rain, the greenhouse effect and ozone layer, structure and chemistry of freshwater bodies, environmental impact of metals and organic pollutants, water soil contaminants and their persistence of contaminants, and soil degradation and chemical assessment of contaminants soils. Soil and water remediation, and energy utilization and conservation are emphasized. Fulfills laboratory science requirements for AA degree. (SCC)

CHEM 120 – Organic and Biochemistry for the Health Sciences (5 cr)

This course covers selected topics in organic and biochemistry including organic functional groups; organic reactions; intermolecular forces; structure and function of carbohydrates; lipids and proteins; enzymes; common metabolic pathways; causes and effects of arteriosclerosis; classes of drugs; actions and metabolism of drugs; and interferences and side effects of drugs. Additional topics may include hormone action, membrane properties, molecular immunology, neurotransmitters, muscle contractions and blood clotting. Prerequisite: CHEM& 121 or one year of high school chemistry within the last five years with a 2.0 GPA or better and enrolled in the invasive or noninvasive cardiovascular technology program. (SCC)

CHEM& 121 – Intro to Chemistry: w/Lab (5 cr)

A survey of inorganic chemistry for nursing and allied health sciences. Includes atomic structure, bonding periodicity, stoichiometry, gases, equilibrium, solution chemistry and nuclear chemistry. Fulfills laboratory science requirement for AA degree. (SCC, SFCC)

CHEM& 122 – Intro to Organic Chem: w/Lab (5 cr)

A survey of organic chemistry including structure, function and chemistry of aliphatic and aromatic hydrocarbons, alcohols, ethers, carboxylic acids, amines and related compounds; mechanisms, and stereochemistry. Fulfills laboratory science requirement for AA degree. Prerequisite: CHEM& 121 or permission of instructor. (SCC, SFCC)

CHEM& 123 – Intro to Biochemistry: w/Lab (5 cr)

A brief survey of biochemical principles, including structures of biomolecules, enzymatic catalysis, thermodynamics, metabolic pathways, genetic expression and biotechnology. Fulfills laboratory science requirement for AA degree. Prerequisite: CHEM& 122 or permission of instructor. (SCC, SFCC)

CHEM& 140 – General Chem Prep with Lab (5 cr)

A survey course of basic topics in chemistry, which may include philosophy and methods of science, arithmetic calculations, the metric system, unit conversions, atomic theory, chemical bonding, types of reactions, stoichiometry, gases, solutions, acid-base chemistry, nuclear chemistry, kinetic molecular theory, equilibrium and redox. Recommended for students who plan to take CHEM& 161 but have not had High School chemistry or for students that want to fulfill laboratory science requirement for AA degree. (SCC, SFCC)

CHEM& 161 – General Chem: w/Lab I (5 cr)

This series offers rigorous instruction in general chemistry. Topics include measurements, atomic structure, ionic and molecular compounds, aqueous solutions and molarity, chemical reactions, stoichiometry, gases, quantum theory and electronic structure, periodicity, chemical bonding, molecular geometry, solid and liquid states, solutions, chemical kinetics, chemical equilibrium, acids and bases, solubility equilibria, thermo chemistry and chemical thermodynamics, and electrochemistry. Other topics selected at the discretion of the instructor include nuclear chemistry, coordination chemistry, environmental chemistry, organic and biochemistry, modern materials, etc. Lab involves both qualitative and quantitative aspects of chemistry with necessary accuracy for such work. Note: the topics in this three-quarter sequence may be presented in various orders depending on the institution and the text used. Students are strongly encouraged to complete all three courses at the same institution to help ensure coverage of the full range of

important topics in general chemistry. Prerequisite: Currently enrolled in or have taken: MATH& 141 or higher level math courses, or permission of instructor. Recommended: One year of high school chemistry with a 2.0 grade or better or CHEM& 110 or CHEM& 140. (SCC, SFCC)

CHEM& 162 – General Chem w/ Lab II (5 cr)

This series offers rigorous instruction in general chemistry. Topics include measurements, atomic structure, ionic and molecular compounds, aqueous solutions and molarity, chemical reactions, stoichiometry, gases, quantum theory and electronic structure, periodicity, chemical bonding, molecular geometry, solid and liquid states, solutions, chemical kinetics, chemical equilibrium, acids and bases, solubility equilibria, thermo chemistry and chemical thermodynamics, and electrochemistry. Other topics selected at the discretion of the instructor include nuclear chemistry, coordination chemistry, environmental chemistry, organic and biochemistry, modern materials, etc. Lab involves both qualitative and quantitative aspects of chemistry with necessary accuracy for such work. Note: the topics in this three-quarter sequence may be presented in various orders depending on the institution and the text used. Students are strongly encouraged to complete all three courses at the same institution to help ensure coverage of the full range of important topics in general chemistry. Prerequisite: CHEM& 161 or permission of instructor. (SCC, SFCC)

CHEM& 163 – General Chem w/ Lab III (5 cr)

This series offers rigorous instruction in general chemistry. Topics include measurements, atomic structure, ionic and molecular compounds, aqueous solutions and molarity, chemical reactions, stoichiometry, gases, quantum theory and electronic structure, periodicity, chemical bonding, molecular geometry, solid and liquid states, solutions, chemical kinetics, chemical equilibrium, acids and bases, solubility equilibria, thermo chemistry and chemical thermodynamics, and electrochemistry. Other topics selected at the discretion of the instructor include nuclear chemistry, coordination chemistry, environmental chemistry, organic and biochemistry, modern materials, etc. Lab involves both qualitative and quantitative aspects of chemistry with necessary accuracy for such work. Note: the topics in this three-quarter sequence may be presented in various orders depending on the institution and the text used. Students are strongly encouraged to complete all three courses at the same institution to help ensure coverage of the full range of important topics in general chemistry. Prerequisite: CHEM& 162 or permission of instructor. (SCC, SFCC)

CHEM& 241 – Organic Chem I (3 cr)

This course covers structure, bonding, molecular properties, an overview of organic reactions, and stereochemistry, with emphasis on the nomenclature, physical properties, chemical reactivity mechanisms and chemical reactions of the following organic families: alkanes, cycloalkanes, alkenes, alkynes and alkylhalides. Prerequisite: CHEM& 163 or equivalent and concurrent enrollment in CHEM& 241, CHEM& 251. (SCC, SFCC)

CHEM& 242 – Organic Chem II (3 cr)

This course is a continuation of CHEM& 241 in which the study of organic families continues with aromatic compounds (benzene), alcohols, thiols, ethers, epoxides, sulfides, aldehydes and ketones. Spectroscopy (IR, UV, NMR, MS) also are discussed. Prerequisite: CHEM& 241, CHEM& 251 and concurrent enrollment in CHEM& 252. (SCC, SFCC)

CHEM& 243 – Organic Chem III (3 cr)

This course is a continuation of CHEM& 242 and focuses on the properties and chemical reactivity, mechanisms, nomenclature and spectroscopy of the rest of the organic families which include carboxylic acids and derivatives (acid halides, acid anhydrides, esters, amides, and nitriles), carbonyl alpha-substitution reactions, carbonyl condensation reactions, aliphatic amines, arylamines and phenols. Optional subjects are biomolecules (carbohydrates, amino acids, proteins, lipids, heterocycles and nucleic acids). Prerequisite: CHEM& 242, CHEM& 252 and concurrent enrollment in CHEM& 253. (SCC, SFCC)

CHEM& 251 – Organic Chem Lab I (2 cr)

This course involves experiments that demonstrate the techniques used in organic synthesis, isolation and purification of organic compounds. These techniques include recrystallization, extraction, chromatographic techniques, distillation techniques, sublimation, melting point determination and reflux. Prerequisite: Concurrent enrollment in CHEM& 241. (SCC, SFCC)

CHEM& 252 – Organic Chem Lab II (2 cr)

This course uses experiments to support lecture in the mechanistic approach of chemical synthesis and instrumentation. Prerequisite: CHEM& 241, CHEM& 251 and concurrent enrollment in CHEM& 242. (SCC, SFCC)

CHEM& 253 – Organic Chem Lab III (2 cr)

This course supports the concepts and mechanisms discussed in CHEM& 243 with organic synthesis experiments. Prerequisite: CHEM& 242, CHEM& 252 and concurrent enrollment in CHEM& 243. (SCC, SFCC)

CHINESE**CHIN& 121 – Chinese I (5 cr)**

Students are introduced to the Chinese language and the current use of simplified characters. Official Mandarin Chinese is used for beginners using Pinyin (Chinese sound system). This course maintains regional standards for competency and vocabulary. Language lab is required. (SCC, SFCC)

CHIN& 122 – Chinese II (5 cr)

Students continue with the concepts introduced in CHIN& 121 to learn the Chinese language and current use of simplified characters. Official Mandarin Chinese is used for beginners using Pinyin (Chinese sound system). This course maintains regional standards for competency and vocabulary. Language lab is required. Prerequisite: CHIN& 121 or permission of instructor. (SCC, SFCC)

CHIN& 123 – Chinese III (5 cr)

Students continue with the concepts introduced in CHIN& 122 to learn the Chinese language and current use of simplified characters. Official Mandarin Chinese is used for beginners using Pinyin (Chinese sound system). This course maintains regional standards for competency and vocabulary. Language lab is required. Prerequisite: CHIN& 122 or permission of instructor. (SCC, SFCC)

CHIN 141 – Chinese Conversation and Culture (5 cr)

This course offers an option for students who are interested in Chinese language and culture. Concepts presented include Taoism, contemporary issues, Chinese cuisine and cooking skills, survival speaking skills and other select topics. (SCC)

CHIN 224 – Modern China-Educational Tour (3-10 cr)

This course offers students a life-changing, direct cultural experience in China. Interaction with Chinese college students and using the Chinese language to build bridges of understanding between Chinese and American students are emphasized in this course. Prerequisite: CHIN& 121, 141 or permission of instructor. (SCC)

CHIN 241 – Chinese Conversation and Culture (5 cr)

This course gives students an opportunity to apply new language and cultural skills in group settings and interpersonal conversations. (SCC)

CIVIL ENGINEERING TECHNOLOGY**CET 111 – Technical Math (8 cr)**

This course introduces theory and practical applications of math concepts emphasizing the fundamentals of algebra. Prerequisite: Concurrent enrollment in CET 112 and 113. (SCC)

CET 112 – Plan Reading (4 cr)

Students learn to read architectural and engineering plans. Practical applications in quantity take off are presented. Prerequisite: Concurrent enrollment in CET 111, 113. (SCC)

CET 113 – Drafting (4 cr)

Students use hand drafting instruments in pencil and ink techniques in a lab setting. Prerequisite: Concurrent enrollment CET 111, 112. (SCC)

CET 121 – Applied Technical Math (7 cr)

This course continues with the concepts introduced in CET 111 emphasizing geometry and trigonometry and their applications to surveying and civil engineering. Prerequisite: CET 111 and concurrent enrollment in CET 122, CET 123. (SCC)

CET 122 – Surveying Theory (5 cr)

Students are introduced to the practices and methods of surveying using instruments. The application of mathematical skills necessary for surveying is emphasized. Prerequisite: Concurrent enrollment in CET 121, CET 123. (SCC)

CET 123 – Introduction to Civil Computer Aided Design (6 cr)

This course introduces the principles of computer aided design and its application to the engineering profession. Prerequisite: CIS 105. (SCC)

CET 125 – Plan Reading (5 cr)

This course continues with the concepts introduced in CET 112. Architectural, bridge and highway plans are emphasized. An extensive examination of construction methods and terms is presented. Prerequisite: CET 112 or permission of instructor. (SCC)

CET 133 – Field Surveying (8 cr)

This course introduces practical applications in surveying methods emphasizing the use of surveying instruments and tools to complete level and traverse closures, circular curve layouts, and topographic surveying. Prerequisite: CET 121, 122, 123 and concurrent enrollment in CET 136, 161. (SCC)

CET 136 – Statics (6 cr)

This course introduces the effect of forces acting on rigid bodies emphasizing the development of the ability to use mathematics to solve practical problems encountered in all engineering disciplines. Prerequisite: CET 121 and concurrent enrollment in CET 133, 161. (SCC)

CET 137 – Engineering Problems (3 cr)

Students are introduced to computer applications utilized in the solution of engineering problems. Computer software such as spreadsheets and BASIC language for problem solving is emphasized. Graphing, logarithms and statistics are presented. Prerequisite: CET 111, 121, CIS 105. (SCC)

CET 161 – Land Surveying (5 cr)

Students study the practices and methods of land surveying in depth. State laws, requirements, statutes and codes are examined. Prerequisite: Concurrent enrollment in CET 133, 136. (SCC)

CET 230 – Construction Process I (3 cr)

Students are introduced to the construction industry with discussion of the relationships between the owner, contractor and design professional. Prerequisite: CET 257 and concurrent enrollment in CET 256, 261. (SCC)

CET 232 – Construction Process II (2 cr)

This course continues with the concepts introduced in CET 230 with emphasis on project scheduling using the critical path method and computer software. Prerequisite: CET 230 and concurrent enrollment in CET 258, 264. (SCC)

CET 242 – Advanced Surveying (6 cr)

This course introduces advanced concepts in the theory and application of field and office practices required for route surveying and road design. Prerequisite: CET 123, 133 and concurrent enrollment in CET 243, 253. (SCC)

CET 243 – Advanced Civil Computer Aided Design (6 cr)

This course presents an extensive study and practical application of Land Development Desktop software. Prerequisite: CET 123 and concurrent enrollment in CET 242. (SCC)

CET 252 – Hydraulics I (6 cr)

This course is an introduction to the theory and practical application of water hydraulics and its relationship to the civil engineering profession. Areas of emphasis include fluid statics, buoyancy and general energy equation for pressure flow, and calculation of major and minor energy losses in pressure flow systems. Prerequisite: CET 253 and concurrent enrollment in CET 254, 257. (SCC)

CET 253 – Strength of Materials (5 cr)

This course is an introduction to the study of the relationship between external forces acting on elastic bodies and the internal stresses and strains generated by these forces. Practical applications include compression, shear and tension tests on wood and steel samples. Prerequisite: CET 136 and concurrent enrollment in CET 242, 243. (SCC)

CET 254 – Structures (5 cr)

Students study structural design of beams and columns in wood and steel with a review of building types. Lab applications such as bending tests on wood samples are included. Prerequisite: CET 253 and concurrent enrollment in CET 252, 257. (SCC)

CET 256 – Hydraulics II (3 cr)

This course continues with the concepts introduced in CET 252 with emphasis on the hydraulics of open channel flow and Manning's equation. Hydrology and storm water management topics are presented. Prerequisite: CET 252 and concurrent enrollment in CET 230, 261. (SCC)

CET 257 – Construction Materials I (6 cr)

Theory and practical application in the testing and use of construction materials including aggregates and soils is presented. Prerequisite: Concurrent enrollment in CET 252, 254. (SCC)

CET 258 – Construction Materials II (3 cr)

This course is a continuation of the theory and lab applications presented in CET 257 with emphasis on the use and testing of asphalt and masonry. Prerequisite: CET 257 and concurrent enrollment in CET 232, 264. (SCC)

CET 261 – Concrete (3 cr)

Students are introduced to the study of concrete as a construction material. Construction specifications and plan reading pertinent to the ICBO Special Inspector exam are presented. Prerequisite: CET 254, 257 and concurrent enrollment in CET 230, 256. (SCC)

CET 263 – Strength of Materials (5 cr)

This course continues with the concepts introduced in CET 253 with emphasis on the analysis and design of elementary wood and steel structural parts used as beams and columns. Prerequisite: CET 253 or permission of instructor. (SCC)

CET 264 – Design Project (3 cr)

This course offers a team design project for CET graduating students that includes all of the design and drawing necessary for a specified engineering or surveying project. Prerequisite: CET 243, 252, 254, 257 and concurrent enrollment in CET 232, 258. (SCC)

CET 265 – Special Problems (1-10 cr)

Faculty supervise this independent study on a subject agreed upon by the instructor and student. Students may write a technical paper, work out advanced engineering problems, or design and draft a survey or structural project. Prerequisite: Permission of instructor. (SCC)

CET 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

CET 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

CET 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

COMMUNICATION STUDIES**CMST& 101 – Introduction to Communication (5 cr)**

This course surveys the field of communication. It teaches students the theories and skills associated with effective interpersonal, small group, and public communication. Emphasis is on in-class activities and on improving the student's confidence in a variety of communication settings. Students receive at least 11 (eleven) hours of instruction in topical research, speech organization and support, and writing expository and persuasive prose for the purpose of oral delivery in an academic setting. Prerequisite: SFCC only: recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

CMST 103 – Effective Listening (3 cr)

Most people assume they are effective listeners; however, according to listening expert Dr. Ralph Nichols, college students test at about 25 percent accuracy in their listening skills. This course is designed to help students assess their listening and learning styles and to develop those skills necessary for success in college and in the job market. (SCC)

CMST 104 – College Ambassadors (1-3 cr)

This unique course provides links for students from the U.S. and those who have English as a second language. Students work one-on-one with international students while learning about various cultures and building friendships. Students may not exceed 6 credits for the series. Prerequisite: CMST 227 or permission of instructor. (SCC)

CMST 105 – College Ambassadors (1-3 cr)

This unique course provides links for students from the U.S. and those who have English as a second language. Students work one-on-one with international students while learning about various cultures and building friendships. Students may not exceed 6 credits for the series. Prerequisite: CMST 227 or permission of instructor. (SCC)

CMST 106 – College Ambassadors (1-3 cr)

This unique course provides links for students from the U.S. and those who have English as a second language. Students work one-on-one with international students while learning about various cultures and building friendships. Students may not exceed 6 credits for the series. Prerequisite: CMST 227 or permission of instructor. (SCC)

CMST 107 – ESL Speech (5 cr)

This is an English communication course offered for students whose native language is not English. The emphasis of the course is to learn the sounds, rhythm, stress and intonation of English; to develop listening skills, articulation skills, pronunciation skills; and to practice idiomatic English. (SFCC)

CMST 110 – Voice and Articulation (3 cr)

This course teaches students to understand how speech is created with guidance on the improvement of their speech production. Specifically, students discuss and apply principles in breath support pitch, volume, vocal quality and articulation, and principles basic to speaking clearly. May be repeated up to a maximum of 6 credits. (SCC, SFCC)

CMST 111 – Voice and Articulation I (4 cr)

Students learn to speak and interact in small group settings. Class discussions on a variety of cultural, social and technical topics, and one-on-one assistance in pronunciation/articulation are emphasized. Presentational skills also are included. Prerequisite: Passing the SLEP test with a minimum score of 50 or permission of instructor. (SCC)

CMST 112 – Voice and Articulation II (4 cr)

Students continue the concepts learned in CMST 111 by speaking and interacting in small group settings. Class discussions on a variety of cultural, social and technical topics, and one-on-one assistance in pronunciation/articulation are emphasized. Presentational skills also are included. Prerequisite: CMST 111, passing the SLEP test with a minimum score of 50 or permission of instructor. (SCC)

CMST 113 – Voice and Articulation III (4 cr)

Students continue the concepts learned in CMST 111 by speaking and interacting in small group settings. Class discussions on a variety of cultural, social and technical topics, and one-on-one assistance in pronunciation/articulation are emphasized. Presentational skills also are included. Prerequisite: CMST 112, passing the SLEP test with a minimum score of 50 or permission of instructor. (SCC)

CMST 114 – Oral Interpretation of Literature (5 cr)

Students in this course develop and implement the fundamental techniques of analysis of literature. Students also will develop and demonstrate their skills in presenting readings from works of prose, poetry and drama. (SFCC)

CMST 120 – Practical Communication for Technicians (5 cr)

This course will assist vocational/technical students in improving their listening skills, understanding the importance of a positive attitude and motivation, and increasing basic verbal and non-verbal communication skills. Recommended for first or second quarter students. (SCC)

CMST 121 – Job Communication Skills (2-5 cr)

This course is designed to meet the needs of specific professional/technical students with emphasis on attitudes, work ethics, resumes and job interviewing skills. (SCC, SFCC)

CMST 127 – Leadership Development (3-5 cr)

Emphasizes integrity and professionalism in the workplace, team-building problem-solving, presentational skills, and selling techniques for success on the job. Variable credits. (SCC)

CMST 204 – College Ambassadors (1-3 cr)

This unique course provides links for students from the U.S. and those who have English as a second language. Students work one-on-one with international students while learning about various cultures and building friendships. Students may not exceed 6 credits for the series. Prerequisite: CMST 227 or permission of instructor. (SCC)

CMST 205 – College Ambassadors (1-3 cr)

This unique course provides links for students from the U.S. and those who have English as a second language. Students work one-on-one with international students while learning about various cultures and building friendships. Students may not exceed 6 credits for the series. Prerequisite: CMST 227 or permission of instructor. (SCC)

CMST 206 – College Ambassadors (1-3 cr)

This unique course provides links for students from the U.S. and those who have English as a second language. Students work one-on-one with international students while learning about various cultures and building friendships. Students may not exceed 6 credits for the series. Prerequisite: CMST 227 or permission of instructor. (SCC)

CMST& 210 – Interpersonal Communication (5 cr)

This course provides an opportunity to learn and apply the theory of interpersonal communication. Learning experiences include work with personal growth, verbal and nonverbal communication skills, active listening, stress management, and resolving communication conflicts to develop healthy personal relationships. (SCC, SFCC)

CMST& 220 – Public Speaking (5 cr)

This course teaches students fundamental principles of researching, writing and delivering an effective public address. Students learn audience adaptation and receive at least 11 hours of instruction in the development and composition of formal preparation outlines for expository, persuasive and motivational speeches. Students study and practice a variety of rhetorical techniques suitable for crafting clear, memorable and persuasive prose. They gain confidence as speakers through the study and practice of a wide variety of proven delivery techniques and styles. Prerequisite: SFCC only: recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

CMST 223 – Intercollegiate Speech and Debate (1-5 cr)

Students prepare for and participate in competitive intercollegiate speech and/or debate. Activities include preparing for debates, presentational speeches, oral interpretation of literature and extemporaneous speaking. May be repeated up to 15 credits. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

CMST 224 – Intercollegiate Speech and Debate (1-5 cr)

Students prepare for and participate in competitive intercollegiate speech and/or debate. Activities include preparing for debates, presentational speeches, oral interpretation of literature and extemporaneous speaking. May be repeated up to 15 credits. Prerequisite: SFCC only: Recommends minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

CMST 225 – Intercollegiate Speech and Debate (1-5 cr)

Students prepare for and participate in competitive intercollegiate speech and/or debate. Activities include preparing for debates, presentational speeches, oral interpretation of literature and extemporaneous speaking. May be repeated up to 15 credits. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

CMST 226 – Gender Communication (5 cr)

This course provides the opportunity to learn and apply theories of gender communication. Learning experiences include work with both verbal and nonverbal communications as they apply to perception, stereotyping, brain and other biological differences, gender and socialization, processing information, differences in communication style, gender communication in friendships, and gender communication in the workplace. (SCC, SFCC)

CMST 227 – Intercultural Communication (5 cr)

This course is a culture-general approach to intercultural communication. Emphasis is on experiential learning in order to understand and improve intercultural communication at both the domestic and international levels. Students have the opportunity to improve verbal and nonverbal communication skills with different cultures in the community, and to focus on international communication needs. Prerequisite: SFCC only: Recommends minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

CMST& 230 – Small Group Communication (5 cr)

Practical application of problem-solving skills, discussion techniques, task and social roles including leadership are explored. Focus will be on communication behavior in small task-oriented groups. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

CMST 250 – Managing Conflict Through Communication (5 cr)

Understanding conflict is a critical step in the process of managing it. This course emphasizes both theory and practical application to help students manage conflict by utilizing communication skills. Prerequisite: CMST& 210. (SCC)

CMST 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

CMST 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

CMST 280 – Public Relations (5 cr)

An introduction to the basic principles of public relations. Areas of interest will include research, ethics and theory, media, and campaign strategy. Prerequisite: College level reading and writing skills. CMST& 101. (SCC)

CMST 287 – Business and Professional Communication (3-5 cr)

This course is designed to focus on how interaction skills affect the individual's and the organization's success. Students learn to maintain employment and to benefit the organization through effective communication skills with managers, co-workers and customers. Some topics covered include organizational communication theory and history, interviewing from the interviewer's point of view, culture, working in teams, presenting at work, conflict management and listening skills. Prerequisite: Second-year student or permission of instructor. (SCC)

CMST 294 – Special Topics in Speech Communication (3-5 cr)

A communication course with content and scope varying from quarter to quarter according to designation and credits filed in advance of each quarter. (SCC, SFCC)

COMPUTER APPLICATION TECHNOLOGY TRAINING**CATT 102 – Introduction to Outlook (2.5 cr)**

Using Outlook, students learn to communicate through e-mail, maintain electronic calendars, schedule meetings, use contacts, customize menus and taskbars, send/receive faxes, and import/export data among applications. (SCC)

CATT 120 – Microsoft Word I (1-2.5 cr)

Students learn and apply basic functions of Microsoft Word to create, print and edit documents such as letters, tables, memos, reports, labels and envelopes; format characters and paragraphs; insert section and page breaks; add bullets and numbers to lists; and use Word's writing tools. The skills required for the core level of the Microsoft Word MOUS (Microsoft Office User Specialist) certification examination are presented in CATT 120 and 121. (SCC)

CATT 121 – Microsoft Word II (1-2.5 cr)

This course is a continuation of CATT 120. Students learn and apply functions of Microsoft Word to add headers, footers, and page numbers to documents; create and modify column structure; use Wizard and templates to create new documents; create and modify tables by adding borders and changing table structure; enhance documents with pictures and charts; and manage files. The skills required for the Core level of the Microsoft Word MOUS (Microsoft Office User Specialist) certification examination are presented in CATT 120 and 121. Prerequisite: CATT 120. (SCC)

CATT 122 – Microsoft Access I (1-3 cr)

This course presents theory and application in the basic concepts and terminology of relational database management. Students plan and design databases in addition to building and modifying tables and forms. The skills required for the Microsoft Access MOUS (Microsoft Office User Specialist) certification examination are presented in CATT 122 and 123. (SCC)

CATT 123 – Microsoft Access II (1-2.5 cr)

Students learn and apply functions of Microsoft Access to view and organize information, define relationships, produce reports and integrate with other applications. The skills required on the Microsoft Access MOUS (Microsoft Office User Specialist) certification examination are presented in CATT 122 and 123. Prerequisite: CATT 122. (SCC)

CATT 124 – Advanced Word Processing (5 cr)

This course is a continuation of the concepts introduced in CATT 120 with emphasis on the study of advanced power features and software concepts. Prerequisite: CATT 120 or permission of instructor. (SCC)

CATT 128 – Desktop Publishing (5 cr)

This introductory course is designed for students with little or no background in desktop publishing. Emphasis is placed on basic concepts and terminology common to popular desktop publishing software. Basic DOS functions used in desktop publishing are introduced. Prerequisite: CIS 110. (SCC)

CATT 130 – Introduction to WordPerfect (2 cr)

This course introduces students to basic WordPerfect features and how they are used to create and format a variety of documents. The course is designed for nonbusiness and business majors. Prerequisite: Keyboarding skills. (SCC)

CATT 131 – Advanced WordPerfect (2 cr)

The second in a series of courses designed to teach the student ways to enhance documents and productivity using advanced WordPerfect word processing functions. Prerequisite: CATT 130. (SCC)

CATT 134 – Presentation Graphics (5 cr)

This course covers theory and practical applications in graphics applications software using such skills as shapes, text and charts. The proper use of clip-art, as well as the newest software that promotes video graphics is emphasized. Proofreading, editing, critical thinking and logic skills are utilized. Projects reflect the need in the local business community, so course materials are constantly revised with the latest ideas and technology. Prerequisite: CIS 110 and keyboarding skills and concurrent enrollment in CATT 144. (SCC)

CATT 138 – Microsoft Excel I (1-2.5 cr)

This course presents the basic functions of Microsoft Excel required to create, modify, format and print spreadsheets. The skills required for the core level of the Microsoft Excel MOUS (Microsoft Office User Specialist) certification examination are presented in CATT 138 and 139. (SCC)

CATT 139 – Microsoft Excel II (2.5 cr)

This course is a continuation of CATT 138. Students learn to work with worksheets and workbooks, formulas and functions, and to use charts and objects. The skills required for the core level of the Microsoft Excel MOUS (Microsoft Office User Specialist) certification examination are presented in CATT 138 and 139. Prerequisite: CATT 138. (SCC)

CATT 140 – Integrated Applications (5 cr)

This competency-based course is a capstone course for the computer user. Skills learned in previous courses are refined and incorporated into practical applications. Prerequisite: CIS 110, 205 and CATT 120, 121, 122, 134 and concurrent enrollment in CATT 150. (SCC)

CATT 144 – Computer Lab III (2 cr)

This scheduled computer lab presents practical applications of materials presented in CATT 134. The course content includes graphic applications using clip-art and creation of video graphics. Prerequisite: Concurrent enrollment in CATT 134. (SCC)

CATT 150 – Computer Lab IV (2 cr)

This scheduled computer lab presents practical applications of materials presented in CATT 140. The course content includes switching menus, cutting, copying, pasting, dragging, dropping, inserting and linking. Prerequisite: Concurrent enrollment in CATT 140. (SCC)

CATT 161 – Microsoft Word for Windows I (2 cr)

The course introduces Microsoft Windows operating systems. Use of Word application of Microsoft Office Professional software includes entering, formatting, revising, editing, replacing, automatically correcting, checking, changing style, reformatting and printing text. Most documents are prerecorded, so students spend little time keying copy; emphasis is on learning to use the software. Prerequisite: Ability to keyboard by touch at 25 wpm; some computer familiarity desirable. (SCC)

CATT 162 – Microsoft Word for Windows II (2 cr)

This is a continuation of CATT 161. The course includes using templates and Wizards, creating, formatting, reformatting varying columns, adding graphics and text emphasis, using outline views for rearranging text, promoting and demoting headings, working with multiple documents and files, using and creating online forms, and creating and printing of merged documents. Most documents are prerecorded, so students spend little time keying copy; emphasis is on learning to use the software. Prerequisite: CATT 161. (SCC)

CATT 185 – Introduction to Vista and the Internet (2.5 cr)

Students develop the ability to use a Windows Vista operating system and acquire skills to navigate the Internet. Prerequisite: Keyboarding skills. (SCC)

CATT 190 – Introduction to PowerPoint (1-2.5 cr)

Students learn and apply the fundamentals of Microsoft PowerPoint to create and modify presentations; and use design templates, the Office Clipboard, Format Painter and Word Art in addition to the drawing tools. Skills required for the PowerPoint MOUS (Microsoft Office User Specialist) certification examination are presented. (SCC)

CATT 191 – Advanced PowerPoint (2.5 cr)

Students learn and apply advanced features of Microsoft PowerPoint to modify and create presentations by customizing the color schemes, adding charts and graphs, building and modifying organization charts, importing Word and Excel documents, adding links to presentations, and adding animation. The skills required for MOUS (Microsoft Office User Specialist) certification examination are presented. Prerequisite: CATT 190. (SCC)

CATT 220 – Advanced Microsoft Word I (2.5 cr)

This course is a continuation of CATT 121. Students learn and apply advanced functions of Microsoft Word to create and edit document styles, work with master documents and subdocuments, create and modify a table of contents or index, use tables with embedded worksheets, sort lists, and create and revise footnotes and endnotes. The skills required for the expert level of the Microsoft Word MOUS (Microsoft Office User Specialist) certification examination are presented in CATT 220 and 221. Prerequisite: CATT 121. (SCC)

CATT 221 – Advanced Microsoft Word II (2.5 cr)

This is the final course in a series covering Microsoft Word and is a continuation of CATT 220. Students learn and apply advanced functions of Microsoft Word to sort and create merged documents such as letters, envelopes and labels; to create, apply, copy, rename and edit macros; to create and modify forms; and to collaborate with work groups through comments, multiple versions and tracking of documents. The skills required for the expert level of the Microsoft Word MOUS (Microsoft Office User Specialist) certification examination are presented in CATT 220 and 221. Prerequisite: CATT 220. (SCC)

CATT 222 – Advanced Microsoft Access I (2.5 cr)

This course presents advanced Microsoft Access functions including building, modifying tables and forms, and refining queries. Prerequisite: CATT 123. (SCC)

CATT 223 – Advanced Microsoft Access II (2.5 cr)

This course is a continuation of CATT 222 and presents advanced Microsoft Access functions with an emphasis on utilizing web capabilities, producing reports, using Access tools and integrating data. Prerequisite: CATT 222. (SCC)

CATT 238 – Advanced Microsoft Excel I (2.5 cr)

This course covers advanced concepts for using Microsoft Excel. Students use templates and multiple workbooks; work with toolbars; and record, run and edit macros. The skills required for the expert level of the Microsoft Excel MOUS (Microsoft Office User Specialist) certification examination are presented. Prerequisite: CATT 139. (SCC)

CATT 239 – Advanced Microsoft Excel II (2.5 cr)

This course is a continuation CATT 238. Students record, run and edit macros; extract data and apply data filters; use analysis tools; and learn to collaborate in workgroups. The skills required for the Expert level of the Microsoft Excel MOUS (Microsoft Office User Specialist) certification examination are presented. Prerequisite: CATT 238. (SCC)

CATT 241 – Microsoft Project (2.5 cr)

Students develop skills using computer software to plan, execute, control and close a project in order to meet the project's goal. Students use MS Project as a central database to organize all project information. This course focuses on determining tasks and resources, creating project schedules, using Gantt charts and network diagrams to monitor projects, and generating project reports. Prerequisite: CIS 110 or equivalent experience is recommended. (SCC)

CATT 242 – Advanced Microsoft Project (2.5 cr)

Using MS Project, students will continue to develop and enhance the skills they learned in CATT 241. Students will use MS Project to track progress, develop reports, integrate Project information with other MS office software, create and use templates and use a master project. In addition, a major emphasis of this class is on the practical application of MS Project through the use of case studies or projects chosen by the students. Prerequisite: Previous or concurrent enrollment in CATT 241 is required. (SCC)

COMPUTER INFORMATION SYSTEMS**CIS 101 – Technical Introduction to Computer Information Systems (5 cr)**

This course introduces technical computer information systems and acquaints students with concepts and knowledge of system software and design, and the hardware used to convert data into information in business world applications. (SCC)

CIS 105 – Computer Fundamentals for Vocations I (1-5 cr)

This course introduces students to computer concepts in regard to the general elements of computer systems. Content may include DOS commands, computer terminology, data communication concepts, introductory Computer Assisted Drafting (CAD) principles, and the practical applications of relevant application software packages. Course content may vary depending on the individual vocational program needs. (SCC)

CIS 110 – Introduction to Computer Applications (5 cr)

The basic principles of computers and business application software including word processing, spreadsheets and database software are introduced in this course. The in-depth study of basic commands and concepts, and the applications of a variety of commercial software are emphasized. (SCC)

CIS 111 – XHTML Basics (5 cr)

This course introduces basic concepts of the eXtensible HyperText Markup Language (XHTML). Students learn the technology required to develop and maintain static web sites. Prerequisite: CIS 110 or permission of instructor. (SCC)

CIS 112 – Graphic Design for the Web (5 cr)

This course provides an in-depth exploration of how to plan, design and execute visually appealing, web-sensitive images. JPEG, GIF, PNG and other formats are discussed. Graphic formats and layouts also are presented. (SCC)

CIS 114 – JavaScript (5 cr)

Students build on advanced theories in web development using current web development software. As technology advances in industry, the scripting skills taught in this class provide web developers the ability to create advanced and sophisticated web sites. Prerequisite: CIS 111, 146 or permission of instructor. (SCC)

CIS 116 – Active Directories (5 cr)

This course is designed for students who are experienced with Microsoft Windows 2000 Server. Using previously acquired skills, students learn Windows 2000 Active Directories. Topics include planning, configuring and administering an Active Directory infrastructure; configuring Domain Name System (DNS); using group policies; remotely deploying the Windows 2000 operating system; using an Active Directory to centrally manage users, groups, shared folders and network resources; and monitoring and optimizing the Active Directory performance. Prerequisite: CIS 244 or permission of instructor. (SCC)

CIS 126 – DBMS/SQL (5 cr)

This course introduces ANSI SQL. Students learn the uses of SQL scripting as it pertains to common database management systems such as Oracle, SQL Server or DB2. Students acquire the ability to create, modify and delete data and data structures. Students also learn to implement SQL using web technologies. Prerequisite: CIS 146 or permission of instructor. (SCC)

CIS 127 – SQL Server and Transact-SQL (5 cr)

Students learn to design and implement a SQL Server database. Once the relational database is developed, students program web applications using stored procedures created with Transact-SQL. Prerequisite: CIS 126 or permission of instructor. (SCC)

CIS 130 – Website Design (5 cr)

Students are introduced to the techniques, processes and terminologies for designing a web site from the first concept to the finished, published web site. Planning aspects and basic elements necessary to publish a successful site are emphasized. Prerequisite: CIS 111 and 112 or permission of instructor. (SCC)

CIS 138 – Home Networking (2.5 cr)

This course introduces the basic terminology, concepts and architecture of computer home networking. (SCC)

CIS 139 – Small Office Home Office Computer Basics (2.5 cr)

This course prepares students for basic networking in a business setting. (SCC)

CIS 146 – Introduction to Programming (5 cr)

Students explore the different architectures of all computer programming languages and compare the similarities and differences. Structured programming theories and concepts, as well as object-oriented theories and concepts, are utilized by students to solve beginning-level computer application problems. The understanding and mastery of the terms, concepts and theories of today's information technology programmers/analysts are the main objectives of this course. Course content varies depending upon the number of credits and topics chosen. (SCC)

CIS 147 – Emerging Technologies 1 (1-5 cr)

Students research and evaluate emerging technologies. In addition, students make presentations about the features and uses of web technology to both the class and the entire web development program. This class hones writing, development and presentation skills both as an individual and in team settings. Course content varies depending upon the number of credits and topics chosen. Prerequisite: Permission of instructor. (SCC)

CIS 148 – Emerging Technologies 2 (1-5 cr)

Students research and evaluate emerging technologies. In addition, students make presentations about the features and uses of web technology to the class and the entire web development program. This class hones writing, development and presentation skills both as an individual and in team settings. Course content varies depending upon the number of credits and topics chosen. Prerequisite: Permission of instructor. (SCC)

CIS 154 – Beginning Flash Development (5 cr)

This course introduces students to the methods and techniques used in the development of multimedia materials and presentations using Macromedia Flash and Freehand, Adobe Photoshop, and other software. Specific emphasis is placed on creating graphic elements as a means of visual communication. Focus is placed on conceptualization and sequencing, analysis of animated graphics, the technology of computer-aided animation, application of visual theory, and organization to principles of animation. Prerequisite: CIS 112 or permission of instructor. (SCC)

CIS 205 – Advanced Operating Systems (5 cr)

This course prepares students for entry-level IT support technician positions using computer operating systems. Students learn skills to install, configure and upgrade, diagnose and repair systems. Major features of the Windows operating system and its components, troubleshooting techniques and maintaining systems are emphasized. (SCC)

CIS 206 – Introduction to UNIX (5 cr)

This course introduces the UNIX operating system. Students learn to configure the latest version and set up the graphical interface with the X Window System. Many tips and techniques for specific uses of UNIX, such as installing and configuring applications are presented. (SCC)

CIS 212 – Advanced Report Program Generator Language (RPG) for Business (5 cr)

Students, through hands-on experience, learn and apply advanced concepts of the Report Program Generator (RPG) language in business applications. Processing techniques, utilizing random file processing and multiple file handling are presented, enabling students to prepare structured programs for business-oriented applications. (SCC)

CIS 213 – Advanced UNIX (5 cr)

Students with experience in UNIX servers use skills to administer UNIX systems in a network environment. They maintain UNIX systems, configure and troubleshoot the Network File System (NFS), and configure a Network Information Service (NIS) environment. Prerequisite: CIS 206, 240. (SCC)

CIS 214 – Beginning Network Security (5 cr)

Students address current issues concerning network security. Topics include introduction to the essentials of network security, why it is necessary, introduction to hacking on a network, security measures to defeat crackers, response to attacks and how to use information gained from an attack. (SCC)

CIS 215 – Advanced Active Server Pages (5 cr)

Students learn to develop web applications for Internet/Intranet environments using server-side scripting. Techniques for building pages dynamically, accessing databases easily and creating secure commercial applications are presented. Prerequisite: Permission of instructor. (SCC)

CIS 216 – Advanced Network Security (5 cr)

This course introduces students to the vulnerabilities of a network through hacking. Hacking of major operating systems such as Microsoft, Novell, Linux and Unix are emphasized in addition to the hacking of network components and services. Different ways and types of attacks that are used by hackers are presented. Prerequisite: CIS 214. (SCC)

CIS 220 – Securing the Operating System (5 cr)

Students discover the possible vulnerabilities of the network and major operating systems. Methods of locating and repairing damages that occur are emphasized. Prerequisite: CIS 216. (SCC)

CIS 230 – PHP Programming (5 cr)

Students learn to create powerful, interactive, database-driven web sites. How PHP scripting language interacts with forms is discussed. Students also learn to generate dynamic pages and data representation is introduced. Prerequisite: CIS 126, 146 or permission of instructor. (SCC)

CIS 234 – Network Scripting (3 cr)

Students write scripts utilizing Microsoft Visual Basic Scripting Edition (VBScript), Windows Script Host (WSH) and UNIX/LINUX shell scripting languages to manage Windows and Unix/LINUX based systems. Prerequisite: CIS 206, 244. (SCC)

CIS 236 – Windows 2003 Network Infrastructure (5 cr)

This course introduces remote access in a Windows 2003 network infrastructure. Students learn to implement, manage, maintain and troubleshoot TCP/IP while addressing, DNS, security and routing. Prerequisite: CIS 244. (SCC)

CIS 237 – Internet Information Server Administration (3 cr)

Using Internet Information Server, this course encompasses configuration, management tools, architecture, WWW/FTP/SMTP/NNTP services, security, encryption, digital signatures and indexing. Prerequisite: CIS 236 or permission of instructor. (SCC)

CIS 240 – Introduction to Networks (5 cr)

This course introduces the basic terminology, concepts and architecture of computer networking. History, standards, componentry, topologies, benefits, Local Area Networks (LAN), and national and international networks are explained and studied in depth. (SCC)

CIS 241 – Novell Administration (5 cr)

This is the first of two courses introducing the basic administration principles of networking. Topics include operating systems overview, file systems management, login and file security, login scripts, directory services management, network printing and installation of applications. Prerequisite: CIS 205 or permission of instructor. (SCC)

CIS 242 – Novell Advanced Administration (5 cr)

This is the second of two courses designed as an advanced introduction to the network administration principles of a widespread network operating system. Topics include procedures in network administration, server configuration, management, protocol support, optimization and troubleshooting. NetWare software from Novell is presented. Prerequisite: CIS 241. (SCC)

CIS 243 – Windows XP Professional (5 cr)

This is the first of courses introducing students to the basic administration principles of networking in a Microsoft environment. Topics include operating systems overview, file systems management, login and file systems security, network printing and installation of network applications. Prerequisite: CIS 205 or permission of instructor. (SCC)

CIS 244 – Windows 2003 Server (5 cr)

This course introduces managing, maintaining and troubleshooting devices, users, groups, computers, resource access and disaster recovery in a Windows 2003 Server environment. Prerequisite: CIS 205. (SCC)

CIS 247 – Systems Management (5 cr)

The course gives students hands-on experience maintaining a network using system management software. Students learn to install and configure software; distribute applications on the network; set up policies for workstations and users; control and repair remote workstations; troubleshoot desktops, applications and policies; and maintain a network through a single point of administration. Prerequisite: CIS 244. (SCC)

CIS 250 – Cisco Networking (5 cr)

Students address issues concerning repeaters, hubs, bridges, switches and routers as well as their functions within the first three layers of the OSI reference model. Concepts of collision domains, addressing media access and the TCP/IP protocol are emphasized. Current networking standards set forth by the Underwriter's Laboratory and how they apply to wiring and networking equipment rooms are discussed. Network address classes, subnetting and network registration are covered in depth. Prerequisite: CIS 240 or permission of instructor. (SCC)

CIS 251 – Cisco Network Routing (5 cr)

Students are provided with hands-on experience required to set up small wide area network (WAN) and local area network (LAN) routers. Topics include physical and logical LAN and WAN topologies, network cabling, router commands, Trivial File Transfer Protocol (TFTP) servers, router troubleshooting and minor repairs. Prerequisite: CIS 250 or permission of instructor. (SCC)

CIS 252 – Cisco LAN Design (5 cr)

Students learn to design and implement Local Area Networks (LAN) utilizing high-speed switching equipment, Virtual Area Networks (VLAN), workgroup servers and network routing. Prerequisite: CIS 251 or permission of instructor. (SCC)

CIS 253 – Cisco WAN Design (5 cr)

Students learn to design and implement Wide-Area Networks (WAN) utilizing routers, frame relay, Integrated Switch Digital Networks (ISDN) and Point-to-Point Protocol (PPP). Prerequisite: CIS 252 or permission of instructor. (SCC)

CIS 254 – Advanced Flash Development (5 cr)

Students examine major aspects of New Media production. Topics include New Media and interactivity, emerging technologies and digital delivery systems, New Media authoring, 2D and 3D graphics, digital audio and nonlinear digital video editing. The course also emphasizes the use of ActionScript programming to enable advanced interactivity functions in Flash. Prerequisite: CIS 154 or permission of instructor. (SCC)

CIS 255 – BASIC Language for Business (5 cr)

Students utilize and understand the syntax required of BASIC for use in business applications through hands-on experience. Programming utilizing structured methodologies is required. Processing techniques utilizing table concepts, sequential file processing, random file processing, and batch and interactive programming concepts are utilized by students to complete business-oriented application programs. Prerequisite: CIS 101. (SCC)

CIS 256 – .Net Application Development (5 cr)

Students use the object-oriented, event-driven .NET platform to learn programming concepts in this course. Students plan and create interactive Windows applications. Students also learn to write selection and repetition statements as well as create and manipulate sequential access files, random access files and arrays. Graphical User Interface (GUI) design skills are emphasized throughout this course. Prerequisite: CIS 146 or permission of instructor. (SCC)

CIS 257 – Advanced Visual Basic (5 cr)

Students learn to build scaleable applications using distributed COM objects in Visual Basic. Students learn n-tier architecture, object-oriented programming and the development of database driven applications using the ActiveX Data Objects, while covering the advanced features of the Visual Basic programming language. Prerequisite: CIS 256. (SCC)

CIS 258 – ASP.NET (5 cr)

Students learn to create web-based applications using n-tier architecture to distribute their presentation services, business logic and data services. Students also learn .NET methodologies and object-oriented programming techniques using Visual Basic.NET and Visual C#.NET. Prerequisite: CIS 256, 282 or permission of instructor. (SCC)

CIS 261 – SQL Database Administration (5 cr)

Using SQL Server, this course encompasses SQL architecture, installation, configuration, login security, permissions, transfer/migration, SQL Server Agent and data replication. Prior understanding of query statements is required. Prerequisite: CIS 126, 244 or permission of instructor. (SCC)

CIS 262 – SQL Database Design (5 cr)

Using SQL Server, this course encompasses storage architecture, creating/maintaining indexes, enforcing data integrity, managing locks, creating views, and designing store procedures and triggers. Prerequisite: CIS 261 or permission of instructor. (SCC)

CIS 263 – Exchange Server Administration (5 cr)

Using Exchange Server, this course encompasses recipient objects, architecture, configuration, public folders, monitor tools, form administration and client deployment. Prerequisite: CIS 236. (SCC)

CIS 264 – Enterprise Mail Design (5 cr)

Using Exchange Server, this course encompasses installation, X.400/X.500 concepts, intra/intersite communications, site connectors and X.400 connectors, directory and public folder replication, and Internet integration. Prerequisite: CIS 263 or permission of instructor. (SCC)

CIS 265 – Database Programming I (5 cr)

Students learn to expand the concepts used to design and implement a relational database. Once the database is developed, students learn to program n-tier applications using views, user-defined functions, stored procedures and triggers. Prerequisite: CIS 126 or permission of instructor. (SCC)

CIS 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

CIS 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

CIS 270 – Principles of Network Security (5 cr)

This course is an introduction to network security. Topics covered relate to general network security, common network attacks and how to safeguard against them, authentication methods, e-mail, directory and file transfers. Prerequisite: CIS 251. (SCC)

CIS 271 – Server and Introduction to Wireless Technologies (5 cr)

This course introduces students to advanced-level technical competency of server and introductory wireless issues including planning, installation, configuration, upgrading, maintenance, troubleshooting and disaster recovery. Prerequisite: CIS 205. (SCC)

CIS 272 – Agile Software Development (5 cr)

Students will learn about iterative and incremental development techniques found in agile programming methodologies. Students will have hands on experience working in teams and using tools to do source code versioning, testing, refactoring, and continuous integration. Prerequisite: CIS 256, 284 or permission of instructor and concurrent enrollment in CIS 258. (SCC)

CIS 275 – Networking Capstone (5 cr)

This course is a culmination of the network engineering program in which student's research and evaluate emerging technologies and utilize the knowledge gained through the program. Students complete a research paper on technologies currently used in the networking field. Students also set up a network using current and legacy operating systems/hardware. Prerequisite: Permission of instructor only. (SCC)

CIS 276 – Software Development Capstone (5 cr)

Students apply the concepts of structured and object-oriented development to a team project-oriented environment to produce working software. Students choose the appropriate development platform for implementation. Students will work with non-profit organizations, businesses, or college departments in an effort to serve the community. Prerequisite: Permission of instructor. (SCC)

CIS 281 – "C" Language for Business (5 cr)

Students utilize the syntax required of "C" for use in business applications. Programming utilizing structured methodologies is required. Processing techniques utilizing table concepts, sequential files processing, random file processing, and batch and interactive programming concepts are introduced. Students create business-oriented application programs. Prerequisite: CIS 101, 255. (SCC)

CIS 282 – Programming Principles I (5 cr)

Students learn programming fundamentals using the Java platform. Students implement Java with programming concepts using object-oriented terminology. Prerequisite: CIS 146 or permission of instructor. (SCC)

CIS 283 – Programming Principles II (5 cr)

This course is an extension of CIS 282 and introduces the power of object-oriented programming. Students are challenged to solve problems in an object-oriented fashion. Students learn to extend a class, inheritance and use exceptions, streams and files. Prerequisite: CIS 282 or permission of instructor. (SCC)

CIS 284 – Ruby on Rails (5 cr)

Students use the Ruby language and Rails web framework to create scalable and robust web applications. Students learn to develop server-side applications to interface with web pages, making web sites more dynamic and powerful. Prerequisite: CIS 283 or permission of instructor. (SCC)

CIS 286 – Voice Over IP (5 cr)

Students acquire an understanding of PSTN basic components and key technologies behind VOIP including speech coding, packet transport and VOIP signaling protocols. Prerequisite: CIS 252. (SCC)

CIS 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

CIS 290 – E-Commerce Application Database (5 cr)

Students apply their systems analysis, design and database skills to a team project-oriented setting to produce required deliverable documents used by a DBA. A fully functional database for an E-commerce environment is implemented. Prerequisite: CIS 272, or permission of instructor. (SCC)

CIS 296 – Final Quarter Project (5 cr)

Students are assigned a web technologies project to include the concepts learned up to the sixth quarter of the A.A.S. degree. Students learn to work with a variety of people in a team environment to fully implement and design a dynamic and interactive web site. Students and the instructor work together while completing the project. Prerequisite: Permission of instructor. (SCC)

COMPUTING-COMPUTER APPLICATIONS**CAPPS 102 – Introduction to Office (1 cr)**

This beginning course is designed for students with no previous computer experience. Students learn the basics of Word, Excel, Access, and PowerPoint software. Students apply learning to various business activities and personal applications. (SFCC)

CAPPS 104 – Beginning Windows Operating System (1 cr)

This beginning course introduces students to the latest Microsoft PC Operating System. Students learn how to customize, navigate, manage files and folders, and browse the Internet. Students also learn various control features and settings on the computer. (SFCC)

CAPPS 110 – Word (1-8 cr)

Students may learn beginning, intermediate, and/or advanced concepts and skills using Microsoft Word depending on number of credits. Students apply classroom learning to a variety of activities and scenarios based on real-world business applications. (Repeatable up to 8 credits.) Prerequisite: Minimum Reading Compass Score of 80 OR Reading Asset Score of 40. (SFCC)

CAPPS 112 – Excel (1-8 cr)

Students may learn beginning, intermediate, and/or advanced concepts and skills using Microsoft Excel depending on number of credits. Students apply classroom learning to a variety of activities and scenarios based on real-world business applications. (Repeatable up to 8 credits.) Prerequisite: Minimum Reading Compass Score of 80 OR Reading Asset Score of 40. (SFCC)

CAPPS 114 – Access (1-8 cr)

Students may learn beginning, intermediate, and/or advanced concepts and skills using Microsoft Access depending on number of credits. Students apply classroom learning to a variety of activities and scenarios based on real-world business applications. (Repeatable up to 8 credits.) Prerequisite: Minimum Reading Compass Score of 80 OR Reading Asset Score of 40. (SFCC)

CAPPS 116 – PowerPoint (1-5 cr)

Students may learn beginning, intermediate, and/or advanced concepts and skills using Microsoft PowerPoint depending on number of credits. Students apply classroom learning to a variety of activities and scenarios based on real-world business applications. (Repeatable up to 5 credits.) Prerequisite: Minimum Reading Compass Score of 80 OR Reading Asset Score of 40. (SFCC)

CAPPS 120 – Outlook (2 cr)

The purpose of this course is to introduce students to the tools needed to send and receive e-mail, organize schedules, maintain contact lists and notes. Students also may learn other tools to manage messaging and business information. (SFCC)

CAPPS 130 – Introduction to Web Publishing (1 cr)

This course introduces the student to the use of HTML in creating basic web pages. It is the foundation for continuing studies in web development. Prerequisite: CS 101 or IS 120. (SFCC)

CAPPS 132 – Frontpage (1 cr)

This self-paced course introduces the student to the use of Frontpage in creating and managing web sites. The course includes features of Frontpage which allow for the development of interactive pages. Prerequisite: CS 101 or IS 120 or permission of instructor. (SFCC)

CAPPS 222 – Software Update (1-4 cr)

This course is for intermediate to advanced users of Word, Excel, Access, and PowerPoint. Students will learn the most up-to-date features and commonly used tools of the application software and be able to apply new methods to a variety of problem solving activities. (Repeatable up to 4 credits.) Prerequisite: Permission of instructor. (SFCC)

COMPUTING-COMPUTER SCIENCE**CS 101 – Computer Literacy (5 cr)**

This is an introductory course in computer technology, concepts, operations and applications. Computer terminology is emphasized. It examines the complete system, including hardware, software, data, people and procedures. Students have extensive laboratory exercises in computer operating systems such as exposure to UNIX, DOS and Macintosh; various word processors, spreadsheets, databases and graphics. An exposure to the programming process is provided. Internet and general networking principles are included. Prerequisite: MATH 091, approval of instructor or test placement in MATH 099. (SFCC)

CS 121 – UNIX/Linux (3 cr)

This course is designed for students with some prior computing experience, especially with some operating system experience. The UNIX/Linux operating system will be installed and explored. Students learn how to navigate and administer Linux / Unix from both the command line and through a graphical user interface. Additional topics include software installation, using Linux applications, security and servers. Prerequisite: Knowledge of another operating system: DOS, VMS, etc. (SFCC)

CS& 141 – Computer Science I Java (5 cr)

This course is an introduction to the concepts and practices of information representation, computer algorithms, hardware fundamentals, and computer program design and implementation. This course allows students to write, compile, debug, run, analyze and evaluate computer programs written in a current object-oriented language. Prerequisite: MATH& 141 (can be concurrent) or permission of instructor. (SFCC)

CS 142 – Introduction to Computer Science II (5 cr)

This course continues where Introduction to Computer Science I left off, introducing the student to concepts and practices of information representation, computer algorithms, hardware fundamentals, and computer program design and implementation. This course introduces data structures and algorithms basic to the study of computer science, and object-oriented design and implementation. CS& 141 or permission of instructor. (SFCC)

CS 211 – C for Programmers (5 cr)

This course is designed to cover the syntax of the "C" programming language in the context of structured programming and with the Linux Operating System. It is intended for students with prior experience in computer programming. This course allows students to apply the "C" language and structured programming concepts to a series of programming problems concerning Makefiles, Graphics API's, System API's, Libraries, and Optimization Tools. Prerequisite: CS& 141 or permission of instructor. (SFCC)

CS 223 – Programming for IT (5 cr)

This course focuses on fundamental principles of programming and scripting, and presenting unique visual and object-oriented features. The course allows students to become proficient in scripting and programming, and the principles of good program design. Students write and demonstrate simple structured programs, but with well-developed user interfaces. Programming assignments include procedural techniques and event-driven processing. Prerequisite: IS 144, 210. (SFCC)

CS 253 – Object-Oriented Programming with C++ (5 cr)

This course is designed to cover the main topics of the “C++” programming language and object-oriented programming. It is intended for students with prior experience in computer programming, in general, and the “C” language in particular. This course allows students to apply the “C++” language and object-oriented concepts to a series of programming problems. Prerequisite: CS 142 and CS 211 or permission of instructor. (SFCC)

CS 255 – C for Engineers (5 cr)

This course introduces structured computer programming and problem solving, specifically for pre-engineering students, using the C language. Problem examples emphasize numerical solutions common to engineering. Emphasis is placed on programming principles, programming techniques and the process of solving problems using computers. Prerequisite: MATH& 141 (Can be concurrent). (SFCC)

CS 280 – Data Structures (5 cr)

This course explores data types, abstract data types, and data structures. Efficiency of algorithms is discussed extensively. Sequential and linked lists will be implemented. Students will be able to create, represent, and traverse binary trees. Searching is extensively covered, including dictionaries, priority queues, and hashing. Directed graphs and depth-first algorithms will be introduced. Additional topics include: garbage collection, dynamic storage allocation and sorting. Prerequisite: CS 142. (SFCC)

COMPUTING-INFORMATION SYSTEMS**IS 101 – Planning For Information Technology Students (1 cr)**

Three main objectives comprise this course. First, inform students of options, outcomes and consequences of information technology education and training programs. Second, lead students in determining their education/training objectives and developing goals. Finally, prepare specific plans for subsequent education/training. Although concentration on information technology programs at SFCC, other programs are evaluated to determine which are most effective for each student. Students participate in group projects, documenting their research in written and oral reports. Upon completion of the course, students possess a detailed training/education plan. (SFCC)

IS 103 – Information Technology Fundamentals (5 cr)

Students learn computing hardware, operating systems and software applications. They learn to perform daily computer operations, including setting up a computer and installing new software. Skills are developed to evaluate and select business computer software and hardware and discuss and compare common operating systems. Hardware management and network terminology are introduced and selected operating systems are available for the students to experience. Prerequisite: IS 120 or permission of instructor. (SFCC)

IS 105 – Applications for IT I (3 cr)

This course has three objectives. First, inform students about information technology-related applications available and currently used in the industry. Second, teach the use of these applications through projects based creation and completion. Although concentrating on information technology programs, students are assisted in evaluating other applications to determine which are most effective. Students participate in group projects, documenting their research in written and oral reports. Upon completion of the course, students possess detailed, practical experience with some information technology standard applications. (SFCC)

IS 107 – Applications for IT II (3 cr)

Students build on the skills obtained in IS 105. They expand their knowledge on applications, including word processing, spreadsheets, databases design and management, collaboration applications, and other information technology related applications. Prerequisite: IS 105 or permission of instructor. (SFCC)

IS 120 – Business Computer Use (3 cr)

This is an introductory course for those unfamiliar with computers. The course provides an overview of common software applications. The topics include computer operation, computer terminology, word processing, electronic spreadsheets, graphics, database management and telecommunications. (SFCC)

IS 132 – Computer Ethics & Law (5 cr)

This class will address basic cyberspace legal issues and policy problems. Specific problems in applying law to cyberspace in areas such as intellectual property, privacy, computer crime, and the bounds of jurisdiction will be explored. (SFCC)

IS 140 – Computer and Network Support (5 cr)

This course is a comprehensive, lecture and hands-on course for people who must install and maintain computer systems in a business environment. Hardware technology, operating systems and integration of computers in a

network are included in this course. Troubleshooting techniques are studied. Prerequisite: IS 103 or permission of instructor. (SFCC)

IS 144 – Programming Fundamentals (3 cr)

Students learn the system design process and the basics of programming logic. They apply that knowledge with the use of current programming tools. Emphasis is based on process rather than on extensive coding exercises. Prerequisite: IS 120 or permission of instructor. (SFCC)

IS 160 – Internet Fundamentals (1 cr)

This class introduces students to the use of computers for data communications. Students use local area networks (LANs) and telecommunications hardware and software to experience Internet, electronic mail and information services. (SFCC)

IS 162 – Data Communications and Networks (3 cr)

This is an intensive course covering a broad spectrum of telecommunications topics. Telecommunications processes, principles, protocols and media are discussed in depth. Students use telecommunications and network software, study the pros and cons of various systems. The OSI model is studied. Prerequisite: IS 160 or permission of instructor. (SFCC)

IS 210 – Internet Programming I (1-5 cr)

Students create web pages using XHTML and other scripting languages. Experience is gained in designing and structuring effective and accessible web pages, including pages with tables, forms and frames. Students format pages using cascading style sheets and advanced concepts, including Applets, Flash, XML and JavaScript for XHTML documents. Credits are determined by the successful completion of modules as required by the program or personal learning goals. This course may be repeated up to a maximum of 5 credits. (SFCC)

IS 212 – Internet Programming II (5 cr)

This course applies client-side Internet programming technologies to create dynamic web pages. Students are introduced to basic programming techniques using JavaScript and other scripting languages. Prior training in HTML is required. Prerequisite: IS 210. (SFCC)

IS 214 – Internet Programming III (5 cr)

This course applies server-side Internet programming technologies to create database-driven web pages. Server-side technologies covered include Active Server Pages (ASP), CGI-PERL, and PHP. Web server environments include Internet Information Server (IIS) and Apache. Prior training in HTML and client-side programming is required. Prerequisite: IS 212. (SFCC)

IS 216 – Applied XML (3 cr)

This course teaches how data can be shaped using Extensible Markup Language (XML). Students learn to structure valid XML documents, format XML via Cascading Style Sheets, transform XML using XSLT, and apply a highly-developed XML language such as MathML. Special emphasis on current industry uses for XML is provided. Previous knowledge of HTML is required. (SFCC)

IS 228 – Internet Servers (5 cr)

This course provides an overview of services installed on an Internet server. Email servers, web servers, database servers will be installed, configured, secured and managed on multiple platforms. Prerequisite: IS 262. (SFCC)

IS 234 – Computer Forensics I (5 cr)

Students learn to provide a secure computer environment and learn techniques for collecting and analyzing computer-related evidence. This class is designed to train computer technicians in the elements of computer forensics investigation. Prerequisite: IS 132 or permission of instructor. (SFCC)

IS 236 – Computer Forensics II (5 cr)

Students learn to provide a secure computer environment and learn techniques for collecting and analyzing computer-related evidence. This class is designed to train computer technicians in the elements of computer forensics investigation. Prerequisite: IS 234 or permission of instructor. (SFCC)

IS 244 – Network Security I (5 cr)

Network Security focuses on the fundamental principles of computer and network security. It is a survey of security fundamentals, networks threats, network operating systems security features, firewalls, virtual private networks, encryption and intrusion detection. Prerequisite: Permission of instructor. (SFCC)

IS 245 – Network Security II (5 cr)

This course is an introduction to the development of Network Systems defense and countermeasures. Students learn the steps utilized to respond to techniques used to compromise networks. It specifically leads students through the process of learning the foundations of network security, firewall implementation and intrusion detection. Prerequisite: IS 244 or permission of instructor. (SFCC)

IS 260 – Database Theory (5 cr)

This course serves as a foundation for working with all types of databases. It reviews what a database is and moves into the various database models such as hierarchical, network, relational, entity and object oriented. It also covers design concepts, SQL, normalization and database administration. Prerequisite: CAPP5 114 or permission of instructor. (SFCC)

IS 262 – Network Management (5 cr)

This is an intensive course in the technical management of computer networks including servers and workstations. Students, who are expected to understand the principles of telecommunications, will learn to install, manage and maintain a network. Microsoft and Linux are the primary software used. However, other Network Operating Systems (NOS) are installed. This course stresses concepts and practical usage of many types of NOS. Prerequisite: IS 162. (SFCC)

IS 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

IS 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

COOPERATIVE EDUCATION**COOP 266 – Cooperative Education Seminar (1-2 cr)**

Students study areas such as self-awareness and assessment, career awareness and exploration, career decision making, career planning and placement, success factors and attitudes on the job, motivation and initiative, human behavior and relations, and employability skills. A maximum of six credits are allowed toward any degree. Prerequisite: Permission of instructor/Coordinator. (SCC, SFCC)

COOP 267 – Cooperative Education Work Experience (1-18 cr)

This course offers coordinated on-the-job, supervised work experience related to the student's field of study. Students may receive variable credits for hours of structured work experience during a quarter. The credit award is based on a maximum of one credit for every three weekly cooperative education hours during a quarter. See specific program requirements for number of credits allowed. Prerequisite: Permission of instructor/Coordinator. (SCC, SFCC)

COOP 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

This course offers coordinated on-the-job, supervised work experience related to the student's field of study. Students may receive variable credits for hours of structured work experience during a quarter. The credit award is based on a maximum of one credit for every five weekly cooperative education hours during a quarter. See specific program requirements for number of credits allowed. This course differs from COOP 267 in that it has no seminar requirement. Prerequisite: Permission of instructor/Coordinator. (SCC, SFCC)

COSMETOLOGY**COS 101 – Introduction to Cosmetology (2 cr)**

This course provides introductory concepts in cosmetology. Students learn licensing requirements and state laws, the importance of rest and relaxation, effective communication, and human relationship skills. (SCC)

COS 111 – Cosmetology, Esthetics and Manicuring Concepts I (5 cr)

Students are introduced to the basic concepts of cosmetology. Theories introduced include manicuring, pedicuring, haircutting, permanent waving, hair styling, coloring, shampooing, rinsing, draping and thermal styling. Bacteriology, sterilization and sanitation also are presented. Prerequisite: Concurrent enrollment in COS 112, APLED 121 or permission of department. (SCC)

COS 112 – Cosmetology, Esthetics and Manicuring Applications I (12 cr)

Students are introduced to the basic application techniques and clinical practice on models and mannequins in the areas of thermal styling, hair shaping and styling, shampooing, rinsing and conditioning, permanent waving, manicuring and pedicuring. Safety and sanitary measures are emphasized. No more than 25 percent of the services are performed on mannequins. Prerequisite: Concurrent enrollment in COS 111, APLED 121 or permission of department. (SCC)

COS 113 – Manicuring Concepts I (4 cr)

Students are introduced to the basic concepts of manicuring. Theories presented include the proper use of implements, cosmetics and materials used in manicures, pedicures, and artificial nail applications. Principles of bacteriology and sanitation methods are emphasized. (SCC)

COS 114 – Manicuring Applications I (10 cr)

Students learn basic application techniques and clinical practice on models and mannequins in the following areas: Manicuring, pedicuring, nail preparation, acrylic sculpture, tip application, overlays and nail removal. Sanitation methods utilized in a salon setting are emphasized. No more than 25 percent of all services are performed on models. (SCC)

COS 115 – Manicuring Concepts II (4 cr)

This course continues with the concepts of manicuring introduced in COS 113. Nail structure, nail diseases and disorders, bacteriology, and sanitation methods are emphasized. (SCC)

COS 116 – Manicuring Applications II (10 cr)

Students learn advanced application techniques and clinical practice on models and mannequins in the following areas: Manicuring, pedicuring, nail preparation, acrylic sculpture, tip application, various nail overlays and nail removal. Safety and sanitary methods are emphasized. No more than 25 percent of all services are performed on models. Prerequisite: COS 113, 114. (SCC)

COS 119 – Advanced Manicuring Concepts (1 cr)

This course continues the concepts introduced in COS 115 with an emphasis on the safe use of drills, advanced artificial nail applications, nail art and nail enhancements. Prerequisite: COS 113, 115. (SCC)

COS 121 – Cosmetology, Esthetics and Manicuring Concepts II (5 cr)

Students are introduced to the basic concepts of skin and nail care, and their disorders and diseases. Chemistry for esthetics, electricity and light therapy also are introduced. Bacteriology, decontamination and infection control are emphasized. Prerequisite: COS 111, 112 and concurrent enrollment in CIS 105, COS 122, ISFTY 111 or permission of department. (SCC)

COS 122 – Cosmetology, Esthetics and Manicuring Applications II (11 cr)

Students are introduced to the basic application techniques and clinical practice on patrons for facials, packs, masks, machine facials, massage, temporary superfluous hair removal, eyebrow arching, lash and brow tintings, and artificial lashes. No more than 25 percent of the services are performed on mannequins. Prerequisite: COS 111, 112 and concurrent enrollment in CIS 105, COS 121, ISFTY 111 or permission of department. (SCC)

COS 123 – Esthetics Concepts I (4 cr)

This course introduces students to the basic concepts of skin care, skin disorders and diseases of the skin. Chemistry for esthetics, bacteriology, sanitation and sterilization, and electricity and light therapy are emphasized. (SCC)

COS 124 – Esthetics Applications I (10 cr)

Students learn basic application techniques and obtain clinical practice on clients in facials, packs, masks, machine facials, massage, temporary superfluous hair removal, eyebrow arching, lash and brow tinting and artificial eyelashes. No more than 25 percent of all services are performed on models. (SCC)

COS 125 – Esthetics Concepts II (4 cr)

This course introduces students to advanced concepts of skin care, skin structure, color theory, makeup techniques and facials with the aid of machines. (SCC)

COS 126 – Esthetics Applications II (10 cr)

This course introduces students to intermediate application techniques and clinical practice on clients in facials, packs, masks, machine facials, massage techniques, temporary superfluous hair removal, eyebrow arching, lash and brow tinting, artificial eyelash application, make-up application and skin analysis. No more than 25 percent of the services are performed on mannequins. Prerequisite: COS 123, 124. (SCC)

COS 127 – Advanced Esthetics Concepts (1 cr)

This course provides students with advanced concepts required for success in a cosmetology setting. Advanced topics include body treatments and tinting of facial and body hair. Prerequisite: COS 123, 124. (SCC)

COS 129 – Advanced Manicuring Applications (2 cr)

Students are introduced to the advanced concepts of manicuring. Theories presented include the proper use of implements, cosmetics and materials used in manicures, pedicures, nail art and the application of artificial nails. Principles of bacteriology and sanitation methods are emphasized. Prerequisite: COS 113. (SCC)

COS 131 – Intermediate Cosmetology I (5 cr)

This comprehensive course introduces intermediate concepts of hair and scalp structures, disorders, and diseases. Haircutting, permanent waving, hair coloring and curl reformation are emphasized. Prerequisite: COS 121, 122 and concurrent enrollment in COS 132 or permission of department. (SCC)

COS 132 – Intermediate Cosmetology Applications I (11 cr)

Students are introduced to intermediate application and clinical practice in all aspects of cosmetology with emphasis on permanent waving, hair coloring and cutting techniques, and curl reformation. No more than 25 percent of the services are performed on mannequins. Prerequisite: COS 121, 122 and concurrent enrollment in COS 131 or permission of department. (SCC)

COS 227 – Advanced Esthetics Applications (2 cr)

This course provides students with advanced practice required for success in a cosmetology setting. Students gain practice in advanced topics including body treatments and tinting of facial and body hair. Since this is an advanced application course, students are expected to complete the assigned projects in a given time with pre-established accuracy rates. Prerequisite: COS 123, 124, 125, 126, 127. (SCC)

COS 232 – Management and Laboratory Supervision (16 cr)

This course provides training in management and laboratory supervision for cosmetology students. (SCC)

COS 241 – Intermediate Cosmetology II (5 cr)

This comprehensive course introduces intermediate concepts of hair styling, permanent waving chemistry, and the care and styling of artificial hair. An in-depth review of skin disorders, as well as hair and scalp disorders, is discussed. Prerequisite: COS 131, 132 and concurrent enrollment in APLED 112, COS 242 or permission of department. (SCC)

COS 242 – Intermediate Cosmetology Applications II (10 cr)

Students are introduced to permanent waving chemistry, intermediate concepts of hair styling, and the care and styling of artificial hair. An in-depth review of skin, hair and scalp disorders is presented. No more than 25 percent of the services are performed on mannequins. Prerequisite: COS 131, 132 and concurrent enrollment in APLED 112, COS 241 or permission of department. (SCC)

COS 251 – Advanced Cosmetology I (5 cr)

This course presents advanced concepts of hair color chemistry and a comprehensive review of haircutting, styling and skin disorders in preparation for the state board exam. Prerequisite: COS 241, 242 and concurrent enrollment in APLED 125, COS 252 or permission of department. (SCC)

COS 252 – Advanced Cosmetology Applications I (10 cr)

This course introduces advanced applications and clinical practice in all aspects of cosmetology with emphasis on permanent waving, haircutting, coloring and styling. No more than 25 percent of the services are performed on mannequins. Prerequisite: COS 241, 242 and concurrent enrollment in APLED 125, COS 251 or permission of department. (SCC)

COS 261 – Advanced Cosmetology II (5 cr)

This comprehensive course prepares students for the state board examination with a complete review of textbooks. Hair chemistry and properties, electricity, nail structures and disorders are emphasized. Prerequisite: COS 251, 252 and concurrent enrollment in COS 262, MGMT 205 or permission of department. (SCC)

COS 262 – Advanced Cosmetology Applications II (7-10 cr)

This course introduces advanced applications and clinical practice in all phases of manicuring and cosmetology. Hair styling, haircutting and chemical applications are emphasized. No more than 25 percent of the services are performed on mannequins. Prerequisite: COS 251, 252 and concurrent enrollment in COS 261, MGMT 205 or permission of department. (SCC)

COS 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

COS 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

COS 275 – Cosmetology Application (1-5 cr)

This class provides students with additional time in order to meet Cosmetology state licensure requirements of 1600 hours. Prerequisite: Completion of all seven quarters of Cosmetology program, two quarters of manicuring program or two quarters of esthetics program. (SCC)

COS 284 – Special Projects (1 cr)

Students receive training in instructional methods. Course content varies depending upon the topics chosen. (SCC)

COS 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

CREDIT AND FINANCIAL MANAGEMENT**CRMGT 110 – Introduction to Finance (3 cr)**

Principles of finance in the operations of a profit-seeking firm, problems involved in the acquisition and use of funds, sources and instruments of capital and finance, financial organization, and financing of operations from the viewpoints of both supplier and user of funds. Prerequisite: ACCT& 201 or permission of instructor. (SFCC)

CRMGT 140 – Financial Statement Analysis (3 cr)

Tools and techniques necessary for evaluation of financial and operating performance of a modern business enterprise. Subjects include statement spreading, basic concepts and ratio analysis, trend analysis, external analysis, short-term liquidity and solvency, financial strength, and asset utilization. Prerequisite: ACCT& 201 or permission of instructor. (SFCC)

CRMGT 150 – Introduction to Investments (2 cr)

An introduction to the world of stocks, bonds, mutual funds, commodities and real estate. Course focuses on investment goals, alternatives, information, process and portfolio management. (SFCC)

CRMGT 190 – Business Credit Principles (3 cr)

This course provides an introduction to the overall field of credit in the U.S. economy. It examines both consumer credit and commercial credit from the standpoint of providers. The course covers the role of credit, types of credit, credit administration, examination, evaluation, and collection and credit files. (SFCC)

CRMGT 220 – Credit Law/Collection Techniques (3 cr)

This course provides an introduction to credit technology. Emphasis is on solving case problems and actual credit situations. Techniques for more effective, timely collections including letters, telephone calls, personal visits and legal remedies are explored. Basic consumer and commercial credit laws for managers are considered. Prerequisite: CRMGT 190 or permission of instructor. (SFCC)

CRIMINAL JUSTICE**CJ& 101 – Intro to Criminal Justice (5 cr)**

This course is an overview of the scope of the law enforcement officer's role. Jurisdiction of local, state and federal agencies, career opportunities and qualifications for recruitments are emphasized. (SCC)

CJ 102 – Administration of Justice (5 cr)

Students explore the processes of criminal justice in this course. The court system, corrections, juvenile justice and the law officer's role are emphasized. (SCC)

CJ 103 – Police Organization and Administration (3 cr)

Students are introduced to principles, concepts and theories relating to police organization and administration within line and staff functions in the uniform and investigative units. (SCC)

CJ 104 – Crime Scene Diagramming (5 cr)

The course emphasis is on the reconstruction of traffic collision scenes and crime scenes. This course prepares students to accurately diagram collision and crime scenes using standard measuring equipment and computer based hardware and software, to aid investigations and prepare exhibits for court. (SCC)

CJ& 105 – Intro to Corrections (5 cr)

Principles and practices of the corrections field are explored in this course. Objectives of probation and parole with an overview of rehabilitation methods and institutional settings are emphasized. (SCC)

CJ 106 – Introduction to Juvenile Control (3 cr)

This course covers the elements, functions and purpose of juvenile law. Arrest, detention, petition, records, interviewing interrogation, overview of contributing factors to delinquency and the officer's role in prevention are emphasized. (SCC)

CJ 107 – Dynamics of Deviant Behavior (5 cr)

Students identify, compare and analyze common behaviors exhibited by offenders in corrections. (SCC)

CJ 108 – Introduction to Traffic Investigation (3 cr)

Students gain basic skills and knowledge in traffic accident investigation. Practical applications and techniques required to conduct a field investigation are emphasized. Basics of traffic control and traffic laws also are presented. Prerequisite: CJ& 101, 102, 104. (SCC)

CJ 132, 133, 241, 242, 243 – Criminal Justice Physical Training (1 cr ea)

The concepts of personal physical training development are explored in this course. Students work at an individualized pace building their fitness required by Washington State Law Enforcement Standards. Students are required to be enrolled in law enforcement physical training during each quarter of attendance. Prerequisite: Students must have medical insurance and a doctor's release if needed; fitness assessment required. If assessed below minimum fitness level, CJ 208 is recommended. Concurrent enrollment in PE 186 for audit. (SCC)

CJ 150 – Criminal Justice Report Writing (3-5 cr)

This course presents technical writing content specific to the criminal justice system. Students learn standard grammar/punctuation and basic composition skills. The content is chosen from a menu that may include, but is not limited to, the following: standard police reports where information may be obtained from investigations, interrogations or other written reports; forms such as traffic citations, traffic accidents or evidence tags; and a variety of technical reports related to law enforcement. (SCC)

CJ 200 – Officer's Survival (5 cr)

Students develop principles and skills of risk management as related to daily patrol situations. Skills include cover vs. concealment, command, contain, control and coordination, as well as communication, background and kill zone tactics. Students' skills are tested in a series of real-to-live police situations (field problems). Prerequisite: CJ 150, 201, 205, 237. (SCC)

CJ 201 – Laws of Arrest, Search and Seizure (5 cr)

Concepts of how to conduct a lawful arrest; search and seizure of suspects and evidence; and practicalities of conducting a search of persons, cars and houses are emphasized in this course. Prerequisite: CJ& 101, CJ 102. (SCC)

CJ 203 – Police Interviewing Techniques (3 cr)

The use of scientific interrogation aids are introduced in this course. Complaints, witnesses, psychological implications, admissions, confessions and statements are explored. (SCC)

CJ 205 – Introduction to Criminal Law (5 cr)

Basic concepts of Title 9 and 9A of the Revised Code of Washington are presented in this course. Elements, purposes and functions of criminal law are emphasized. Prerequisite: CJ& 101, CJ 102. (SCC)

CJ 208 – Criminal Justice Fitness Seminar (3 cr)

Personal physical training and nutrition are explored in this course to prepare students for the rigors of CJPT courses. Students work on fitness training and nutrition specifically required to bring them to a level of fitness required to successfully train with CJPT students and to ultimately reach appropriate standards of fitness required for entrance to law enforcement or corrections academies. May be repeated up to a maximum of 6 credits. CJ 208 may be substituted up to two times, to meet graduation requirements for any of the following courses: CJ 132, 133, 241, 242 or 243. Prerequisite: Concurrent enrollment in PE 186 for audit. (SCC)

CJ 209 – Human Relations (3 cr)

Students develop objective approaches to human relations problems. Students must demonstrate the ability to exercise skills in personal power and nonjudgmental communication skills. (SCC)

CJ 210 – Police Psychology (3 cr)

Theories of perception, emotion, motivation, personality and nonverbal communication used as tools by police officers in everyday contacts are introduced in this course. Understanding behavior and predicting human behavior in common police situations are emphasized. (SCC)

CJ 211 – Crime Scene Investigations (6 cr)

This comprehensive course covers all aspects of crime scene investigations. Areas of emphasis include fundamentals and techniques of investigations; crime scene search; field applications in the development, collection and preservation of physical evidence. Classification and rules of evidence, admissibility, weight and value of evidence, witnesses, and presentation of evidence in court also are included. Prerequisite: CJ 104, 150, 201, 203, 205. (SCC)

CJ 212 – Professional Development (1 cr)

A variety of self-development activities are provided throughout this course to assist students in gaining employment after graduation. Activities include civil service examinations, both written and oral, and exercises in professional conduct. This course is required in one of the students' last two quarters prior to graduation. Corrections students must take this course in each of their last three quarters of attendance. (SCC)

CJ 215 – Corrections-Security-Practice and Procedure (5 cr)

Students learn to perform necessary security and procedural functions, operate security devices and understand inmate management principles utilized in security settings. (SCC)

CJ 216 – Communication Techniques with the Incarcerated Offender (5 cr)

This course integrates an array of communications skills and techniques that are used effectively when working with offenders in correctional settings. (SCC)

CJ 225 – Advanced Techniques in Correctional Programming (5 cr)

Students engage in the process of studying, practicing and evaluating correctional program and treatment approaches. (SCC)

CJ 227 – Minority Studies (5 cr)

Students study and participate in discussions of ethnic history, cultural conflicts and legal rights issues, and how they affect the offender. (SCC)

CJ 228 – Ethics - Standards of Conduct (3 cr)

Issues of attitudes, professional responsibility, ethics of professional relationships and personal appearances are incorporated in this seminar format. Interaction with offenders and professionals in the field is included. (SCC)

CJ 230 – Institutional Programming (3 cr)

Students develop program plans, learn prisoners' rights, and supervise and manage inmates. (SCC)

CJ 235 – Firearms Safety (2 cr)

Students explore the handling and use of firearms. The development of skills in safety and proficiency in the basic firing positions is emphasized. This course is not designed for students to develop qualifying proficiency. Prerequisite: Permission of instructor and concurrent enrollment in CJ 236. (SCC)

CJ 236 – Firearms Qualifications (2 cr)

Students develop marksmanship ability in this course. Students passing the firearms course attain the qualifying score on the approved P.P.C. course. Prerequisite: Permission of instructor and concurrent enrollment in CJ 235. (SCC)

CJ 237 – Criminal Justice Self-defense (3 cr)

Students study weaponless defense of police officers emphasizing mental control of suspects, crowd control and proper use of the police baton. Prerequisite: Students must pass one quarter of criminal justice physical training with a 2.0 or higher. (SCC)

CJ 250 – Career Assessment (2 cr)

The course emphasis is on gathering and documenting career related training and experience in a portfolio that will be assessed for comparable academic credit. Prerequisite: Basic Computer Skills Recommended. Permission of instructor and evidence of employment required and concurrent enrollment in CJ 251. (SCC)

CJ 251 – Career Development (2 cr)

The course emphasis is on using the assessment and credit award from CJ 250 to develop a plan to finish and Associate or Bachelor Degree. Prerequisite: Basic Computer Skills recommended. Permission of instructor and evidence of employment required and concurrent enrollment in CJ 250. (SCC)

CJ 265 – Service Learning Volunteer Project (3 cr)

This course enhances learning by connecting academic subjects to real world experience thus fostering civic duty and citizenship. Students fill community needs with direct, meaningful work enabling them to help others and give of themselves through volunteer service. (SCC)

CJ 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

CJ 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

CJ 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

CULINARY ARTS**CUL 101 – Ice Carving (1-3 cr)**

Students learn the fundamentals of ice carving, how to work with power and hand tools, pattern designs, ice block preparation. Each student produces one ice carving using a design of their choice. Lab fees cover the cost of ice blocks used in the course. Prerequisite: Permission of instructor or counselor. (SCC)

CUL 110 – Introduction to Culinary Arts (5 cr)

Students learn basic cooking principles including modern kitchen organization, standards of professionalism, and the tools and equipment used in the cooking process. (SCC)

CUL 113 – Introduction to the Food Service Industry (10 cr)

Students learn theory and practical applications in dining room service and procedures. All aspects of dining room service and management are addressed in a dining room setting. (SCC)

CUL 114 – Dining Room and Banquet Management (5 cr)

Theory and practical applications in the organization and management of dining rooms and banquets. (SCC)

CUL 115 – Food Sanitation (3 cr)

Students are introduced to basic food service sanitation principles with emphasis on cleaning/sanitation methods and the safe storage of food. (SCC)

CUL 116 – Nutrition for Culinary Arts (3 cr)

This course introduces students to the characteristics, functions, and food sources of major nutrients and how to maximize nutrient retention in food preparation and storage. Digestion, energy needs, recommended daily allowances and dietary guidelines are emphasized. (SCC)

CUL 123 – Espresso (1-2 cr)

This course introduces students to the techniques and procedures required to successfully operate an espresso stand. (SCC)

CUL 124 – Cooking Applications I (7-10 cr)

This course continues with the concepts introduced in CUL 110. Students work with raw materials, preliminary cooking and flavoring, and apply a variety of cooking methods including the preparation of stocks, soups, salads, and vegetable and starch products. Prerequisite: Permission of instructor or counselor. (SCC)

CUL 125 – Hospitality Purchasing (2 cr)

Students are introduced to the procedures used in the purchase of foods in quantity. The selection and procurement methods utilized in the hospitality industry are emphasized. (SCC)

CUL 126 – Food Science (5 cr)

This course emphasizes basic cooking methods including the preparation of soups, stocks and sauces; meat, fish and poultry; vegetables, fruits and starches; as well as an introduction to breakfast and baking preparation. Prerequisite: Permission of instructor or counselor. (SCC)

CUL 127 – Banquet Service (2 cr)

Students study theory and learn practical applications in the organization and management of banquets. (SCC)

CUL 130 – Advanced Cooking Applications (7 cr)

Students learn practical applications in the methods used to create soups, sandwiches, salads and wrappers. (SCC)

CUL 131 – A la Carte Service (9 cr)

This course introduces practical applications in the methods used to provide exceptional a la carte services in a variety of settings. Prerequisite: Concurrent enrollment in HM 130. (SCC)

CUL 134 – Cooking Applications II (10 cr)

Students continue with the concepts introduced in CUL 123 with an emphasis on the creation of a buffet menu from concept through execution. The development of group leadership skills is addressed. (SCC)

CUL 243 – Theory of Restaurant Baking (5 cr)

Students are introduced to the basic principles of restaurant baking with emphasis on ingredients, yeast dough formulas and techniques, and the mixing and baking of a variety of breads, pies and pastries. (SCC)

CUL 244 – Restaurant Baking Applications (10 cr)

Students are introduced to the preparation of baked goods, desserts and pastries, and the acquisition of baking skills and artistic abilities. Production techniques also are addressed. (SCC)

CUL 253 – Advanced Cooking Theory (5 cr)

Students are introduced to the composition and structure of meats with emphasis on the identification of primal cuts and their relationship to meat selection and cooking methods. Fundamentals of sauce making also is addressed. (SCC)

CUL 254 – A la Carte Cooking I (10 cr)

Students use the skills acquired in CUL 124 and develop more technical skills necessary to cook foods to exceptional levels on a consistent basis while working in a professional kitchen. (SCC)

CUL 255 – Menu Planning (3 cr)

Students are introduced to the composition of menus including the areas of purchasing procedures, merchandising, servicing and pricing of foods. Planning a functional, operative menu using appropriate menu copy and layout is emphasized. Prerequisite: Concurrent enrollment in APLED 121. (SCC)

CUL 260 – Presidential (1 cr)

Methods used to provide formal service in a variety of elegant settings are addressed in this course. (SCC)

CUL 262 – Dining Room Management (1 cr)

Introductory concepts in the organization and management of dining rooms are addressed in this course. (SCC)

CUL 263 – Theory of Modern Cuisine (5 cr)

Students are introduced to the cooking principles commonly utilized in the preparation of ethnic and international cuisines. (SCC)

CUL 264 – A la Carte Cooking II (9 cr)

This course continues the concepts introduced in CUL 254 and emphasizes the selection of appropriate cooking methods and the handling, cutting and cooking of a variety of meats and fish products. (SCC)

CUL 265 – Hospitality Cost Controls (5 cr)

Students are introduced to the principles and procedures involved in an effective system of food, labor and sales income control. The development and use of standards, and the calculation of actual costs are emphasized. Prerequisite: Successful completion of first year culinary coursework. (SCC)

CUL 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

CUL 267 – Cooperative Education Work Experience (1-4 cr)

For course description, see Cooperative Education. (SCC)

CUL 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

DENTAL ASSISTING**DENT 111 – Introduction to Dental Assisting (5 cr)**

This course is an introduction to the techniques of chairside assisting using principles of four-handed dentistry, instrumentation, maintenance of equipment and administration of local anesthetic. Prerequisite: Concurrent enrollment in DENT 112, 116. (SCC)

DENT 112 – Chairside Related Theory (4 cr)

This course is an introduction to the role of the dental assistant as a member of the dental health team. Techniques and principles of preventive dentistry and microbiology as they relate to aseptic techniques in the dental office are emphasized. Infection control, safety standards and hazardous waste management are addressed. Prerequisite: Concurrent enrollment in DENT 111, 116. (SCC)

DENT 114 – Introduction to Dental Radiology (3 cr)

This course offers instruction in the basic principles of radiography physics, modern intraoral dental radiographic techniques, arrangements and care of darkroom equipment, composition and preparation of solutions, procedure for processing films, mounting films, mannequin practice in exposing films, patient interproximal X-rays for diagnostic purposes, radiation protection and safety guidelines. Prerequisite: Concurrent enrollment in DENT 111, 112, 116. (SCC)

DENT 116 – Dental Restorative Techniques (3 cr)

This course offers instruction in the physical properties, manipulation and uses of dental materials commonly used in restorative dental procedures. Maintenance of equipment used in the laboratory is emphasized. Prerequisite: Enrolled in first quarter of the dental assisting program. (SCC)

DENT 118 – Dental Anatomy (4 cr)

Students learn interrelationships of body structure and functions of all body systems, head and neck anatomy, oral embryology, histology, tooth morphology and dental charting. (SCC)

DENT 121 – Intermediate Chairside Assisting (6 cr)

This course continues with the concepts learned in DENT 111 emphasizing the procedures and instruments of the recognized specialties. Prerequisite: Successful completion of first quarter and concurrent enrollment in DENT 122. (SCC)

DENT 122 – Chairside Related Theory (4 cr)

This course offers instruction in nutrition and dietary counseling as part of dental treatments, applied pharmacology, dental pathology and emergencies in a dental office. Prerequisite: Successful completion of first quarter and concurrent enrollment in DENT 121. (SCC)

DENT 123 – OSHA Refresher Course for Dental Personnel (1 cr)

This course is designed to provide updated information regarding OSHA regulations as they pertain to the dental profession. This course is offered as an on-line course only. (SCC)

DENT 124 – Advanced Dental Radiology (2 cr)

This course offers instruction in advanced techniques of dental radiology, anatomical landmarks and dental anatomy pertaining to dental radiology. Practice taking full-mouth radiographs on children and adults for diagnosis by a dentist and evaluation of films are emphasized. Instruction in maintenance of automatic processors, duplicating, panoramic techniques and equipment also is offered. Prerequisite: Successful completion of first quarter and concurrent enrollment in DENT 121, 122. (SCC)

DENT 126 – Dental Restorative Techniques (4 cr)

This course offers instruction in the physical properties and manipulation of dental materials used in diagnostic and prosthetic procedures. Appropriate instrumentation also is included. Prerequisite: Successful completion of first quarter and concurrent enrollment in DENT 121, 122. (SCC)

DENT 129 – Chairside Clinical Experience (2 cr)

Students acquire clinical practice in handling patients and assisting in four-handed dentistry procedures. The clinical instruction is conducted in selected private dental offices. Clinical assignments are designed to enhance students' competence in performing dental assisting functions. General dentistry is emphasized. Seminars are devoted to evaluation of the clinical experience, discussion of communication in the dental practice and attitude of the dental assisting student. Prerequisite: Successful completion of second quarter with 2.0 GPA or better and satisfactory progress in DENT 121, 122, 124, 126. (SCC)

DENT 131 – Advanced Chairside Assisting (6 cr)

This course offers instruction and practical application of procedures permitted the dental assistant in the State of Washington according to the current State Dental Practice Act. Prerequisite: Successful completion of second quarter. (SCC)

DENT 136 – Dental Restorative Techniques (2 cr)

This course offers advanced instruction in the physical properties and manipulation of dental materials involved in prosthetic procedures. Prerequisite: Successful completion of second quarter and concurrent enrollment in DENT 131. (SCC)

DENT 138 – Office Management (3 cr)

Students learn the nonclinical functions that dental auxiliaries are required to perform emphasizing communications, scheduling, appointments, making financial arrangements, collection techniques, recalls, completion of insurance forms, maintaining an inventory and supply system, and familiarization with computer programs used in dentistry. Prerequisite: Successful completion of second quarter and concurrent enrollment in DENT 131. (SCC)

DENT 139 – Chairside Clinical Experience (8 cr)

Students acquire clinical practice to perfect their competence in performing dental assisting functions that take place under the direct supervision of dentists in private practices, specialties and dental clinics. The major portion of students' time is spent actually assisting or actively participating in patient care. Seminars are held to evaluate and review clinical applications. Prerequisite: Successful completion of second quarter with 2.0 grade or better and satisfactory progress in DENT 131, 136, 138. (SCC)

DENT 141 – EFDA Review Class (5 cr)

This course is designed to provide the Certified Dental Assistant (CDA) review for the Expanded Function Dental Auxiliary (EFDA) course content. The course includes the evaluation of the student's ability to perform skills under the dentist's general supervision to include: Patient oral health instruction; coronal polishing; fluoride treatments; sealants; expose, process and mount dental radiographs. Prerequisite: Successful completion of the Dental Assistant program with a 2.0 grade or better. Admission to the program and concurrent enrollment in DENT 142, 144, 145, 148. (SCC)

DENT 142 – EFDA Review Lab (2 cr)

This course is designed to provide the Certified Dental Assistant (CDA) review for the Expanded Function Dental Auxiliary (EFDA) course content. The course includes correct ergonomic positioning and skills on typodonts and/or simulated patients. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 141, 144, 145, 148. (SCC)

DENT 144 – EFDA Amalgam Restorations (2 cr)

This course is designed to focuses on the didactic, laboratory and clinical components of the amalgam curriculum to include: Armamentarium including various matrices, classification of restorations; components of the prepared tooth; materials, composition of amalgam, advantages and disadvantages, indications and contraindications; placement, condensing and carving; evaluation of restoration; occlusal adjustment. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 141, 142, 145, 148. (SCC)

DENT 145 – EFDA Amalgam Lab (4 cr)

This course is designed to focuses on the didactic, laboratory and clinical components of the amalgam curriculum to include: Armamentarium including various matrices, classification of restorations; components of the prepared tooth; materials, composition of amalgam, advantages and disadvantages, indications and contraindications; placement, condensing and carving; evaluation of restoration; occlusal adjustment. This course includes the lab portion of amalgam restoration. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 141, 142, 144, 148. (SCC)

DENT 148 – EFDA Amalgam Clinical (3 cr)

This course is designed to focuses on the didactic, laboratory and clinical components of the amalgam curriculum to include: Armamentarium including various matrices, classification of restorations; components of the prepared tooth; materials, composition of amalgam, advantages and disadvantages, indications and contraindications; placement, condensing and carving; evaluation of restoration; occlusal adjustment. This course includes the clinical portion of amalgam restoration. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 141, 142, 144, 145. (SCC)

DENT 151 – EFDA Composite Restorations (3 cr)

This course is designed to focuses on the didactic, laboratory and clinical components of the amalgam curriculum to include: Armamentarium including various matrices, classification of restorations; components of the prepared tooth; materials, composition of composite, advantages and disadvantages, indications and contraindications; placement, condensing and carving; evaluation of restoration; occlusal adjustment. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 152, 154, 155, 158, 160. (SCC)

DENT 152 – EFDA Composite Lab (4 cr)

This course is designed to focuses on the didactic, laboratory and clinical components of the amalgam curriculum to include: Armamentarium including various matrices, classification of restorations; components of the prepared tooth; materials, composition of composite, advantages and disadvantages, indications and contraindications; placement, condensing and carving; evaluation of restoration; occlusal adjustment. This course includes the laboratory portion of the course. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 151, 154, 155, 158, 160. (SCC)

DENT 154 – EFDA Composite Clinical (3 cr)

This course is designed to focuses on the didactic, laboratory and clinical components of the amalgam curriculum to include: Armamentarium including various matrices, classification of restorations; components of the prepared tooth; materials, composition of composite, advantages and disadvantages, indications and contraindications; placement, condensing and carving; evaluation of restoration; occlusal adjustment. This course includes the clinical portion of the course. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 151, 152, 155, 158, 160. (SCC)

DENT 155 – EFDA Impressions/Provisional (3 cr)

This course is designed to focuses on the didactic, laboratory components of the taking preliminary and final impressions and bite registrations to include computer assisted design and computer assisted manufacture applications. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 151, 152, 154, 158, 160. (SCC)

DENT 158 – EFDA Impressions/Provisional-Lab (2 cr)

This course is designed to focuses on the didactic, laboratory components of the taking preliminary and final impressions and bite registrations to include computer assisted design and computer assisted manufacture applications. This course includes the laboratory portion of the course. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 151, 152, 154, 155, 158, 160. (SCC)

DENT 160 – EFDA Exam Preparation (3 cr)

This course is designed to focuses on the didactic, laboratory components of the taking preliminary and final impressions and bite registrations to include computer assisted design and computer assisted manufacture applications. This course includes the examination portion of the course. Prerequisite: DENT 141, 142. Admission to the program and concurrent enrollment in DENT 151, 152, 154, 155, 158. (SCC)

DIAGNOSTIC MEDICAL SONOGRAPHY**SONO 111 – Diagnostic Ultrasound I (2 cr)**

This course is an introduction to the field of diagnostic sonography and the role of the sonographer. The importance of professionalism, ethical and legal issues including AIDS and written communications is stressed. Various types of sonographic procedures will be discussed with their applications to abdominal scanning. Various discussion groups and tours are an integral component of this course. Prerequisite: Admission to the Diagnostic Medical Sonography program and concurrent enrollment in SONO 121, 125. (SCC)

SONO 112 – Vascular Fundamentals (4 cr)

This course is an introduction to basic vascular anatomy of the lower and upper extremities, abdomen, visceral organs and cerebral vasculature with emphasis on the physiology of these systems. An introduction to the concepts essential for the performance and interpretation of vascular exams is also included. Laboratory experience is required. (SCC)

SONO 121 – Human Cross-Section Anatomy (4 cr)

Transverse and sagittal cross-sectional anatomy of the human body is compared to the tomographic images obtained by ultrasound, magnetic resonance (MR) and computed tomography (CT). Emphasis is placed on gross human anatomy as sliced into tomographic planes and the tissue characteristics that create image variations. Laboratory experience is provided. Prerequisite: Admission to Diagnostic Medical Sonography Program and concurrent enrollment in SONO 111, 125. (SCC)

SONO 125 – Ultrasound Physics and Instrumentation I (5 cr)

This course emphasizes ultrasound physics, the physics of waves, sound transmission, attenuation, pulse wave principles, transducer and ultrasound systems operations. Prerequisite: Admission to Diagnostic Medical Sonography Program and concurrent enrollment in SONO 111, 121. (SCC)

SONO 131 – Diagnostic Ultrasound II (5 cr)

This course is an investigation of the application for ultrasound in the abdomen, small parts and intraoperative. The pathophysiology of the abdomen, small parts and intraoperative applications is discussed. Emphasis is on the technique and image assessment. Both normal and abnormal anatomy is identified. Laboratory experience is provided. Prerequisite: Concurrent enrollment in SONO 135. (SCC)

SONO 135 – Ultrasound Physics and Instrumentation II (5 cr)

This is a continuation of the concepts introduced in SONO 125. Ultrasound physics with emphasis on the Doppler techniques, artifacts, and utilizing instrumentation to investigate the principles of Doppler technique and artifacts. Prerequisite: Admission to Diagnostic Medical Sonography Program and concurrent enrollment in SONO 131. (SCC)

SONO 141 – Diagnostic Ultrasound III (5 cr)

Ultrasonic procedures and techniques utilized within the OB/GYN specialty are discussed. Scanning techniques, pathology and ethical issues are also included. Laboratory experience is provided using ultrasound simulation to develop normal and abnormal anatomy identification. Prerequisite: Admission to Diagnostic Medical Sonography program and concurrent enrollment in SONO 131. (SCC)

SONO 142 – Sonography Clinical Preparation (4 cr)

Basic scanning skills are developed by imaging normal's within the ultrasound laboratory; patient care skills are also included. The role and responsibilities of the sonographer and their job description is evaluated. Clinical requirements are defined and discussed. (SCC)

SONO 143 – Sonography Clinical I (6 cr)

Students are introduced to the clinical environment by spending four weeks in the clinical setting under the direction of a staff sonographer. Weekly clinical seminars are conducted with faculty. A clinical consciousness is developed with emphasis on professionalism, clinical rapport, medical ethics and patient care. Prerequisite: Admission to Diagnostic Medical Sonography program and concurrent enrollment in SONO 142. (SCC)

SONO 251 – Advanced Sonography (6 cr)

Advanced applications of ultrasound in the assessment of pathophysiology found within the abdominal scan, small parts and intraoperative scans, and OB/GYN scans are discussed. Emphasis is placed on the identification of anatomy and physiology as identified in the abnormal situation using ultrasound. Laboratory experience is provided using simulators to identify various pathological conditions. Prerequisite: Admission to Diagnostic Medical Sonography program and concurrent enrollment in SONO 253. (SCC)

SONO 253 – Sonography Clinical II (7 cr)

This course provides hands-on experience in the hospital and clinical environment. Emphasis is placed on the development of clinical techniques in the use of current ultrasound instrumentation in the evaluation of an acquired disease. Students then apply the principles of medical legal ethics and professionalism to the patient, physicians and other members of the health team. Clinical case reports are required. Prerequisite: Admission to Diagnostic Medical Sonography program concurrent enrollment in SONO 251. (SCC)

SONO 263 – Sonography Clinical III (13 cr)

This course provides hand-on experience in the hospital and clinical environment. Emphasis is placed on the development of clinical techniques in the use of current ultrasound instrumentation in the evaluation of an acquired disease. Students then apply the principles of medical legal ethics and professionalism to the patient, physicians and other members of the health team. Clinical case reports are required. Prerequisite: Admission to Diagnostic Medical Sonography program. (SCC)

SONO 273 – Sonography Clinical IV (13 cr)

This course is a continuation of SONO 263. This course is a full-time clinical internship and is completed in an affiliated local or out-of-town hospital, clinic or physician's office. Emphasis of this course is on the clinical skills necessary for the performance of and evaluation of the various sonography procedures. Written reports, review of current literature and attendance at conferences is required. Prerequisite: Admission to Diagnostic Medical Sonography program. (SCC)

DIESEL/HEAVY DUTY EQUIPMENT**HEQ 101 – Trucking Theory (2-4 cr)**

This course introduces students to the concepts required to train and retain professionally skilled tractor-trailer drivers. Emphasis is placed on the knowledge and procedures needed by for safe operation by the professional driver. Prerequisite: Concurrent enrollment in HEQ 102. (SCC)

HEQ 102 – Trucking Applications (4-6 cr)

This course is a continuation of HEQ 101 with emphasis on the application of the theory presented in the theory class. The development of safe driving habits and professional characteristics of the tractor trailer driver is stressed throughout the course. Prerequisite: HEQ 101 and concurrent enrollment in HEQ 101. (SCC)

HEQ 103 – Trucking Practical Shop Procedures (4 cr)

This course continues with practical experience gained in HEQ 101 and 102. Simulated shop operations for maintenance of various components are emphasized. Prerequisite: HEQ 101, 102 or permission of instructor and concurrent enrollment in HEQ 104. (SCC)

HEQ 104 – Trucking Practical Shop (1 cr)

Students learn practical applications of maintenance. Use of equipment, tools, machines and techniques are emphasized. Prerequisite: HEQ 101, 102 or permission of instructor and concurrent enrollment in HEQ 103. (SCC)

HEQ 111 – Basic Electrical Theory (7 cr)

Students are introduced to the theories of basic low voltage DC electricity and mobile air conditioning and their application to the repair of heavy equipment systems. Ignition systems, starting and charging systems, vehicle wiring and auxiliary electrical/electronic components are emphasized. Prerequisite: Concurrent enrollment in HEQ 112. (SCC)

HEQ 112 – Basic Electrical Applications (9 cr)

Students continue learning the concepts introduced in HEQ 111 with emphasis on the diagnosis and repair of low voltage DC electrical and mobile air conditioning systems common to heavy equipment. Prerequisite: Concurrent enrollment in HEQ 111. (SCC)

HEQ 121 – Basic Principles of Engine Theory (7 cr)

Students are introduced to basic engine theory and operation, and their application to the maintenance and repair of heavy equipment. Engine systems and their component parts are emphasized. Prerequisite: Concurrent enrollment in HEQ 122. (SCC)

HEQ 122 – Basic Engine Applications (9 cr)

Students continue learning concepts introduced in HEQ 121 with emphasis on the diagnosis and repair of the basic gasoline and diesel engine systems common to heavy equipment. Prerequisite: Concurrent enrollment in HEQ 121. (SCC)

HEQ 131 – Principles of Power Train Theory (7 cr)

Students are introduced to the theory and operation of clutches, transmissions, differentials, brakes (air and hydraulic), and their application to heavy equipment. Prerequisite: Concurrent enrollment in HEQ 132. (SCC)

HEQ 132 – Power Train Applications (9 cr)

Students continue to learn the concepts introduced in HEQ 131 with emphasis on the diagnosis and repair of clutches, transmissions, differential (air and hydraulic). Practice in the repair and maintenance of bearings and seals, steering and alignment, and fluid couplings is covered. The correct use of specialized shop tools and equipment is emphasized. Prerequisite: Concurrent enrollment in HEQ 131. (SCC)

HEQ 241 – Heavy Equipment Hydraulic Theory (7 cr)

Students are introduced to basic hydraulic theory and operation and their application to the maintenance and repair of heavy equipment. Hydraulic systems and their component parts are emphasized. Prerequisite: HEQ 111, 112, 121, 122, 131 and 132, or permission of instructor and concurrent enrollment in HEQ 242. (SCC)

HEQ 242 – Heavy Duty Equipment Hydraulic Application (9 cr)

This course offers practical application of students' knowledge. Students diagnose, repair and test a variety of hydraulic equipment. Prerequisite: HEQ 111, 112, 121, 122, 131 and 132, or permission of instructor and concurrent enrollment in HEQ 241. (SCC)

HEQ 251 – Practical Shop Procedures (7 cr)

This course offers practical shop application of students' knowledge and skills for the repair of basic electrical, engine, power train and heavy equipment. Prerequisite: HEQ 111, 112, 121, 122, 131 and 132, or permission of instructor and concurrent enrollment in HEQ 252. (SCC)

HEQ 252 – Practical Shop (8 cr)

This course continues with practical shop skills acquired in HEQ 251. Students receive shop experience in repairing a wider variety of heavy equipment. Prerequisite: HEQ 111, 112, 121, 122, 131 and 132, or permission of instructor and concurrent enrollment in HEQ 251. (SCC)

HEQ 261 – Practical Shop Procedures (8 cr)

This course continues with practical shop experience gained in HEQ 251, 252. Simulated shop operations for the repair and maintenance of various power train components are emphasized. Prerequisite: HEQ 111, 112, 121, 122, 131 and 132, or permission of instructor and concurrent enrollment in HEQ 262. (SCC)

HEQ 262 – Practical Shop (5 cr)

Students learn extensive practical applications of all aspects of heavy equipment repair. Use of specialized equipment, tools, machines and techniques is emphasized. In addition, comprehensive diagnosis and repair of transmissions are stressed. Prerequisite: HEQ 111, 112, 121, 122, 131 and 132, or permission of instructor and concurrent enrollment in HEQ 261. (SCC)

HEQ 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

HEQ 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

HEQ 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

HEQ 294 – Special Problems (3 cr)

Individualized student needs are addressed in this shop program. Students are assigned specialized shop projects and receive in-depth instruction about the specific aspects of heavy equipment repair. Prerequisite: Permission of instructor. (SCC)

DRAMA**DRMA& 101 – Intro to Theatre (5 cr)**

Dramatic forms and styles, historic developments of the theater and contemporary theater practices. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

DRMA 106 – Rehearsal and Performance (1-5 cr)

This is a course in which students receive training and practical experience in acting, directing or technical theater. Each quarter's production provides the necessary laboratory experience. Recommended for those desiring an overall acquaintance with various phases of theatrical production. Prerequisite: Permission of instructor. (SCC, SFCC)

DRMA 107 – Rehearsal and Performance (1-5 cr)

This is a course in which students receive training and practical experience in acting, directing or technical theater. Each quarter's production provides the necessary laboratory experience. Recommended for those desiring an overall acquaintance with various phases of theatrical production. Prerequisite: Permission of instructor. (SCC, SFCC)

DRMA 108 – Rehearsal and Performance (1-5 cr)

This is a course in which students receive training and practical experience in acting, directing or technical theater. Each quarter's production provides the necessary laboratory experience. Recommended for those desiring an overall acquaintance with various phases of theatrical production. Prerequisite: Permission of instructor. (SCC, SFCC)

DRMA 120 – Performance and Audition Techniques (3 cr)

Familiarization with the stage and technique in movement, development of technique and character through pantomimic suggestion, and study of the script from the actor's point of view. (SFCC)

DRMA 121 – Contemporary Acting (3 cr)

Definition of character and exercises in character portrayal, definition of mood or emotion and exercises in portrayal of attitude, and performance of characterization in representative scenes from major works of dramatic literature. Prerequisite: DRMA 106 or 120 or permission of instructor. (SFCC)

DRMA 220 – Classical Acting (5 cr)

Students study definition of character and exercises in character portrayal, definition of mood or emotion. They do exercises in portrayal of attitude and performance of characterization in scenes from major classical works of dramatic literature. Prerequisite: DRMA& 101 or DRMA 120 or 121 or permission of instructor. (SFCC)

DRMA 221 – Acting for Film and Television (5 cr)

Acting for film focuses on honing actors' skills essential for performances in front of the camera. The approach is very pragmatic. Emphasis is given to the differences between stage and camera performances, learning roles instead of lines, how the changing camera affect performance, the use of the voice for the camera, auditioning for a role, and participating in a shoot. Prerequisite: DRMA& 101 or DRMA 120 or 121 or permission of instructor. (SFCC)

DRMA 230 – Stagecrafting Theatrical Design (1-5 cr)

Students become proficient in understanding the theater environment, specifically theory of scene design and plans, construction techniques, scene painting, stage lighting techniques, purpose of lighting and design and costuming, properties and sound. May be repeated for a total of 15 credits. (SFCC)

DRMA 233 – Makeup (2 cr)

Purposes of stage makeup, physical features affected by makeup techniques, and technical skills in the application of stage makeup. (SFCC)

DRMA 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

DRMA 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

EARLY CHILDHOOD EDUCATION**ECED 100 – Basic Child Care Training (2 cr)**

This course is designed to provide the 20 hours of basic childcare training for child care providers. The course is based on the Adult-sized Guide to Child-size Environments and includes the recommended learning outcomes for Washington State Training and Registry System (S.T.A.R.S.) initial training. (SFCC)

ECED 101 – Issues and Trends in Early Childhood Education (5 cr)

This course examines the current and future issues and trends in early childhood education, with an international and historical perspective. The organizations and support systems for early childhood professionals are explored. (SFCC)

ECED 102 – Observation and Documentation (1-2 cr)

This course orients students to the application component of early childhood education (ECE) courses. Course content focuses on students' 44 hours field experience placement and requirements. Students are introduced to program philosophy, learning opportunity planning, observation and appropriate guidance strategies. If this course is taken prior to first quarter in the ECE program, student registers for 2 credits which consists of 11 lecture hours and 22 field hours with children. If taken concurrent with an ECE class requiring field hours, students register for one credit of 11 lecture hours. (SFCC)

ECED 103 – College Success (3 cr)

This course provides an opportunity for students entering early childhood education to learn about services and strategies to help them become successful college students. Prerequisite: Concurrent enrollment in any ECED course. (SFCC)

ECED 118 – Early Childhood Education Seminar (0.5-11 cr)

These short-term, skill-building seminars provide students with training options for the early childhood education profession. Content focuses on a variety of aspects of early childhood education. Seminars can be taken prior to ECE coursework or to meet one-time and/or ongoing training requirements. These seminars address 11 Core Competencies outlined in the Washington State Training and Registry System (STARS) and can be used to meet annual requirements. (SFCC)

ECED 124 – Methods of Learning (5 cr)

This course provides students with a theoretical overview of curriculum, methods of presentation and learning opportunity planning in the areas of social, emotional, cognitive, physical/motor and creative development for children birth through age eight. Educational philosophies guide the preparation, implementation and presentation of learning opportunities for curriculum within these areas. Forty-four hours of field experience are required. (SFCC)

ECED 125 – Science Methods in ECED (3 cr)

Explore the application of science methods in ECE programs. Develop developmentally appropriate science experiences for children birth to age 8. (SFCC)

ECED 126 – Math Methods in ECED (3 cr)

The course is designed to enhance the use of math in ECED programs by increasing the student's understanding of math and how to design developmentally appropriate experiences for young children. (SFCC)

ECED 132 – Fostering Social Competence (5 cr)

This survey course examines philosophical principles and theories used to guide early childhood educators in fostering the development of social competence in young children. Historical and current values held by society foster techniques for creating the context that supports optimal communication and the building of meaningful relationships among children and educators. Forty-four hours of field experience are required. (SFCC)

ECED 135 – Infant/Toddler Care and Education (5 cr)

The principles and scope of care giving, growth and development, guidance techniques and practical curriculum for working with infants and/or toddlers and their families, are the focus of this course. Forty-four hours of field experience in an infant and toddler environment are required as part of this course. (SFCC)

ECED 190 – Child Development (5 cr)

A survey of historical and current philosophies along with theories of growth and development in physical/motor, creative, social, emotional and cognitive areas are examined for children ages birth through eight. (SFCC)

ECED 226 – Curriculum Development (5 cr)

This course focuses on the past, present and future philosophies and theories used in the planning, implementation and evaluation of effective curriculum strategies and approaches. Fostering the growth and development of young children in the areas of cognitive, physical/motor, social, emotional and creativity are addressed. Forty-four hours of field experience are required. (SFCC)

ECED 230 – Learning Environments (5 cr)

Students analyze and evaluate early childhood environments based on an overview of the theories and philosophies of culturally relevant, anti-bias (CRAB) principles and developmentally appropriate practices (DAP). How the past guides the future in relationship to the role of children's play, assessments and literacy development in the learning environment is explored. (SFCC)

ECED 254 – Dynamics of Family Relationships (5 cr)

The impact of historical, current and future systems theory within which a child and his/her family operates is analyzed. Building an understanding of the philosophical and cultural context regarding children and families is the foundation used to identify ways to support healthy dynamics and to explore solutions to challenges families face. (SFCC)

ECED 260 – Child Care Administration (5 cr)

Childcare philosophy, policies, licensing, organization, personnel administration, supervision and the decision-making process, curriculum planning and evaluation, community resources and problems in operating a child care home or center will be introduced. Specific topics such as licensing regulation, hiring practices, forms, bookkeeping, in-service training, contracts, formative evaluations, community resources and alternative solutions to day-to-day problems may be explored. (SFCC)

ECED 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

ECED 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

ECED 270 – School-age Creative Activities (5 cr)

This course focuses on the planning, implementation and evaluation of effective strategies that address all areas of development for school-age children. These include: Assessing the appropriateness of school-age environment, scheduling and demonstrating learning activities in the college classroom and in an approved field site. Forty-four hours of field experience are required. (SFCC)

ECED 280 – School-age Guidance (5 cr)

This course focuses on developmentally appropriate child guidance strategies for youth, school-age through adolescence. It addresses the role of the caregiver interactions, the child's environment and guidance theories in order to analyze, plan and implement appropriate strategies in an approved field site. Forty-four hours of field experience are required. (SFCC)

ECED 281 – Capstone Practicum (5 cr)

As a capstone experience based on Washington State Skill Standards for Early Childhood Education Lead Teachers, students assume responsibility for assessing, planning, preparing and facilitating a developmentally appropriate learning environment for young children. They document their abilities through videotaping, prepared visuals and an information packet that are used in an oral presentation to a committee of early childhood and college professionals. One hundred and thirty-three hours of field experience are required. (SFCC)

ECED 282 – Practicum I (5 cr)

This course focuses on the documentation of children's growth and development through a portfolio project. One hundred and thirty-three hours of field experience are required. Prerequisite: ECED 102. (SFCC)

ECED 283 – Practicum II (5 cr)

This practicum course is designed to be a synthesizing experience where a student puts theory into practice. It is a continuation of skill building developed in previous practice. Students examine all of the skills/competencies of the professional teacher and develop documentation of his/her own competencies. One hundred and thirty-three hours of field experience are required. Prerequisite: ECED 102. (SFCC)

ECED 290 – School-age Development (5 cr)

A survey of historical and current philosophies along with theories of growth and development in physical/motor, creative, social, emotional and cognitive areas are examined for youth from middle childhood through adolescence. (SFCC)

ECHOCARDIOGRAPHY**ECHO 100 – Introduction to Echo and Vascular (2 cr)**

Introduction to the field of Echocardiography and Vascular Technology with emphasis on the role of these career pathways. Stresses the importance of professionalism, ethical behavior, and communications. Career opportunities, credentialing, program and health science student handbooks will be reviewed. Prerequisite: Admission to program and concurrent enrollment in ECHO 112, 125. (SCC)

ECHO 112 – Vascular Fundamentals (4 cr)

This course is an introduction to basic vascular anatomy of the lower and upper extremities, abdomen, visceral organs and cerebral vasculature with emphasis on the physiology of these systems. An introduction to the concepts essential for the performance and interpretation of vascular exams is also included. Laboratory experience is required. Prerequisite: Admission to program and concurrent enrollment in ECHO 100, 125. (SCC)

ECHO 122 – Vascular Procedures I (4 cr)

This course introduces students to the basic vascular procedures used to assess the lower and upper extremities, abdomen, visceral organs and cerebral vasculature with emphasis on the ultrasonic examinations of these systems. Instrumentation commonly used in the vascular laboratory is also presented. Laboratory experiences are required. Prerequisite: Admission to program and concurrent enrollment in ECHO 135. (SCC)

ECHO 125 – Ultrasound Physics and Instrumentation I (5 cr)

This course emphasizes ultrasound physics, the physics of waves, sound transmission, attenuation, pulse wave principles, transducer and ultrasound systems operations. Prerequisite: Admission to program and concurrent enrollment in ECHO 100, 112. (SCC)

ECHO 131 – Core Concepts in Echo Vasc (2 cr)

The core concepts in cardiac and vascular imaging will be explored. Applications of blood flow and hemodynamic analysis using Doppler and imaging technologies. Review of current literature and standards documents will be conducted. Prerequisite: Admission to program and concurrent enrollment in ECHO 132, 133, 138. (SCC)

ECHO 132 – Vascular Procedures II (5 cr)

This course introduces students to the basic vascular physiology of the lower and upper extremities, abdomen, visceral organs and cerebral vasculature with emphasis on homeostasis and normal/abnormal physiology of these systems. Laboratory experiences will be optional. Prerequisite: Admission to program and concurrent enrollment in ECHO 131, 133, 138. (SCC)

ECHO 133 – Echo Fundamentals (5 cr)

Introduction to the basic principles and application of the Doppler and echocardiographic procedures. The anatomy, image assessment, hemodynamics and clinical applications of cardiac ultrasound are emphasized. Laboratory experiences are provided. Prerequisite: Admission to program and concurrent enrollment in ECHO 131, 132, 138. (SCC)

ECHO 135 – Ultrasound Physics and Instrumentation II (5 cr)

This course is a continuation of the concepts introduced in ECHO 125. Ultrasound physics emphasizes the Doppler techniques, artifacts, bio utilizing instrumentation to investigate the principles of Doppler techniques and artifacts. Prerequisite: Admission to program and concurrent enrollment in ECHO 122. (SCC)

ECHO 138 – Cardiovascular Physiology (4 cr)

This course is an advanced study of normal cardiovascular physiology presented in a series of physician lectures and lab demonstrations with applications in invasive and noninvasive cardiology. Prerequisite: BIOL& 241, 242. Admission to program and concurrent enrollment in ECHO 131, 132, 133. (SCC)

See program/course abbreviation key on page 143.

ECHO 141 – Data Collection and Presentation (3 cr)

Students explore applications in medicine and develop the ability to use the microprocessor for word processing database management and statistical analysis. Principles of statistics are reviewed and applied through database management. Prerequisite: Admission to program and concurrent enrollment in ECHO 142, 143. (SCC)

ECHO 142 – Echo Clinical Preparation (4 cr)

Students develop basic imaging skills by imaging normals within the SCC echocardiography laboratory. Clinical requirements are discussed and defined. The role and job description of the noninvasive cardiovascular technologist are evaluated. Prerequisite: Admission to program and concurrent enrollment in ECHO 141, 143. (SCC)

ECHO 143 – Echo Clinical I (6 cr)

Students spend four weeks in a clinical setting. Two weeks are spent in an echocardiography laboratory assisting staff in patient preparation; imaging time is provided when appropriate. Two weeks are spent in a noninvasive electrophysiology laboratory performing ECGs, exercise tolerance testing, Holter monitoring and pacemaker checks under the direction of a staff technologist. Weekly clinical seminars are conducted with SCC staff. A clinical consciousness is developed with emphasis on professionalism, clinical rapport, medical ethics and patient care. Prerequisite: Admission to program and concurrent enrollment in ECHO 141, 142. (SCC)

ECHO 251 – Echocardiography Clinical II (6 cr)

Students obtain hands-on experience in hospital and clinical environments. Development of clinical technique in the utilization of current echocardiographic instrumentation in the evaluation of acquired cardiovascular disease is emphasized. Students apply the principles of medical legal ethics and professionalism to the patient, physician and other members of the health team. Clinical case reports are required. Prerequisite: Admission to program and concurrent enrollment in ECHO 253. (SCC)

ECHO 253 – Echocardiography I (7 cr)

This course will utilize the fundamentals presented in the first year of noninvasive cardiovascular technology to evaluate acquired cardiovascular disease states. This course will emphasize the evaluation and interpretation of the Doppler and 2D Echo examinations. Prerequisite: Admission to program and concurrent enrollment in ECHO 251, 254. (SCC)

ECHO 254 – Technical Skills Echocardiography I (3 cr)

The student will develop basic skills in performing the Doppler Echo examination on student volunteers. All procedures are performed under the supervision of credentialed cardiac sonographers. Prerequisite: Admission to program and concurrent enrollment in ECHO 253. (SCC)

ECHO 261 – Echocardiography Clinical III (6 cr)

Students utilize the skills learned in NCT 251 and obtain advanced experience in hospital and clinical environments. Development of clinical technique in the utilization of current echocardiographic instrumentation in the evaluation of acquired cardiovascular disease is emphasized. Students apply the principles of medical legal ethics and professionalism to the patient, physician and other members of the health team. Clinical case reports are required. Prerequisite: Admission to program and concurrent enrollment in ECHO 263. (SCC)

ECHO 263 – Echocardiography II (7 cr)

A continued study of cardiac noninvasive diagnostics with emphasis on the new developments and specialty applications. This course includes the echocardiographic approach to congenital heart disease. Physician lectures are utilized. Students will present registry review topics. Statistics and research methods are utilized. Prerequisite: Admission to program and concurrent enrollment in ECHO 261. (SCC)

ECHO 264 – Technical Skills Echo II (3 cr)

A continued study of cardiac noninvasive diagnostics with emphasis on the new developments and specialty applications. Laboratory experiences are provided in a clinical simulation format to develop the essential skills in the performance of the Doppler Echo imaging techniques. This course integrates the complete echocardiographic examination utilizing both fundamental and advanced techniques in a clinical simulation environment. Prerequisite: Admission to program and concurrent enrollment in ECHO 263. (SCC)

ECHO 273 – Echocardiography Clinical IV (14 cr)

Students practice clinical skills previously developed through active participation in a noninvasive cardiovascular laboratory. This full-time clinical internship is completed in an affiliated local or out-of-town hospital. Clinical skills necessary to the performance and evaluation of the M-mode, two-dimensional and Doppler Echocardiogram are emphasized. Written reports, review of current literature and attendance at conferences are required. Prerequisite: Admission to program. (SCC)

See program/course abbreviation key on page 143.

ECONOMICS**ECON 100 – Fundamentals of Economics (5 cr)**

A general introduction covering microeconomics (small sections of the economy), macroeconomics (economic system as a whole) and comparative economic systems. Students who plan to enroll in ECON& 201 or ECON& 202 should not enroll in ECON 100. (SCC, SFCC)

ECON& 201 – Micro Economics (5 cr)

Students are introduced to American economy with emphasis on prices, taxes, wages, production, farm problems, monopolies, labor, poverty and problems of the world economy. Prerequisite: SFCC only: ECON& 202 is recommended. (SCC, SFCC)

ECON& 202 – Macro Economics (5 cr)

The general introductory course covering the organization, operation and control of the American economy--problems of inflation, unemployment, taxation, public debt, money and banking, business cycles and economic growth. Capitalism compared with communism and socialism. (SCC, SFCC)

EDUCATION/EDUCATION PARAPROFESSIONAL, SPECIAL EDUCATION**EDUC 100 – Exploring Teaching (5 cr)**

This course focuses on personal qualities of teachers, the changing face of education, learning theories, teaching methods, classroom management and career planning. Observations in educational settings occur to identify differences in grade levels, child development, and teaching styles. In addition, practical, hands-on experiences are incorporated to complement academic training. (SCC, SFCC)

EDUC 120 – Survey of Core Competencies in Special Education (2 cr)

This course provides training of the 14 core competencies for the special education paraprofessional. It is designed to fill emerging needs of the classroom or to recognize documented prior learning in the workplace. (SFCC)

EDUC& 202 – Intro to Education (5 cr)

An orientation course designed to help the student--through an analysis of current educational issues--make a determination as to whether he or she should enter the field of teaching. (SCC, SFCC)

EDUC& 204 – Exceptional Child (5 cr)

This course introduces students to various categories of disabilities, legal and historical foundations for special education services, as well as opportunities to design and access educational resources for exceptional students from infancy to adulthood, within a community of collaboration and inclusion. (SCC, SFCC)

EDUC& 205 – Intro to Ed w/ Field Exp (5 cr)

This course explores the past, present and future of education in both theory and practice. For the students considering a career in education, this course examines historical, social, legal and philosophical issues as well as learning theory, teaching methods and current issues facing the profession. Students meet three hours per week in class and complete 44 hours of field experience in a school setting. (SFCC)

EDUC 206 – Tutor Training (1 cr)

This course prepares students to provide individual and small group tutoring. It includes the study of methods and materials for tutoring, interpersonal skills, and journaling. Prerequisite: SFCC Only: Permission of instructor. (SCC, SFCC)

EDUC 207 – Advanced Tutor Training (1 cr)

This course prepares students to provide advanced individual and small group tutoring. It includes the study of methods and materials for tutoring, interpersonal skills, and journaling. Prerequisite: EDUC 206 and permission of instructor. (SCC, SFCC)

EDUC 208 – Tutorial Practicum (1-2 cr)

In this course students provide individual and small group tutoring within a supervised work environment of those skills. This course may be repeated. Prerequisite: Concurrent enrollment in EDUC 206 or EDUC 207 and/or permission of instructor. (SCC, SFCC)

EDUC 252 – Social/Emotional Development (5 cr)

This course begins with an orientation to the discipline of social and personality development through research methodologies and classical theories. Early social and emotional development are explored as are topics of the development of self-achievement, gender issues, and aggression and antisocial conduct. We conclude by considering the impact of family as well as extrafamilial influences, such as TV, peers and schools. Theory and research are applied to real life. Prerequisite: EDUC& 204 or permission of instructor. (SFCC)

EDUC 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

EDUC 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

EDUC 270 – Introduction to Developmental Disabilities (5 cr)

This course addresses etiology of retardation, unresolved social questions, and problems related to the identification, education and professional/technical training of persons with developmental disabilities. Students are assigned to community agencies where they receive practical experience working with children or adults. Orientation includes current problems and trends in the field of developmental disabilities. Forty-four hours of field experience are required. Prerequisite: EDUC& 204 or permission of instructor. (SFCC)

EDUC 275 – Learning Disabilities (5 cr)

Basic difficulties encountered by children that lead to the label of “learning disabled” are addressed. Perceptual and neurological problems, reading difficulties and other etiological considerations are discussed. Practical classroom suggestions for treatment and remediation of learning disabilities are examined and outlined. Students are assigned to community agencies for practical experience working with children or adults who are experiencing learning problems. Forty-four hours of field experience are required. Prerequisite: EDUC& 204 or permission of instructor. (SFCC)

EDUC 280 – Behavior/Classroom Management (5 cr)

This course provides a forum in which to explore various behavioral prevention and intervention strategies used in the education of children. Through this course students have opportunities to conduct observations, to develop prevention and interventions for specific situations, and to discuss the ethical issues with regard to behavioral support and management. Prerequisite: EDUC& 204 or permission of instructor. (SFCC)

EDUC 281 – Education/Special Education Practicum I (5 cr)

Students are placed in an educational setting commensurate with their intended career goal. Key professional competencies are developed incorporating elements of teaching and learning. Integration of theory and practice is accomplished through practical engagement for 132 hours under close supervision. Prerequisite: EDUC& 204 or permission of instructor. (SFCC)

EDUC 282 – Education/Special Education Practicum II (5 cr)

Students in the education paraprofessional program are placed in a practicum setting, such as a public school or community service agency, where they have an opportunity to observe and work in settings in accordance with their career direction. Students work under the supervision of a qualified professional. As a culminating experience, students publicly present a capstone project of their own design. Prerequisite: EDUC 281. (SFCC)

ELECTRICAL MAINTENANCE AND AUTOMATION**ELMT 111 – Electrical Math (5 cr)**

Concepts of mathematics and their application to the electrical field are presented. Additional areas covered include Ohm’s Law, the metric system, algebraic formulas and trigonometry. (SCC)

ELMT 112 – Electrical Theory (5 cr)

Students study matter, atomic structure, electron theory, sources of electricity and magnetism. Prerequisite: ELMT 111 or MATH 096 or permission of instructor. (SCC)

ELMT 113 – Safety and Tools (4 cr)

A theoretical and practical study and its application to the electrical field is presented. This course provides general safety concepts to be applied when working with electric circuits, as well as job safety concepts. (SCC)

ELMT 114 – Materials and Fasteners (4 cr)

Students learn to identify electrical materials and their applications. In addition, students classify, grade and use fasteners, such as bolts, screws, and rivets. Proper torque values are explained. (SCC)

ELMT 122 – DC Circuits (1-5 cr)

Theory and shop application in Ohm’s Law, voltage, current, resistance, and power in series, parallel and series-parallel direct current circuits are presented in this course. Prerequisite: ELMT 112 or permission of instructor. (SCC)

ELMT 123 – AC Theory (5 cr)

Students analyze AC series, parallel, and combination circuits with resistance, inductance and capacitive elements using mathematics, measuring devices and other test equipment. Prerequisite: ELMT 122 or permission of instructor. (SCC)

ELMT 124 – Motor Maintenance (2-5 cr)

Students learn to perform the mechanical disassembly, assembly, and/or inspection of bearings, commutators, slip rings, brushes and insulation found in small and medium-sized motors. (SCC)

ELMT 131 – Solid State (2-5 cr)

This course introduces the study of theory and operation of solid state devices such as diodes, transistors, triacs and SCRs. Prerequisite: ELMT 123. (SCC)

ELMT 132 – DC Generators and Motors (1-5 cr)

Theory, design, application and testing of direct current (DC) motors and generators are presented in this course. The teardown and reassembly of DC generators also are included. Prerequisite: ELMT 122. (SCC)

ELMT 133 – AC Motors and Alternators (4 cr)

Theory, design, application and testing of alternating current (AC) motors; single- and three-phase generation of alternating current (single- and poly-phase); paralleling alternators and calculating load and power factor characteristics under various load conditions are presented. Prerequisite: ELMT 123 or permission of instructor. (SCC)

ELMT 134 – Introduction to AC Controls (5 cr)

This course introduces pilot devices, wiring diagrams and basic motor circuits. Areas of emphasis include overload, hand-off automatic and parallel stop-start controls. The wiring and troubleshooting of various motor control circuits also are introduced. (SCC)

ELMT 135 – DC Motor Controls (4 cr)

Students study DC motor control devices such as manual starting rheostats, reduced voltage starting, braking and speed control. The development of ladder diagrams to NFPA standards is addressed. Prerequisite: ELMT 132. (SCC)

ELMT 241 – AC Motor Controls (5 cr)

This course continues with the concepts introduced in ELMT 134 with emphasis on pilot devices, timing circuits, control voltage, ladder diagrams and sensors. Wiring and troubleshooting of various motor control circuits also are included. Prerequisite: ELMT 134. (SCC)

ELMT 242 – Advanced AC Controls (5 cr)

This course is a continuation of the concepts introduced in ELMT 134 and 241 with emphasis on forward and reversing, motor deceleration and braking, advanced timing circuits, and basic sequence control. The wiring and troubleshooting of various motor control circuits also are included. Prerequisite: ELMT 241 or permission of instructor. (SCC)

ELMT 243 – Introduction to Programmable Controllers (4 cr)

This course is an introduction to programmable controllers, hardware, programming fundamentals, numbering systems, memory organization and peripheral devices. Prerequisite: ELMT 134 or permission of instructor. (SCC)

ELMT 244 – Solid State Motor Controls (4 cr)

This course includes the theory of operation, testing and programming of solid-state starters, and DC and AC variable frequency drives. Students use test equipment and manuals including digital volt meters and oscilloscopes. Prerequisite: ELMT 131, 134 or permission of instructor. (SCC)

ELMT 251 – National Electric Code (4 cr)

The National Electrical Code and its application to the safe installation of electrical conductors and equipment is explained in this course. (SCC)

ELMT 252 – Transformers and Industrial Lighting (5 cr)

This course is a comprehensive study of the theory and operation of transformers and industrial lighting. The functions of various types of transformers and the maintenance and repair of industrial lighting systems are emphasized. Students perform the actual hookup and testing of basic single-phase and three-phase transformer connections, observe and demonstrate proper safety and maintenance techniques, and develop service wiring skills. Prerequisite: ELMT 123 or permission of instructor. (SCC)

ELMT 253 – National Electric Code - Article 430 (1-5 cr)

This course offers an in-depth study of Article 430 of the National Electrical Code and its application to motors, motor circuits and controllers. (SCC)

ELMT 254 – Programmable Controller Applications (5 cr)

Practical experience in programming circuits using relay type instructions, timers, counters, data manipulation, arithmetic functions and other advanced techniques is offered in this class. Prerequisite: ELMT 244 or permission of instructor. (SCC)

ELMT 262 – Raceways (1-5 cr)

This course provides practical shop experience in the bending of conduit using hand, mechanical and hydraulic benders. Prerequisite: ELMT 111 or MATH 096 or permission of instructor. (SCC)

ELMT 263 – Wiring Techniques (4 cr)

Students are offered actual lab experience in project layout, support and installation of electrical systems. (SCC)

ELMT 264 – Special Circuits (5 cr)

This course offers practical applications on the development of complex controls in machine sequence or process systems. (SCC)

ELMT 265 – Advanced Programmable Controllers (1-5 cr)

This course is an introduction to the concepts of analog input/output devices, motion control, vision basics, networking programmable controllers, software installation and graphical man/machine interfaces. Practical experience applying this information to motor control is emphasized. Prerequisite: ELMT 254 or permission of instructor. (SCC)

ELMT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

ELMT 267 – Cooperative Education Work Experience (1-16 cr)

For course description, see Cooperative Education. (SCC)

ELMT 268 – Programmable Controller Integration (1-5 cr)

This course provides practical experience in industrial process control applications and hardware, plant floor communication networks, and operator interface devices. Prerequisite: ELMT 265. (SCC)

ELMT 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

ELECTRONICS ENGINEERING TECHNICIAN**ELECT 100 – Electronics Fundamentals (4 cr)**

Students are introduced to DC/AC circuits including resistors and resistive circuits, series and parallel circuits, DMMs and oscilloscopes. Prerequisite: Concurrently enrolled in ELECT 101. (SCC)

ELECT 101 – Satellite, Security, and Entertainment Systems (3 cr)

Students are introduced to basic satellite TV, security/fire, and entertainment systems equipment. System operation and interface will be discussed. Prerequisite: Concurrent enrollment in ELECT 100. (SCC)

ELECT 102 – Cable and Satellite TV Installation (3 cr)

Students learn to install cable and satellite TV systems. Prerequisite: ELECT 101 or permission of instructor. (SCC)

ELECT 103 – Security and Fire Systems Installation (3 cr)

Students learn to install security and fire alarm systems. Prerequisite: ELECT 101 or instructor permission. (SCC)

ELECT 104 – Home Entertainment Systems Installation (3 cr)

Students learn to install home entertainment systems. Computer, home theater, and sound systems will be covered. Prerequisite: ELECT 101 or instructor permission. (SCC)

ELECT 105 – Home Technology Systems Integration (3 cr)

Students will integrate the operation of home/office technologies. Systems such as home entertainment, satellite and cable, and security will be integrated. Prerequisite: ELECT 102, 103, 104 or instructor permission. (SCC)

ELECT 110 – Computer Fundamentals for Electronics (2 cr)

Students are introduced to the basics of the Microsoft Disk Operating System (DOS), word processing, keyboarding skills and various applications for the electronics industry. Prerequisite: Concurrent enrollment in ELECT 111, 112, 113. (SCC)

ELECT 111 – DC Circuits (7 cr)

Students are introduced to DC circuits including resistors and resistive circuits, series and parallel circuits, meter movements, ammeters, voltmeters, VOMs, DMMs and Wheatstone Bridges. (SCC)

ELECT 112 – DC Circuit Lab (5 cr)

This course presents DC circuits lab applications including resistors and resistive circuits, series and parallel circuits, meter movements, ammeters, voltmeters, VOM's, DMM's and Wheatstone Bridges. (SCC)

ELECT 113 – DC/AC Circuit Math (5 cr)

Students review mathematics as it applies to DC/AC circuits and utilize the electronic calculator as a problem solving tool. The use of algebraic equations and trigonometric functions to solve circuit problems are emphasized. (SCC)

ELECT 121 – AC Circuits (9 cr)

This course addresses theory related to AC circuits, capacitors, coils, solid-state diodes, transformers, oscilloscopes, audio generators, and component checkers. Prerequisite: ELECT 111, 112, 113 or department chair approval. (SCC)

ELECT 122 – AC Circuit Lab (5 cr)

This course introduces AC circuit lab applications including capacitors, coils, solid-state diodes, transformers, oscilloscopes, audio generators and component checkers. Prerequisite: ELECT 111, 112, 113 or department chair approval and concurrent enrollment in ELECT 121 or department chair approval. (SCC)

ELECT 123 – Advanced DC/AC Circuit Math (5 cr)

This course is the study and application of algebraic exponents, phasor algebra and logarithms for DC/AC circuits. Prerequisite: ELECT 111, 112, 113 or department approval. (SCC)

ELECT 134 – Printed Circuit Board/Surface Mount Technology Design and Repair (1 cr)

This course introduces the student to computer aided printed circuit board design (MultiSim and Ultiboard) and installation and removal techniques of surface mount technology. (SCC)

ELECT 136 – Solid State Devices/Circuits (5 cr)

Students are introduced to semiconductor devices, their operation and characteristics. (i.e., transistors, diodes, and special devices). Basic power supply circuits also are covered. Prerequisite: ELECT 121, 122, 123 or department chair approval. (SCC)

ELECT 137 – Solid State Devices/Circuits Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 136. Prerequisite: ELECT 121, 122, 123 or department chair approval and concurrent enrollment in ELECT 136 or department chair approval. (SCC)

ELECT 138 – Linear Devices/Circuits (5 cr)

Students are introduced to the characteristics and operation of amplifiers, linear circuits, active filter circuits and specialized circuits such as comparator, integrator and differentiator amplifiers. Prerequisite: ELECT 121, 122, 123 or department chair approval. (SCC)

ELECT 139 – Linear Devices/Circuits Lab (4 cr)

Students experience a hands-on approach to the characteristics and operation of operational amplifiers, linear circuits, active filter circuits and specialized circuits such as comparator, integrator and differentiator amplifiers. Prerequisite: ELECT 121, 122, 123 or department chair approval and concurrent enrollment in ELECT 138 or department chair approval. (SCC)

ELECT 211 – Digital Concepts (5 cr)

Students are introduced to the basic concepts of numbering systems (i.e., binary, octal and hex), digital devices such as gates, counters and flip-flops. An introduction to microprocessors, memory circuits, and microprocessor applications will be covered. General hardware structure, addressing and ASIC's will also be covered. Prerequisite: Concurrent enrollment in ELECT 212 or department chair approval. (SCC)

ELECT 212 – Digital Concepts Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 211. Prerequisite: Concurrent enrollment in ELECT 211. (SCC)

ELECT 213 – Basic Computer Systems (5 cr)

Students are introduced to basic computer systems; the motherboard including Bus architecture, BIOS, storage devices, audio/video devices, printing devices, computer power supplies and other I/O devices. Basic peer-to-peer networks are also covered. Prerequisite: ELECT 136, 137, 138, 139 or department chair approval. (SCC)

ELECT 214 – Basic Computer Systems Lab (4 cr)

The course gives the student a hands-on approach to basic computer systems; the motherboard including Bus architecture, BIOS, storage devices, audio/video devices, printing devices, computer power supplies and other I/O devices. Basic peer-to-peer networks are also covered. System maintenance and troubleshooting is emphasized. Prerequisite: ELECT 136, 137, 138, 139 or department chair approval and concurrent enrollment in ELECT 213 or department chair approval. (SCC)

ELECT 221 – Communication Fundamentals (5 cr)

Students are introduced to the basic concepts of communications systems including RF, amplitude modulation (AM), frequency/phase modulation, basic transmitters and receivers. Prerequisite: ELECT 211, 212, 213, 214 or department chair approval. (SCC)

ELECT 222 – Communication Fundamentals Lab (4 cr)

Students experience a hands-on approach to the basic concepts of communications systems including RF, amplitude modulation (AM), frequency/phase modulation, basic transmitters and receivers. Prerequisite: ELECT 211, 212, 213, 214 or department chair approval and concurrent enrollment in ELECT 221 or department chair approval. (SCC)

ELECT 223 – Advanced Computer Systems (5 cr)

This advanced computer course will cover computer operating systems, installation and hardware setup, specialized computer interfacing, digital communications, data transmission, data cabling and computer diagnostics. Prerequisite: ELECT 213, 214 or department chair approval. (SCC)

ELECT 224 – Advanced Computer Systems Lab (4 cr)

Students experience a hands-on approach to computer operating systems, installation and hardware setup, specialized computer interfacing, digital communications, data transmission, data cabling and computer diagnostics. Prerequisite: ELECT 213, 214 or department chair approval and concurrent enrollment in ELECT 223 or department chair approval. (SCC)

ELECT 231 – Advanced Communications (5 cr)

This course covers transmission lines, radio wave propagation, antennas and fiber optics. The utilization of transmission and receiver techniques is emphasized. Prerequisite: ELECT 221, 222 or department chair approval. (SCC)

ELECT 232 – Advanced Communications Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 231. Prerequisite: ELECT 221, 222 or department chair approval and concurrent enrollment in ELECT 231 or department chair approval. (SCC)

ELECT 233 – Systems Troubleshooting (5 cr)

This course covers troubleshooting techniques including system and block concepts, analysis methods, quick failure identification, system checkout procedures and customer/client relations. Prerequisite: ELECT 221, 222, 223, 224 or department chair approval and concurrent enrollment in ELECT 234. (SCC)

ELECT 234 – Systems Troubleshooting Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 233. Prerequisite: ELECT 221, 222, 223, 224 or department chair approval and concurrent enrollment in ELECT 233 or department chair approval. (SCC)

ELECT 245 – Principles of Avionics (5 cr)

Students are introduced to avionics communication, navigation, and flight control systems. Operation and testing using specialized equipment is emphasized. FAA regulations: Parts 43 and 91 as well as FCC requirements are also covered. Prerequisite: Instructor approval and concurrent enrollment in ELECT 246. (SCC)

ELECT 246 – Principles of Avionics Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 245. Operation and testing using specialized equipment is emphasized. Prerequisite: Instructor approval and concurrent enrollment in ELECT 245. (SCC)

ELECT 247 – Avionics Systems (5 cr)

This course covers advanced navigation, flight control, interfacing and troubleshooting systems. FAA required certification testing of transponders, altitude encoders, pitot/static systems and altimeters is also covered. Prerequisite: Instructor permission and concurrent enrollment in ELECT 248. (SCC)

ELECT 248 – Avionics Systems Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to the subjects covered in ELECT 247. Special emphasis is given to FAA required certification testing of transponders, altitude encoders, pitot/static systems and altimeters. Prerequisite: Instructor permission and concurrent enrollment in ELECT 247. (SCC)

ELECT 250 – Electronics Independent Study (22 cr)

Faculty supervise this independent study to allow students to work in a number of areas in electronics such as digital, instrumentation, communications, etc. Prerequisite: Permission of instructor. (SCC)

ELECT 255 – Digital Data Communications (5 cr)

This course covers digital modulation, multiplexing, digital signal processing, systems and data protocols, network operation, troubleshooting techniques, and security policies. Prerequisite: ELECT 231, 232 or department chair approval and concurrent enrollment in ELECT 256 or department chair approval. (SCC)

ELECT 256 – Digital Data Communications Lab (4 cr)

This course allows students to experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 255. Prerequisite: ELECT 231, 232 or department chair approval and concurrent enrollment in ELECT 255 or department chair approval. (SCC)

ELECT 257 – Wireless Communications (5 cr)

This course covers spread spectrum technologies, troubleshooting wireless local area networks, antenna options, security, system design, and installation standards and regulations. Prerequisite: ELECT 231, 232 or department chair approval and concurrent enrollment in ELECT 258 or department chair approval. (SCC)

ELECT 258 – Wireless Communications Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 257. Prerequisite: ELECT 231, 232 or department chair approval and concurrent enrollment in ELECT 257 or department chair approval. (SCC)

ELECT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

ELECT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

ELECT 278 – RF Communications (5 cr)

This course covers FCC rules and regulations; radiation power exposure and safety; and television systems including transmitters, translators and receivers. Prerequisite: ELECT 231, 232 or department chair approval and concurrent enrollment in ELECT 279 or department chair approval. (SCC)

ELECT 279 – RF Communications Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 278. Prerequisite: ELECT 231, 232 or department chair approval and concurrent enrollment in ELECT 278. (SCC)

ELECT 294 – Microwave, CATV, and Satellite Communications (5 cr)

This course covers point-to-point microwave transmitters, receivers, antennas and satellite systems including downlink calculations and evaluations. Prerequisite: ELECT 231, 232 or department chair approval and concurrent enrollment in ELECT 295 or department chair approval. (SCC)

ELECT 295 – Microwave, CATV, and Satellite Communications Lab (4 cr)

Students experience a hands-on approach to theories by performing lab assignments pertaining to subjects covered in ELECT 294. Prerequisite: ELECT 231, 232 or department chair approval and concurrent enrollment in ELECT 294 or department chair approval. (SCC)

EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC)**LIFE 128 – Emergency Medical Technician-Basic Lecture (9 cr)**

This course is for students actively involved in providing pre-hospital care and is not intended as a first aid course to the general public. Students learn to recognize the nature and seriousness of a patient's injury, assess the need for emergency medical care; and administer medical care that may include lifting, moving and positioning the patient to minimize discomfort and prevent further injury safely and effectively. The course meets the NHTSA, Washington State and National Registry for EMT requirements for certification as an EMT-Basic. Prerequisite: 18 years of age, high school diploma or GED certificate, AHA Healthcare Provider or ARC CPR for the Professional Rescuer, and the physical strength to perform normal functions of an EMT-Basic. Students are not eligible for certification until they become a functioning member of a state recognized affiliated EMS providing agency. (SCC)

LIFE 129 – Emergency Medical Technician-Basic (3.1 cr)

This course is for students actively involved in providing pre-hospital care and is not intended as a first aid course to the general public. Students learn to recognize the nature and seriousness of a patient's injury, assess the need for emergency medical care; and administer medical care that may include lifting, moving and positioning the patient to minimize discomfort and prevent further injury safely and effectively. The course meets the NHTSA, Washington State and National Registry for EMT requirements for certification as an EMT-Basic. Prerequisite: 18 years of age, high school diploma or GED certificate, AHA Healthcare Provider or ARC CPR for the Professional Rescuer, and the physical strength to perform normal functions of an EMT-Basic. Students are not eligible for certification until they become a functioning member of a state recognized affiliated EMS providing agency. (SCC)

LIFE 130 – Intermediate Life Support (9 cr)

This course offers intermediate level training for emergency life support. Didactic sessions, skill development, and clinical experience focusing on shock and fluid therapy and respiratory support. Prerequisite: Must meet program prerequisites. (SCC)

LIFE 131 – Advanced Life Support I (14 cr)

This is the first in a series of four courses to prepare students for certification as EMT-P. Students are presented with a solid base of education regarding the paramedic's rules and responsibilities, and the medical/legal issues that apply to the profession. Patient assessments, proper communication and documentation techniques, and the application of various types of intravenous access are introduced. Issues of hemorrhage and shock including numerous types and forms of trauma such as musculoskeletal trauma, soft tissue injuries, burns, head and face trauma, thoracic, abdominal and spinal trauma are emphasized. Prerequisite: HED 108, 109 or BIOL& 241, 242 and current Emergency Medical Technician Certification. (SCC)

See program/course abbreviation key on page 143.

LIFE 132 — Advanced Life Support II (15 cr)

This is the second in a series of four courses to prepare students for certification as EMT-P. Students are introduced to pharmacology, its applications and the role it plays in the treatment of injured patients. A brief introduction to the field of microbiology and how it affects patients is presented as well as the treatment and final outcome. Students gain an understanding of the measures necessary for the prevention of disease transmission. Extensive coverage of the cardiovascular system, its disease process and the treatment is emphasized. Interpretation of cardiac rhythms, both in the 3 and 12 lead modes, identification of rhythms that pose a threat to life and how to properly care for patients with cardiac illnesses are studied. Prerequisite: LIFE 131. (SCC)

LIFE 133 — Advanced Life Support III (18 cr)

This is the third in a series of four courses to prepare students for certification as EMT-P. Medical problems that paramedics may encounter are covered including neurological problems, medical emergencies, environmental injuries, psychiatric emergencies, etc. Special emergencies such as treatment of the neonatal newborn, pediatric and geriatric patients also are covered. Prerequisite: LIFE 132. (SCC)

LIFE 134 — Advanced Life Support IV (21 cr)

This is the final in a series of four courses to prepare students for certification as EMT-P. It incorporates all of the previous courses into clinical experience for students in the pre-hospital environment. Students spend time with emergency medical service providers practicing and refining the skills acquired during the earlier training classes. Additional education in related fields including air-operations, medical incident command, rescue awareness, crime scenes and hazardous materials is emphasized. Prerequisite: LIFE 133. (SCC)

ENGINEERING**ENGR 103 — Engineering Graphics/CAD (5 cr)**

This is a basic graphics course for engineers using manual and computer-aided (CAD) methods. The course emphasizes visualization, spatial relations and design. Multiview working drawings and 3-D pictorial drawings are combined into a design project at course conclusion. Descriptive geometry principles are studied for graphical problem solving, as well as CAD solids modeling. Prerequisite: MATH 099. (SFCC)

ENGR 110 — Engineering Problems and Orientation (3 cr)

This course is an introduction to the world of engineering. It also is an orientation for students who have an interest in engineering but know little about the various disciplines or functional areas. Simple application problems in mechanics, thermal and electrical sciences, and fluids are examined to give students an appreciation for these subjects. There also is an introduction to the personal computer in engineering work. Prerequisite: MATH 099. (SFCC)

ENGR 111 — Engineering Projects (2 cr)

This is a project course that complements ENGR 110. Students work in teams to design and/or build an object. Robots, 3D CAD and creative devices can be used. Prerequisite: ENGR 110 or concurrent enrollment in ENGR 110. (SFCC)

ENGR 190 — Electronic Logic (5 cr)

The operation and use of linear and digital circuits normally used in and with micro- and minicomputers. Use of system and logic design; build and test typical circuits using TTL logic. Prerequisite: Basic electronics courses with permission of instructor. (SFCC)

ENGR 191 — Microprocessor Architecture (5 cr)

An intensive laboratory course in the internal operation of microcomputers and their interfaces. Starting from an understanding of digital and analog electronics, the course covers all important computer circuits, timing and protocols. Students interface peripherals to a computer and build a process control system. Prerequisite: ENGR 190. (SFCC)

ENGR 201 — Statics (5 cr)

A fundamental course in engineering mechanics for particles and rigid bodies in equilibrium. Problems in two and three dimensions using both scalar and vector algebra methods. Prerequisite: MATH& 152 and concurrent enrollment in PHYS 201. (SFCC)

ENGR 202 — Dynamics (5 cr)

Fundamental course in engineering mechanics for particles and rigid bodies experiencing acceleration. Students study unbalanced forces and torques acting on bodies, and the resulting motion using scalar and vector algebraic methods. Prerequisite: ENGR 201. (SFCC)

ENGR 203 — Mechanics of Materials (5 cr)

The study of internal stresses, strains, and deformations of structural members and parts resulting from externally applied loads. Covers design criteria for beams, columns, pressure vessels, bolts, shafts, etc. Prerequisite: ENGR 201. (SFCC)

ENGR 210 — Electric Circuit Theory (5 cr)

A first course in elementary linear circuit analysis for the electrical sciences designed for electrical engineers. Circuit analysis laws, theorems and reduction techniques are studied for first- and second-order circuits. These circuits contain dependent sources and multiple configurations of capacitors and inductors. A weekly lab complements the class lectures. Prerequisite: MATH& 153, 274 (may be taken concurrently), PHYS 202. (SFCC)

ENGLISH**ENGL 050 — ESL Writing (5 cr)**

This course is for ESL students at the low-intermediate level whose writing skills require additional preparation before entering ENGL 061 or ENGL 071. Emphasis is on writing compound and complex sentences. The course provides strategies for developing vocabulary and applying the rules of grammar and punctuation to English sentences. (SFCC)

ENGL 051 — Basic Reading Skills (3 cr)

Small group or individual help in the basic skills of reading. Non-transferable. (SCC)

ENGL 052 — ESL Reading (5 cr)

This course is for ESL students at the low-intermediate level whose reading skills require additional practice before entering ENGL 062 or ENGL 072. Students work on vocabulary development and improving reading comprehension. (SFCC)

ENGL 053 — ESL Listening and Speaking (5 cr)

This course is for ESL students at the low-intermediate level whose reading skills require additional practice before entering ENGL 062 or ENGL 072. Students work on vocabulary development and improving reading comprehension. (SFCC)

ENGL 061 — ESL Writing (5 cr)

This course is for ESL students at the intermediate level whose writing skills require additional preparation before entering ENGL 071 or ENGL 081. It provides strategies for developing vocabulary, applying the rule of grammar and punctuation, writing compound and complex sentences, and composing basic paragraphs. (SFCC)

ENGL 062 — ESL Reading (5 cr)

This course is for ESL students at the intermediate level whose reading skills require additional practice before entering ENGL 072 or ENGL 082. Students work on vocabulary development and improving reading fluency and comprehension. (SFCC)

ENGL 063 — ESL Listening and Speaking (5 cr)

This course is for ESL students at the intermediate level whose listening and speaking skills require additional practice before entering ENGL 073 or ENGL 083. Students work on listening, speaking and interaction skills necessary for communicating in an academic environment. Emphasis is on experiential learning. Students are given opportunities to develop language competence by participating in various classroom, college and community activities. (SFCC)

ENGL 071 — ESL Writing (5 cr)

This course prepares ESL (English as a second language) students for college-level writing tasks. The course helps prepare students to write a variety of coherent, well-developed paragraphs and increases the student's fluency and independence in writing. Prerequisite: TOEFL score of 440 or demonstration of the same by written essay. (SFCC)

ENGL 072 — ESL Reading (5 cr)

This course prepares ESL (English as a second language) students for college-level reading and study tasks. Students concentrate both on learning and applying the skills needed for comprehending various types of required college reading and learn the study strategies to prepare them for college success. Prerequisite: TOEFL score of 440 or demonstration of the same by written essay. (SFCC)

ENGL 073 — ESL Listening and Speaking (5 cr)

This course prepares ESL (English as a second language) students with the oral communication skills and listening comprehension strategies needed both for communicating with and understanding others in an academic environment. Prerequisite: TOEFL score of 440 or demonstration of the same by written essay. (SFCC)

ENGL 081 — ESL Writing (5 cr)

This course is designed for the ESL (English as a second language) student whose writing skills require additional preparation before entering ENGL 099 or ENGL& 101. (SCC, SFCC)

ENGL 082 — Reading and Study Skills for the ENS (English for the Non-native Speaker) (5 cr)

This course is designed to increase the confidence and success of the non-native speaker of English in college-level courses. The course focuses on developing reading, study and testing strategies. (SCC, SFCC)

ENGL 083 — ESL Conversation (5 cr)

This course is designed to increase the ESL (English as a second language) student's ability to understand and use both written and spoken American English at the college level. (SCC, SFCC)

ENGL 087 — Spelling Skills Development (3 cr)

A course designed for students interested in developing and strengthening their spelling skills. Students will learn mnemonic devices, homonyms and spelling rules. Regular quizzes will be given. (SFCC)

ENGL 090 — Reading and Study Skills (2 cr)

Designed for the slightly below average to better readers to prepare for academic work in the trade and industrial areas. (SCC)

ENGL 091 — Writing Workshop (2 cr)

Designed to further the technical writing skills of students enrolled in trade and industrial programs. (SCC)

ENGL 092 — Communication for International Students (1-5 cr)

A class designed to improve the basic language skills (reading, writing, study skills, pronunciation, conversation) of international students who plan to enroll in college level vocational or academic courses. The curriculum is designed to help those students improve their communication skills so that they can successfully participate in more advanced courses. Students who need additional instruction may have follow-through programs designed for them in the Learning Center. (SCC)

ENGL 093 — Individualized Study Skills (1-5 cr)

This course sharpens students' skills in textbook study, note taking and time management as well as in memory improvement and general classroom survival skills. It may not be taken simultaneously with ENGL 094 or ENGL 151. Students can enroll in the same lab course no more than three quarters regardless of the number of hours for which they enroll. Grading option: Pass/fail. (SCC, SFCC)

ENGL 094 — Study Skills (5 cr)

This course sharpens students' skills in textbook study, note taking and time management as well as in memory improvement, reading comprehension and classroom survival skills. Students also may be introduced to methods which increase reading rates and develop vocabulary. (SCC, SFCC)

ENGL 095 — Reading Lab (1-5 cr)

This course improves students' reading skills through programs that include vocabulary, rate increase, comprehension or study skills. Students can enroll in the same lab course no more than three quarters regardless of the number of hours for which they enroll. Grading option: Pass/fail. (SCC, SFCC)

ENGL 096 — Reading Improvement (3-5 cr)

This course is for the average and better reader to work on these skills: Reading comprehension, summary writing, rapid reading, skimming and scanning. Prerequisite: Score at or above the 25 percentile on the assessment reading test. (SCC, SFCC)

ENGL 097 — Basic Writing: From Sentence to Paragraph (5 cr)

This course provides students with the basic elements of grammar and punctuation as they relate to writing complete and accurately punctuated English sentences. The course attends to grammar, ranging from prepositional phrases to independent and dependent clauses to the recognition and proper punctuation of sentence elements. Formal writing tasks include recognition of boundaries and composing basic paragraphs. (SCC, SFCC)

ENGL 098 — Writing Lab (1-5 cr)

This course offers students individually tailored composition skills through work on paragraphs and essays, sentence structure and mechanics. It is offered in either lecture or lab mode. In the lab mode, the content moves from the paragraph to the essay with emphasis on structure and mechanics, and students earn 5 credits. Students may enroll in the same lab course no more than three quarters regardless of the number of hours for which they enroll. Grading option: Pass/fail. (SCC, SFCC)

ENGL 099 — Improvement of Writing (5 cr)

Students review paragraph development and write several essays. Principles governing sentence structure and punctuation are emphasized. This course may be taken twice for credit. Prerequisite: 2.0 grade in ENGL 097, appropriate placement score, or permission of instructor. (SCC, SFCC)

ENGL 100 — Composition Preparation (5 cr)

This course focuses on remediation of expository skills, reading and incorporating those readings into compositions. This course serves as a "bridge" between English 099 and 101. Prerequisite: ASSET scores or instructor referral. (SCC)

ENGL& 101 — English Composition I (5 cr)

This course develops and sharpens the basic principles of writing college-level essays. Students work on a series of essays to improve their ability to write clear, detailed prose and to use texts to support their claims. Competence in mechanics and standard English usage is assumed of all students taking ENGL& 101. Prerequisite: Either completion of ENGL 099 with a P or a 2.0 or higher, concurrent enrollment in ENGL& 101, a minimum ASSET Reading and Writing Score of 41, a minimum Compass Writing Score of 73, or a minimum Compass Reading Score of 81. (SCC, SFCC)

ENGL& 102 — Composition II (5 cr)

This course teaches students research skills by emphasizing the development of critical reading habits, investigative proficiency, and the writing of expository and persuasive prose including documented research essays. Students work to understand academic audiences, increase their clarity and objectivity, and adhere to standard formats. Prerequisite: ENGL& 101 with a 2.0 or better. (SCC, SFCC)

ENGL 104 — Grammar and Punctuation (3 cr)

Students review the traditional principles of grammar and punctuation and apply these principles. Prerequisite: Concurrent enrollment in ENGL& 101 or permission of instructor. (SCC, SFCC)

ENGL 105 — Pro/Tech: Basic Writing (5 cr)

This course develops and sharpens technical writing skills for competency in the professional arena. Students review basic components of clear, grammatically correct sentences, unified paragraphs and organized lists. They also develop strategies for information design. Assignment formats include writing for web pages, summaries, proposals, definitions, descriptions, promotional copy, resumes and professional correspondence. Students are expected to approach writing as a process: Drafting, revising, editing and proofreading. Whenever possible, assignments address topics pertinent to their technical fields. Prerequisite: ENGL 099 or permission of instructor. (SFCC)

ENGL 110 — Term Paper Workshop (2 cr)

Formulation, organization and presentation of a term or research paper; major mechanical aspects of paper development, including source guidelines, location and survey of materials, source citations, outlining and final format preparation. Prerequisite: Concurrent enrollment in a course other than ENGL& 102 and ENGL& 235. (SCC)

ENGL& 111 — Intro to Literature (5 cr)

Students read and discuss short stories, plays and poetry with an emphasis on better understanding and appreciation of literature. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL& 112 — Intro to Fiction (5 cr)

Students analyze, discuss and write about classic and contemporary fiction, both short stories and a novel. Emphasis is on perceiving the techniques writers use to create an aesthetic experience for readers. Although a historical approach is not used, appropriate background is presented to enrich students' experience of the works. Prerequisite: ENGL& 101 with a 2.0 or better or permission of instructor. SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL& 113 — Intro to Poetry (5 cr)

This course is a literary study of poetry which explores the themes, the craft and the history of the genre. Students analyze, discuss and write about a diverse selection of poems which offer a variety of experiences. Emphasis is on understanding the way poets manipulate language to create meaning. Prerequisite: ENGL& 101 with a 2.0 or better, or permission of instructor. SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL& 114 — Intro to Drama (5 cr)

This course is a literary study of dramatic literature, exploring the major themes, conventions and historical trends of drama from ancient Greece to the present. Students analyze, discuss and write about a diverse selection of plays which offer a variety of cultural experiences. Prerequisite: ENGL& 101 or permission of instructor. SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL 120 — Applied Technical Writing for Vocations (3-5 cr)

Presentation of advanced technical writing forms with written assignments selected by vocational faculty from a menu, including such topics as: Short forms (catalog searches, requisitions, memorandums, etc.); technical reports; job search exercises; the proper use of graphics; research skills; revision skills. Prerequisite: ENGL 189 with a 2.0 or better, or permission of English department chair. (SCC)

ENGL 150 – Academic Communication Skills for International Students (5 cr)

This advanced course is offered for students whose native languages are not English. Students learn and practice intensified reading and study strategies as well as other communication skills necessary for academic success. Prerequisite: Placement through assessment, permission of international student program adviser or permission of instructor. (SFCC)

ENGL 151 – College Reading and Study Skills (5 cr)

Students learn strategies to become independent learners and critical thinkers. Emphasis is on understanding how memory works and improving note taking, test taking, textbook reading, time management and vocabulary. The course cannot be taken simultaneously with ENGL 093 or ENGL 094. Prerequisite: Recommended placement score: COMPASS 80 or above, ASSET 41 or above. (SCC, SFCC)

ENGL 152 – Reading Rate Improvement (2 cr)

This course is for students who read at the college level, and aims to increase dramatically their reading speed on average-difficulty, college-level material without loss of comprehension. Students learn skimming, scanning and rapid reading techniques. Prerequisite: Students must score at college reading level on the COMPASS test or receive permission of the Communications Learning Center director or course instructor. (SCC, SFCC)

ENGL 153 – Vocabulary Development (5 cr)

The class will be a lecture/discussion class with regular assignments, tests and quizzes. Major topics covered include the history of the English language, basic vocabulary tools, language diversity and vocabulary development strategies. Emphasis is placed on the mastery of major affixes and roots in the language. (SCC)

ENGL 156 – Listening and Note-taking (1 cr)

Designed to be linked to a content area course, this course provides students the opportunity to develop listening skills and apply appropriate lecture note-taking strategies to help students understand and retain important content-area concepts. Memory principles are discussed and applied. Recommended COMPASS reading placement of 80 and above, ASSET score of 40 and above. This course cannot be taken simultaneously with ENGL 093 or ENGL 094. Credit will not be granted for both ENGL 151 and ENGL 156. Prerequisite: Recommended placement score of 80 or above on the COMPASS test. (SFCC)

ENGL 157 – Using Study Systems: Before, During, and After Reading (2 cr)

Designed to be linked to a content area course, this course examines effective before, during and after reading strategies for content-area course textbooks. Students will learn to develop and use a personal study system incorporating principles of time management. Recommended COMPASS reading placement of 80 and above, ASSET score of 40 and above. This course cannot be taken simultaneously with ENGL 093 or ENGL 094. Credit will not be granted for both ENGL 151 and ENGL 157. Prerequisite: Recommended placement score of 80 or above on the COMPASS test. (SFCC)

ENGL 158 – Test Preparation and Test-Taking (2 cr)

Designed to be linked to a content area course, this course examines effective before, during and after test-taking strategies for a specific content area. Students will learn, select and apply a variety of study aids. Principles of memory and time management will be applied to content-course test preparation. Recommended COMPASS reading placement of 80 and above, ASSET score of 40 and above. This course cannot be taken simultaneously with ENGL 093 or ENGL 094. Credit will not be granted for both ENGL 151 and ENGL 158. Prerequisite: Recommended placement score of 80 or above on the COMPASS test. (SFCC)

ENGL 188 – Introduction to Writing for Vocational Students (1-3 cr)

This course provides instruction in the fundamentals of writing (basic grammar, sentence structure, punctuation, spelling and organization). Students learn to write basic paragraphs including, but not limited to, process, description, cause and effect, and comparison and/or contrast. (SCC)

ENGL 189 – Writing for Vocational Students (1-3 cr)

Provides instruction in basic writing concepts, including sentence structure, paragraphs and longer papers. It also reviews fundamentals of grammar, punctuation and spelling. (SCC)

ENGL 195 – Special Topics in English for International Students (1-5 cr)

This advanced-level communications course is offered to students whose native languages are not English. The emphasis of each course is a particular communication topic: Writing, conversation and listening, pronunciation, study skills, and reading. Content and scope vary from quarter to quarter. The course may be repeated for credit with different topics. Prerequisite: International student program adviser or permission of instructor. (SFCC)

ENGL 208 – British Literature to 1800 (5 cr)

This survey covers British literature from Beowulf through the 18th century, emphasizing the major writers and their relationships to the significant literary traditions of their time. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL 209 – British Literature since 1800 (5 cr)

This survey focuses on the writing of Blake, Wordsworth, Coleridge, Keats, Byron, Shelley, Tennyson, Browning, Eliot, Yeats, Conrad, Lawrence, Joyce and selected contemporary writers. Instruction focuses on developing strategies for penetrating these writers by analyzing language, imagery, theme, plot, setting and character. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL& 220 – Intro to Shakespeare (5 cr)

Students read, analyze, interpret and evaluate Shakespeare's plays and sonnets. In addition, they learn about the historical, cultural and social milieu in which Shakespeare wrote his works. Students develop strategies for breaking Shakespeare's language barrier and learn to analyze plot, character, imagery and theme. Prerequisite: Minimum 2.0 in ENGL& 101. SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL& 235 – Technical Writing (5 cr)

Students learn to communicate information about a particular art, science, trade or profession. The course emphasizes such skills as clarity, objectivity, audience analysis and adherence to format. Students use subjects within their intended majors or career fields to write business correspondence, memoranda, resumes, mechanism descriptions, progress reports and analytical research reports. Prerequisite: Minimum 2.0 in ENGL& 101 or permission of instructor. (SCC, SFCC)

ENGL& 236 – Creative Writing I (5 cr)

This course teaches creative writing for beginners. It emphasizes writing as a craft; examines forms and techniques of professional writing through selective readings; offers students the opportunity to try their hand at a variety of styles, forms and techniques in both poetry and prose; as well as practice in writing, revision and editing skills. The format is an informal workshop that acquaints students with specialized skills such as preparing a manuscript for publication and working on a literary magazine in a variety of capacities. Prerequisite: ENGL& 101 or permission of instructor. (SCC, SFCC)

ENGL& 237 – Creative Writing II (5 cr)

This course teaches creative writing for intermediate writers. It is the logical continuation of ENGL& 236; however, it also is suited for students who, provided they have had prior writing experience, wish to pursue specific writing projects or are interested in both receiving and dispensing constructive peer critique in an informal workshop setting. Students have the opportunity to balance class activities with individual writing interests. The emphasis is on writing as a serious craft, and the course focuses primarily on poetry and prose though other forms of writing also may be included. Prerequisite: ENGL& 236 or permission of instructor. (SCC, SFCC)

ENGL 238 – Advanced Expository Writing (5 cr)

This class is a logical extension of ENGL& 101 and ENGL& 102, going beyond rhetorical modes and research skills to explore and practice the longer essay. Prerequisite: ENGL& 101, ENGL& 102. (SCC, SFCC)

ENGL 241 – The Bible as Literature (5 cr)

Students experience a literary study of history's most influential book. Readings from the Bible illustrate its major themes and genres. An exploration of the Bible's historical and cultural contexts provides background for these readings. Students gain a foundation for appreciating the Bible's massive impact on subsequent literature. (SCC)

ENGL 247 – American Multicultural Literature (5 cr)

This course surveys contemporary African American, Asian American, Latino American, and Native American literature from 1950s to the present and may include other diverse literatures, such as Jewish, Gay/Lesbian, or Indian, etc. (SCC, SFCC)

ENGL 248 – American Literature to 1865 (5 cr)

This survey course examines major writers of the period including Taylor, Edwards, Franklin, Irving, Cooper, Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL 249 – American Literature since 1865 (5 cr)

This survey course focuses on selected works of representative American writers from the Civil War to the present. Writers such as Twain, Chopin, Hemingway, Hughes, Ginsberg Plath, and Morrison among others are analyzed, paying particular attention to the cultural and historical contexts from which these diverse writers emerge and to which they speak. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

See program/course abbreviation key on page 143.

ENGL 251 – Introduction to Language (5 cr)

This course includes contemporary English language study introducing morphology, phonology, syntax and semantics. Language acquisition, animal communication, language communications and dialects are explored. (SCC)

ENGL 254 – Literary Magazine Production (2-5 cr)

A production course for Legend's, SCC's literary magazine. Discussion and criticism of writing, theory and practice; layout and design; process of publication, theory and practice. (SCC)

ENGL 255 – Advanced Literary Magazine Production (2-5 cr)

A continuation of the concepts introduced in ENGL 254 with emphasis on advanced concepts and production work involved in the creation of Legend's, SCC's literary magazine. Discussion and criticism of writing, theory and practice; layout and design; process of publication, theory and practice. Prerequisite: ENGL 254. (SCC)

ENGL 259 – African American Literature (5 cr)

This course examines the African American literary tradition through the works of key authors, from pre-Civil War writings to the present, locating these works in cultural and historical contexts. (SCC, SFCC)

ENGL 261 – Twentieth Century Novel (5 cr)

Students read, discuss and write about novels, leading them to a deeper appreciation and understanding of the genre and its practitioners. Novels vary from quarter to quarter. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

ENGL 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

ENGL 271 – World Literature to 1650 (5 cr)

This course explores foundational works of Middle Eastern, Mediterranean, and European civilizations from the dawn of literacy to the Renaissance. Representative works may include but are not limited to Gilgamesh, the Bible, The Odyssey, Lysistrata, the Qu'ran, the Inferno and Othello. Prerequisite: Sophomore standing or ENGL& 101. SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL 272 – World Literature since 1650 (5 cr)

Students read and trace the emergence of a global literature from the period of European colonialism to the contemporary multicultural world. Representative authors may include Moliere, Voltaire, Goethe, Tolstoy, Kafka, Pirandello, Narayan, Garcia Marquez and Achebe. Prerequisite: Sophomore standing and/or ENGL& 101. SFCC only: Recommended placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL 278 – Women Writers (5 cr)

Students analyze, discuss and write about literature written by women in order to gain a greater understanding of and appreciation for the contributions of women to the field of literature. Emphasis is placed on the identification of themes, conventions and techniques of women writers across class and cultural boundaries. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENGL 294 – Special Topics in Writing (2-5 cr)

The course's content varies from quarter to quarter according to designation and credits filed in advance of each scheduling. Students may repeat the course for credit with different topics. Prerequisite: ENGL& 101, grade of 2.0 or above; or permission of instructor. (SCC, SFCC)

ENGL 295 – Special Studies in Literature (2-5 cr)

Students analyze, discuss and write about the literature of a particular genre, author or period. The course content varies and may include the following: Classical mythology, contemporary novels, mystery or crime fiction, historical novels, Western fiction, women writers, and Black and Chicano literature. The emphasis of each course is understanding the themes, conventions and techniques of the writers within the genre. The aim is to assist students in recognizing the ways in which literature reflects and challenges the values of its audience. Course may be repeated for credit with different topics. Prerequisite: ENGL& 101, grade of 2.0 or above; or permission of instructor. SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

ENVIRONMENTAL SCIENCES**ENVS& 101 – Intro to Env Science (5 cr)**

A study of the basic concepts of ecology, including ecosystems structure and function, energy flow, biochemical cycles, limiting factors, population dynamics and community interactions. Emphasis is placed on the use of the scientific method to investigate man's current environmental problems and to propose possible solutions. Meets A.A. degree lab science requirement. (SCC, SFCC)

ENVS 104 – Environmental Conservation (5 cr)

This course introduces basic principles of conservation with emphasis on renewable natural resources, soils, water, forest, range, wildlife and recreation. (SCC)

ENVS 110 – Plant Biology (5 cr)

This course introduces biological principles and the relationship between plants and man. Students learn how the plant-dependent world ecosystem supports human existence. (SCC)

ENVS 207 – Wildlife Biology (5 cr)

This course provides students with the basic principles of wildlife ecology, habitat, population dynamics, behavior and management practices. (SCC)

ENVS 208 – Outdoor Recreation and Interpretation (3 cr)

Students learn about a variety of regional outdoor recreation activities, their management, with an emphasis on safety and environmental ethics. (SCC)

ENVS 210 – Environmental Soil Science (5 cr)

This course introduces the properties, characteristics and functions of forest soils found in natural conditions. The relationships between native vegetation and noncultivated soils are emphasized. (SCC)

ENVS 211 – Weather and Climate (5 cr)

This course introduces the descriptive treatment of meteorological and climatological phenomena including winds, weather fronts, air masses, clouds, temperature and precipitation. Basic computations, weather map analysis, forecasting and instrumentation techniques are emphasized. (SCC)

ENVS 217 – Field Sampling Techniques (4 cr)

This course builds on the basic ecology skills developed in NATRS 207 and focuses on applied sampling theory, field approaches, and practical applications relative to fish and wildlife habitat and population sampling methods. Prerequisite: NATRS 120, 122, ENVS 207 or permission of instructor. (SCC)

ENVS 218 – Environmental Science Conservation Planning (2 cr)

This course provides students with training in environmental conservation planning for working with private landowners and governmental agencies. Procedures and guidelines outlined in the National Planning Procedures handbook (NPPH) and current conservation planning policies are emphasized. Multidisciplinary in nature, this course prepares students to assess needs and impacts on and off-site. Writing conservation plans for private landowners and governmental agencies also is covered. (SCC)

ENVS 227 – Advanced Wildlife Biology (4 cr)

This course builds on the basic ecology skills developed in NATRS 207 and sampling skills developed in ENVS 217 and focuses on the integration and practical application of fish and wildlife ecological theory, applied sampling theory, and field skills in completing realistic projects and scenarios. Prerequisite: ENVS 217. (SCC)

ENVS 237 – Bird Identification (3 cr)

This course develops bird identification skills necessary to compete for jobs conducting landbird monitoring within this region. (SCC)

FASHION MERCHANDISING**FMDSE 111 – Fashion Merchandising Seminar (1-2 cr)**

Gives the student an opportunity to pursue topics of interest related to real job situations, and serves as the vehicle for determining and granting work experience and cooperative education work experience. Must be taken concurrently by students who wish to receive work experience and cooperative education work experience. Prerequisite: Concurrent enrollment in fashion merchandising or retail management program. (SFCC)

FMDSE 112 – Fashion Merchandising Seminar (1-2 cr)

Gives the student an opportunity to pursue topics of interest related to real job situations, and serves as the vehicle for determining and granting work experience and cooperative education work experience. Must be taken concurrently by students who wish to receive work experience and cooperative education work experience. Prerequisite: Concurrent enrollment in fashion merchandising or retail management program. (SFCC)

FMDSE 113 – Fashion Merchandising Seminar (1-2 cr)

Gives the student an opportunity to pursue topics of interest related to real job situations, and serves as the vehicle for determining and granting work experience and cooperative education work experience. Must be taken concurrently by students who wish to receive work experience and cooperative education work experience. Prerequisite: Concurrent enrollment in fashion merchandising or retail management program. (SFCC)

See program/course abbreviation key on page 143.

FMDSE 150 – Principles of Retail Merchandising (5 cr)

Careers and opportunities in the retail field; an overview of store location, retail organization and merchandise management including promotion, pricing, salesmanship and inventory control methods. (SFCC)

FMDSE 152 – Professional Development in Business (2 cr)

Analysis and planning for career building, job seeking, job holding and progression in employment. Emphasizes personal adjustment in developing attitudes, personality, appearance and effective communication necessary for successful retail management. (SFCC)

FMDSE 155 – Fashion Trends (3 cr)

Fashion terminology and fashion institutions are analyzed. The role of fashion in apparel and nonapparel goods along with the recurrence of styles are traced through history. A study of the fashion concept, major designers, and fashion fads and cycles is presented. (SFCC)

FMDSE 160 – Merchandise Presentation (5 cr)

Learn to see retail stores as a professional sees them. Instruction in basic terminology, design principles, signing and graphics, and the use of mannequins is combined with practical experience in creating displays that sell. (SFCC)

FMDSE 161 – Merchandise Trends (3 cr)

Tune into the current merchandise trends in retail. Explore the world of fashion and its effect on what you see in today's stores. Lectures and discussions on the subjects of clothing, famous designers, brand names, home furnishings and publications. (SFCC)

FMDSE 180 – Retail Sales Techniques (3 cr)

Effective retail sales techniques are discussed and practiced in a seminar atmosphere. Understanding of professional skills and attitudes necessary to become an effective retail sales professional is emphasized. Student develops practical application of retail sales principles through role playing, sales demonstrations and personalized learning projects. (SFCC)

FMDSE 201 – Fashion Fabrics (3 cr)

The origin and construction of current natural and synthetic fibers are studied together with their uses, characteristics and sources of supply. The textile laws and regulations concerning the labeling of textiles also are analyzed. (SFCC)

FMDSE 210 – Merchandising Management (5 cr)

Deals with percentages, trade discounts, markup, markdown and related calculations. The concepts of open-to-buy price lines, budgeting, inventory control systems and assortment planning are analyzed. Prerequisite: BUS 103 and FMDSE 150 or permission of instructor. (SFCC)

FMDSE 224 – Principles of Retail Promotion (5 cr)

This course is designed to increase the student's understanding of advertising and sales promotion related to retailing. This objective is accomplished in two ways: 1) through the use of the text which outlines the concepts and problems of retail advertising and sales promotion, and gives examples of methods and techniques used in the field; and 2) through lectures, class discussions, field trips, guest speakers and audiovisual aids. (SFCC)

FMDSE 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

FINANCIAL SERVICES/TELLER**BANK 101 – Introduction to Banking Industry (4 cr)**

The course provides students with a broad overview of the banking industry including different kinds of institutions, forms, policies and procedures, and duties and responsibilities of bank tellers. (SCC)

BANK 102 – Professional Standards in Banking (1 cr)

The course discusses and explains professional standards for a bank teller including dress code, human relations and attitudes. (SCC)

BANK 103 – Introduction to Teller Operations (4 cr)

This course discusses teller operations. Emphasis is placed on handling money and working with checks, savings and checking accounts, and negotiable instruments. Selling and cross-selling techniques are discussed before students role play. (SCC)

BANK 104 – Teller Operations Applications (3 cr)

This course gives hands-on teller applications. Emphasis is placed on balancing cash drawers, using PC-based computer software to record various banking transactions, operating 10-key calculators to gain 10-key-by-touch skills and accessing information on the Internet. (SCC)

FIRE OFFICER**FOD 101 – Fire Officer IA (3 cr)**

This course introduces students to a fire officer's duties. Content includes the required mindset, report writing, diversity, workplace safety, decision making, quality assurance, supervisory practices and pre-incident planning. Prerequisite: Fire department affiliation. (SCC)

FOD 102 – Fire Officer IA Work Based Learning (3 cr)

Students learn to manage task assignments, citizens' complaints, accident investigations, member assistant programs, and to apply human resource management policies and safety regulations. Prerequisite: FOD 101 and worksite authorization agreement. (SCC)

FOD 103 – Fire Officer IB (3 cr)

This course gives students a profound understanding of a fire officer's duties. Determining fire cause, emergency operations, compliance issues, scene safety, Incident Management System (IMS), strategy/tactics, assessment and action planning, and the public information officer (PIO) functions are emphasized. Prerequisite: FOD 102 and fire department affiliation. (SCC)

FOD 104 – Fire Officer IB Work Based Learning (3 cr)

This course includes directing training evolutions, managing public inquiries, determining preliminary fire cause, pre-incident planning, incident action planning and emergency operations. Prerequisite: FOD 103 and work site authorization agreement. (SCC)

FOD 110 – Fire Service Leadership (3 cr)

This course emphasizes the effectiveness of a fire officer. Content includes role conflict, creativity, personal power, ethics, problem solving, decision making, situational leadership, delegating, coaching and discipline. Prerequisite: FOD 103 and fire department affiliation. (SCC)

FOD 131 – Fire Service Instructor I (3 cr)

This course introduces students to the skills necessary for fire service instructors. Content includes instructor challenges, presentation skills, legal considerations, student learning, delivery methods, instructional media and evaluating performance. (SCC)

FOD 132 – Fire Service Instructor II Work Based Learning (3 cr)

Students develop skills in the four-step lesson plan. Students design curriculum and present lessons based on their awareness in the fire service utilizing the skills learned from instructor courses. Prerequisite: Fire department affiliation. (SCC)

FOD 133 – Fire Service Instructor II (3 cr)

Students learn to advance as a fire service instructor in this course. Content includes planning models, needs and task analysis, lesson plan development, performance testing, supervisor training programs and critiques. Prerequisite: FOD 132 and fire department affiliation. (SCC)

FOD 140 – Fire Service Incident Safety Officer (2 cr)

This course is designed to help students identify the role of the safety officer on specific types of incidents. Students learn to develop and apply safety plans for various incidents. Prerequisite: Fire department affiliation. (SCC)

FOD 201 – Fire Officer IIA (3 cr)

Further understanding of a fire officer's duties is emphasized in this course. Content includes interaction with government agencies, report writing, managing human resources, RMS, budgets, performance appraisals, exposure reports and public education. Prerequisite: FOD 104 and fire department affiliation. (SCC)

FOD 202 – Fire Officer IIA Work Based Learning (3 cr)

This course emphasizes maximizing member and unit performance, delivering public education, changing policies, budget preparation, report writing and analyzing accident/injury reports. Prerequisite: FOD 201 and work site authorization agreement. (SCC)

FOD 203 – Fire Officer IIB (3 cr)

Further understanding of a fire officer's duties is emphasized in this course. Content includes interaction with government agencies, report writing, managing human resources, RMS, budgets, performance appraisals, exposure reports and public education. Prerequisite: FOD 202 and fire department affiliation. (SCC)

FOD 204 – Fire Officer IIB Work Based Learning (3 cr)

This course emphasizes maximizing member and unit performance, preparing news releases, conducting fire inspections, determining a fire's point of origin and producing incident operational plans. Prerequisite: FOD 203 and work site authorization agreement. (SCC)

FOD 205 – Fire Investigation (3 cr)

Students learn methods of determining the area of fire origin, fire causes, fire spread and other aspects of fire behavior; recognition of accidental and incendiary fires; securing and preserving evidence of a suspected arson; witness interrogation methods; arson laws and court procedures; court case preparation and testimony; coordination with other investigative agencies; compilation of reports and records; and review of case histories. Prerequisite: Volunteer or career firefighter or permission of program coordinator. (SCC)

See program/course abbreviation key on page 143.

FOD 206 – Fire Inspection and Codes (4 cr)

Students study the fire code as it applies to fire prevention inspections at the fire company level. The fire code's relationship to the building Code and other recognized standards are presented. General provisions of the fire code maintenance of exit way, fire protection, flammable and combustible liquids, liquified petroleum gases, places of assembly, and general precautions against fire are emphasized. Discussions of public relations and alternate methods and materials give the course a realistic approach to field operations. Prerequisite: Volunteer or career firefighter or permission of program coordinator. (SCC)

FOD 210 – Incident Management-Multi-Company Operations (3 cr)

This course emphasizes the management of multi-alarm incidents. Content includes expanding incident management systems (IMS), scene safety, managing resources, pre-incident planning, decision making, communications, post-incident analysis and multiple scenarios. Prerequisite: Fire department affiliation. (SCC)

FIRE SCIENCE TECHNOLOGY**FS 100 – Orientation to Fire Science (2 cr)**

An introductory class designed to provide students with the history and philosophy of fire science. Content areas to be covered in this course also include career orientation, employment requirements and fire personnel responsibilities. (SCC)

FS 105 – Principles of Hydraulics (4 cr)

Students are introduced to the fundamentals of fluids in motion and at rest and their applications to the fire service industry. (SCC)

FS 152 – Building Construction (3 cr)

This course covers the classifications of buildings and what constitutes a rated building. Fire and life safety devices required by the U.B.C. are emphasized. The installation of fire assemblies and appliances are introduced. (SCC)

FS 160 – Fire Tactics (3 cr)

This course introduces students to the basic principles of fire tactics and strategies, and provides students with the skills needed to safely and effectively supervise company-level fire ground operations. Principles of size-up and fire spread, hazard identification, fire attack methodology based on the principles of RECEO-VS, supervision and coordination of assigned resources, and fire ground safety are emphasized. (SCC)

FS 170 – Hazardous Materials I (3 cr)

Students study hazardous materials regulations; terminology; identification systems, shipping and storage containers; incident command systems and basic analysis; information resources; chemical protective clothing, and decontamination. (SCC)

FS 177 – Wildland Fire Operations (3 cr)

This course is designed to prepare the student to fight wildland fires. It includes information on safety practices and initial control strategies, and meets the NWCG requirements for S-130/S-190 and L-130. Prerequisite: Volunteer or career firefighter or acceptance by special permission. (SCC)

FS 200 – Hazardous Waste Operations and Emergency Response (3 cr)

The Occupational Safety and Health Administration (OSHA) requires that all employees working and handling hazardous waste be provided with a minimal amount of safety training. Course content meets and/or exceeds the guidelines as regulated by OSHA. (SCC)

FS 211 – Introduction to Fire Science (4 cr)

This course introduces students to the basics of firefighting. Topics include safety, fire behavior, personal protective equipment, portable extinguishers, search and rescue, ropes and knots, hoses, ladders, and emergency vehicle accident prevention. Prerequisite: Successful completion of first year general education requirements and concurrent enrollment in FS 212. (SCC)

FS 212 – Fire Science Applications I (6 cr)

Practical applications using firefighting equipment including personal protective equipment, hoses, ladders and extinguishers are emphasized. Emergency vehicle accident prevention methods also are included. (SCC)

FS 220 – Fire Protection Systems (2 cr)

This course introduces water type fire extinguishing sprinkler systems, protection systems for special hazards, and fire alarm protection systems. Students visit local facilities that have fire protection equipment and systems and learn to make critical appraisals. (SCC)

FS 221 – Intermediate Fire Science (4 cr)

This course provides a continuation of the concepts introduced in FS 211 with emphasis on the incident command system, forcible entry, ventilation, salvage, overhaul, fire cause determination, communications and water supply. Prerequisite: Successful completion of FS 211, 212 and concurrent enrollment in FS 222. (SCC)

FS 222 – Fire Science Applications II (6 cr)

Practical applications using the incident command system are emphasized in this course. Practical skills include forcible entry, ventilation, salvage, overhaul, fire cause determination, communications and water supply. Prerequisite: Successful completion of FS 211, 212 and concurrent enrollment in FS 221. (SCC)

FS 231 – Advanced Fire Science (4 cr)

This course provides a continuation of the concepts introduced in FS 211 and 221 with emphasis on fire streams, fire suppression, heavy-duty rescue, vehicle fires, wildland fires and fire prevention. Prerequisite: Successful completion of FS 221, 222 and concurrent enrollment in FS 232. (SCC)

FS 232 – Fire Science Applications III (6 cr)

Practical lab applications utilizing skills from FS 212 and 222 are emphasized. Fire streams, fire suppression techniques, heavy-duty rescue, vehicle fires, wildland fires and fire prevention also are emphasized. Prerequisite: Successful completion of FS 221, 222 and concurrent enrollment in FS 231. (SCC)

FS 233 – Professional Development (2 cr)

This course explores a variety of self-development activities that assist students in gaining employment after graduation. These activities include practice civil service examinations, both written and oral, in addition to exercises in professional demeanor as appropriate to fire fighters. This course is required in one of the student's last two quarters prior to graduation. (SCC)

FS 241 – Recruit Fire Fighter Academy (5 cr)

This course provides the students with the basic skills and knowledge needed to perform fire fighting tasks under direct supervision. Objectives are based on NFPA 1001, Fire Fighter 1, and Fire Fighter Professional Standards. Prerequisite: Active member in a fire department. (SCC)

FS 248 – Rescue System I (3 cr)

This course provides the students with the ability to apply basic search and rescue skills, approach rescue situations safely and understand the organizational concerns at a structural collapse incident. Prerequisite: Firefighter I or equivalent. (SCC)

FS 250 – Fire Science Recruit Academy Theory (21 cr)

A comprehensive study of fire science theory, equipment, and methods used to fight fires, and the health and safety factors that may affect the firefighter. Prerequisite: Open only to students accepted into the Recruit Academy. (SCC)

FS 251 – Fire Science Recruit Academy Lab (16 cr)

Practical applications and fire drills utilizing a variety of fire fighting tactics and equipment. Related physical and manipulative skills also are practiced. Prerequisite: Open only to students accepted into the Recruit Academy. (SCC)

FS 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

FS 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

FS 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

FRENCH**FRCH& 121 – French I (5 cr)**

FRCH& 121, 122 and 123 are parts of a beginning series designed to develop skills in reading, writing, speaking and listening to a basic level of proficiency. It enables the student to communicate basic ideas in French and understand the cultural context of the language through the study of the French-speaking regions around the world. FRCH& 121 is taught through an experiential methodology that entails the exclusive use of French in the classroom, emphasis on oral and written communicative skills, interpersonal exchange of ideas, interactive presentation of grammar, a multimedia approach and daily practice outside of class. Language laboratory work is an integral part of this language series. (SCC, SFCC)

FRCH& 122 – French II (5 cr)

FRCH& 121, 122 and 123 are parts of a beginning series designed to develop skills in reading, writing, speaking and listening to a basic level of proficiency. It enables the student to communicate basic ideas in French and understand the cultural context of the language through the study of the French-speaking regions around the world. FRCH& 121 is taught through an experiential methodology that entails the exclusive use of French in the classroom, emphasis on oral and written communicative skills, interpersonal exchange of ideas, interactive presentation of grammar, a multimedia approach and daily practice outside of class. Language laboratory work is an integral part of this language series. Prerequisite: FRCH& 121 or one year of high school French or permission of instructor. (SCC, SFCC)

FRCH& 123 – French III (5 cr)

FRCH& 121, 122 and 123 are parts of a beginning series designed to develop skills in reading, writing, speaking and listening to a basic level of proficiency. It enables the student to communicate basic ideas in French and understand the cultural context of the language through the study of the French-speaking regions around the world. FRCH& 121 is taught through an experiential methodology that entails the exclusive use of French in the classroom, emphasis on oral and written communicative skills, interpersonal exchange of ideas, interactive presentation of grammar, a multimedia approach and daily practice outside of class. Language laboratory work is an integral part of this language series. Prerequisite: FRCH& 122 or one and one-half years of high school French or permission of instructor. (SCC, SFCC)

FRCH& 221 – French IV (5 cr)

FRCH& 221, 222 and 223 are parts of an intensive intermediate-level language series designed to answer the needs of students coming from varying backgrounds. These students are studying French for a multitude of reasons and hope to review the grammar taught in our 100-level classes. FRCH& 221, 222 and 223 aim at the further development of the students' four skills (reading, writing, listening and speaking) up to an intermediate level of proficiency. Emphasis is on reviewing grammar in order to express oneself in writing or in conversations, and experiencing the language in its cultural contexts through the study of the French-speaking regions around the world. FRCH& 221, 222 and 223 are taught through an experiential methodology, which entails exclusive use of French in the classroom, emphasis on communicative skills, interactive and contextualized use of grammar through textbook materials, on-line exercises, audio-tapes, magazines and various other media, and daily practice outside of class. Prerequisite: FRCH& 123 or permission of instructor. (SCC, SFCC)

FRCH& 222 – French V (5 cr)

FRCH& 221, 222 and 223 are parts of an intensive intermediate-level language series designed to answer the needs of students coming from varying backgrounds. These students are studying French for a multitude of reasons and hope to review the grammar taught in our 100-level classes. FRCH& 221, 222 and 223 aim at the further development of the students' four skills (reading, writing, listening and speaking) up to an intermediate level of proficiency. Emphasis is on reviewing grammar in order to express oneself in writing or in conversations, and experiencing the language in its cultural contexts through the study of the French-speaking regions around the world. FRCH& 221, 222 and 223 are taught through an experiential methodology, which entails exclusive use of French in the classroom, emphasis on communicative skills, interactive and contextualized use of grammar through textbook materials, on-line exercises, audio-tapes, magazines and various other media, and daily practice outside of class. Prerequisite: FRCH& 221 or permission of instructor. (SCC, SFCC)

FRCH& 223 – French VI (5 cr)

FRCH& 221, 222 and 223 are parts of an intensive intermediate-level language series designed to answer the needs of students coming from varying backgrounds. These students are studying French for a multitude of reasons and hope to review the grammar taught in our 100-level classes. FRCH& 221, 222 and 223 aim at the further development of the students' four skills (reading, writing, listening and speaking) up to an intermediate level of proficiency. Emphasis is on reviewing grammar in order to express oneself in writing or in conversations, and experiencing the language in its cultural contexts through the study of the French-speaking regions around the world. FRCH& 221, 222 and 223 are taught through an experiential methodology, which entails exclusive use of French in the classroom, emphasis on communicative skills, interactive and contextualized use of grammar through textbook materials, on-line exercises, audio-tapes, magazines and various other media, and daily practice outside of class. Prerequisite: FRCH& 222 or permission of instructor. (SCC, SFCC)

FRCH 241 – Conversation and Culture (2 cr)

FRCH 241 is designed for students who wish to develop their French conversational skills up to an intermediate level, through class discussions and short oral presentations. At the first meeting, student participants will have the opportunity to design the course topic discussions based on, but not limited to, the following topics: Diversity of France, politics, economics, European Union, currency, family values, stereotypes, history, geography, media, French cultural and literary traditions, and current events. Use of the ILC is recommended. Prerequisite: FRCH& 123 or permission of instructor. (SCC, SFCC)

FRCH 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

FRCH 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

FUNDAMENTALS OF SCIENCE**FSCI 098 – Fundamentals of Science (5 cr)**

An introduction to the basic ideas of the scientific method and the tools and concepts needed to succeed in an introductory collegiate science course. (SCC)

FSCI 101 – Interdisciplinary Science (5 cr)

This is the first of a three-quarter sequence of classes. An integrated science course that involves physics, astronomy, and geology. Climate and global change will be used as a theme to develop basic concepts in science, such as measurement, analysis of data, hypothesis generation, and testing. Students will actively be involved in class as they collect and analyze data, and state relevant facts pertaining to a selection of topics involving concepts in physics, astronomy, and geology. Students will maintain a laboratory notebook and formally present data to peers throughout the course. Prerequisite: 2.0 or better in MATH 099. (SCC, SFCC)

FSCI 102 – Interdisciplinary Science (5 cr)

This is the second of a three-quarter sequence of classes for non-science majors. An integrated science course that involves physics, chemistry, and geology. The course will examine themes such as climate with respect to global change. Change will be used as a theme to develop basic concepts in science, such as measurement, analysis of data, hypothesis generation, and testing. Students will actively be involved in class as they collect and analyze data, and state relevant facts pertaining to a selection of topics involving concepts in physics, chemistry, and geology. Students will maintain a laboratory notebook and formally present data to peers throughout the course. Prerequisite: 2.0 or better in FSCI 101. (SCC, SFCC)

FSCI 103 – Interdisciplinary Science (5 cr)

This is the third of a three-quarter sequence of classes for nonscience majors. An integrated science course that involves biology, ecology, physics, and chemistry. Introduction to cellular, organismal and ecosystem biology, including human systems, for students majoring in elementary education. Includes inquiry-based biological investigations that support science instruction outlined in the National Science Education Standards and Washington Essential Academic Learning Requirements. Prerequisite: A 2.0 in FSCI 102 or permission of the instructor. (SCC, SFCC)

GENERAL STUDIES**GENST 090 – Pretechnical Basic Skills (10-18 cr)**

Designed to familiarize the student with the requirements to succeed in the engineering-related field. Additionally, fundamental skill enhancement is provided in reading, mathematics, and written and verbal communication; and study techniques such as test taking, lecture notes and using textbooks. This course feeds into fluid power, electronics, civil engineering technology, mechanical engineering technology, architectural technology, industrial electricity and robotics as a pre-engineering course. (SCC)

GENST 100 – Library Research Skills (2 cr)

This is a course designed for students from all programs. Students discover and explore information resources and learn successful library research techniques. Emphasis is placed on skills that are useful throughout college, as well as for lifelong learning. (SCC)

GENST 104 – The Internet and the Art of Research (1-3 cr)

An introduction to the Internet and its research potential is demonstrated. Students use Internet-based resources to locate books, periodicals and other information. Efficient searching techniques and strategies to evaluate information are stressed. (SFCC)

GENST 105 – Portfolio Development (3 cr)

A lecture/discussion course designed to instruct students in methods utilized to summarize and document prior learning experiences. Students describe skills, competencies and areas of knowledge that may have been attained outside of a traditional classroom environment. Prerequisite: Minimum ASSET score of 40 - reading and writing. (SCC)

GENST 106 – College Success (2-3 cr)

This course provides an opportunity for students to learn about services and strategies to help them become successful college students. The overall goal is to increase the likelihood that the students' year(s) at SFCC/SCC is successful, both academically and socially. It is designed for entering students and other students interested in becoming more effective college students. (SCC, SFCC)

GENST 107 – First Year Introduction (1 cr)

This course provides new SFCC students with a comprehensive introduction to college. Through seminars, learning modules and sample classes, students are expected to develop the fundamental skills and attitudes necessary for success in college. FYI helps students connect with other students, faculty and staff. Students learn about campus resources and develop an educational plan. (SFCC)

GENST 108 – Learning for the 21st Century (5 cr)

Emphasis is on building the skills and techniques for successful life long learning and identifying personal learning styles and strengths that facilitate learning in an on-line environment. Through a quarter-long research project on a global issue, participants examine various strategies for locating, evaluating and applying information resources in the research process with attention to information policy issues like censorship and freedom of information. (SCC, SFCC)

GENST 109 – Applied Critical Thinking (3 cr)

In this course, learners gain mastery of the following fundamental thinking skills competencies: Assumption, inferences, implications, conclusions, questions at issue, points of view, concepts and purpose of thinking consequences. Learners master the ability to assess their thinking by using the following intellectual standards: Clarity, specificity, relevance, logic, significance, accuracy, preciseness, consistency, completeness, depth and broadness. Learners practice reasoning abilities and begin developing intellectual traits. (SCC, SFCC)

GENST 110 – Critical Thinking in Women's Studies (2 cr)

A survey course identifying barriers women have faced throughout history; the ways different cultures have bound women to a narrow range of options because of attitudes, beliefs, customs and traditions; and how laws have been used to maintain and perpetuate women's vulnerability to abuse and poverty. By critically thinking about the economics of being a woman, and by learning effective skills in interpersonal relationships, individual women and men can develop ways to overcome prejudice. (SFCC)

GENST 114 – Thriving In College (2 cr)

Learn about college life! This course for new college students teaches success strategies by helping students to become familiar with the campus, to discover resources available to assist them in their collegiate journey, and to connect them with their peers. Students will learn how to interact effectively with instructors and will gain a solid foundation in study skills that are crucial for academic achievement. The class is intended to be taken concurrently with a 5-credit content area course. (SFCC)

GENST 115 – Internet Issues (2 cr)

Using effective web searching techniques, students in this course explore controversial topics that relate to the Internet, while discovering the richness of net resources. Issues such as privacy, encryption, censorship, freedom of information and other prominent topics on the Internet will be explored while students learn to be effective searchers. Information is analyzed, compared and evaluated, as are the search engines and indexes used to retrieve it. (SFCC)

GENST 140 – Adventures in Attitude (3 cr)

Students learn to recognize personal attitudes and choose positive attitudes which result in positive successful living. Content includes human relations, attitude awareness, planning and self-management, personality development, group dynamics, communication and problem solving. (SCC)

GENST 150 – General Studies Seminar (1-5 cr)

A seminar course to support various learning activities that assist students in the development of personal, professional and educational goals. Instructors may choose from a menu of topics to be presented. Areas of instruction may include human relations, interpersonal skills, written communications, decision-making/problem-solving techniques and/or workplace requirements. Course content varies depending on the number of credits and instructional areas chosen. (SCC)

GENST 151 – General Studies Seminar (1-5 cr)

A seminar course to support various learning activities that assist students in the development of personal, professional and educational goals. Instructors may choose from a menu of topics to be presented. Areas of instruction may include human relations, interpersonal skills, written communications, decision-making/problem-solving techniques and/or workplace requirements. Course content varies depending on the number of credits and instructional areas chosen. (SCC)

GENST 152 – General Studies Seminar (1-5 cr)

A seminar course to support various learning activities that assist students in the development of personal, professional and educational goals. Instructors may choose from a menu of topics to be presented. Areas of instruction may include human relations, interpersonal skills, written communications, decision-making/problem-solving techniques and/or workplace requirements. Course content varies depending on the number of credits and instructional areas chosen. (SCC)

GENST 154 – Introduction to Service Learning (2-5 cr)

This class combines an academic study of the foundations of the contemporary movement toward service learning with direct experience of community outreach. By building on learning through service to an area of local community need, students explore their own assumptions, values, questions, and beliefs regarding some of the key issues in social philosophy and ethics and democratic citizenship. Through students' community service experience, lecture, reading and research, students become familiar with individual and group aspects of human behavior. (SFCC)

GENST 155 – Service Learning Project (1 cr)

This course combines the academic study of service learning with practical experiences by student participation in the community. The course is directly linked to the academic or professional/technical area of study in which the student is engaged. Prerequisite: Permission of instructor. (SCC)

GENST 202 – Assertive Training for Women (2 cr)

Individuals develop skills for expressing feelings and exercising rights without impinging on others, increase self-awareness and develop techniques of effective problem solving. (SCC)

GENST 203 – Prior Learning Assessment Portfolio Development (1 cr)

This class explores the use of a portfolio to document learning experiences. Students develop a personal and/or professional portfolio resource notebook by using their choice of media. Prerequisite: ENGL& 101 or above or 80 percent pass of COMPASS testing. (SFCC)

GENST 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

GENST 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

GENST 280 – Honors Seminar (1-5 cr)

The course offers students an opportunity through reading and discussion to deal with topics and ideas not normally covered in the classes presently offered. These topics and ideas are generally broader in scope and often overlap in four or five areas. Topics cover concepts to the basic foundation of liberal arts. This seminar deals with basic concepts through discussion and readings necessary for the development of a liberally educated mind. Exceptional students probe horizons of the collegial atmosphere in their quest of a liberal education. Students and faculty sit together and share concepts that affect our notion of the world around us. The course is restricted to the student who is looking for more than what is offered in the normal curriculum, and who demonstrates the motivation toward this. Prerequisite: Permission of honors coordinator with 3.5 GPA or above usually required. (SFCC)

GENST 291 – Educational Tour (1-5 cr)

An educational tour sponsored by one or more departments offering students an opportunity to explore a particular subject off campus. The purpose of the trip is to broaden a student's understanding of material covered in the classroom or to expose the student to cultural experiences not available on campus. The tours may be to either domestic or foreign locations. (SCC, SFCC)

GENST 292 – Educational Tour (1-5 cr)

An educational tour sponsored by one or more departments offering students an opportunity to explore a particular subject off campus. The purpose of the trip is to broaden a student's understanding of material covered in the classroom or to expose the student to cultural experiences not available on campus. The tours may be to either domestic or foreign locations. (SCC, SFCC)

GENST 293 – Educational Tour (1-5 cr)

An educational tour sponsored by one or more departments offering students an opportunity to explore a particular subject off campus. The purpose of the trip is to broaden a student's understanding of material covered in the classroom or to expose the student to cultural experiences not available on campus. The tours may be to either domestic or foreign locations. (SCC, SFCC)

GEOGRAPHY

GEOG 101 – Introduction to Geography (5 cr)

An introduction to human and physical geography including mankind's reciprocal relationship with environmental concerns, world place geography, geomorphology and economic geography. Optional field trips included to assist students in better understanding course content. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

GEOG 230 – World Regional Geography (5 cr)

A survey of world geographical relationships. Includes an examination of the distribution of selected physical and human phenomenon and the processes responsible for the distributions and varying interrelationships from place to place between humans and their environment. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

GEOG 260 – The Violent Earth (5 cr)

Students are offered a descriptive and interpretive examination of the influence and relationship of man with the natural hazards of the earth, including identification, analysis, distribution and geographic patterning of the following: Hurricanes, water spouts, disease, tornadoes, wind shear, tsunamis, tides, river tides, volcanoes, glaciers, earthquakes, quick clay (spontaneous liquification), landslides, floods, droughts and lightning. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

GEOLOGY

GEOL& 100 – Survey of Earth Science (5 cr)

This course, offered as a television class, is a survey of physical geology including paleontology, mapping and earth history. While some laboratory work and field trips are elements of this course, it does not qualify as a laboratory science. Credit will not be granted for both GEOL& 101 and GEOL& 100. This is a physical science course. (SCC, SFCC)

GEOL& 101 – Intro Physical Geology (5 cr)

An introductory course in geology designed to acquaint beginning geology students with the importance of geology and minerals in their everyday lives through the study of the general concepts of geology, plate tectonics, earthquakes, mountain building, formation of continents, materials on earth, erosional processes and patterns, underground water, glaciation, and shoreline formations. Laboratory covers mineral and rock identification and map interpretation. Credit will not be granted for both GEOL& 101 and GEOL& 100. (SCC, SFCC)

GEOL 114 – Earth Systems Science--Online (5 cr)

This course introduces students to the physical evidence, scientific principles and methods of analysis necessary to understand how Earth systems interact to generate and sustain the physical environment in which we live. It is taught online via the Internet. This course does not qualify as a laboratory science. Prerequisite: Working knowledge of basic algebra and ENGL 098. (SCC, SFCC)

GEOL 116 – Environmental Geology (5 cr)

An introduction to environmental geology including geologic processes and land forms. An emphasis on practical applications using case history studies involving engineering and environmental problems as they relate to geologic settings. (SCC, SFCC)

GEOL 201 – The Earth Through Time (5 cr)

The course is an overview of earth's geologic history through time. Topics of discussion include the geologic formation of earth and its rock types, as well as the evolution of lifeforms through time. The effects of plate tectonics on paleoclimates, paleogeographies, and evolutionary patterns for the major continental and marine ecosystems are considered. Meets A.A. degree lab science requirement. Prerequisite: GEOL& 101, 100 or 1 year of high school science. (SCC)

GEOL 210 – Pacific Northwest Geology (5 cr)

An overview of the geologic history of the Pacific Northwest. Emphasis is on the plate tectonic relationships between the various geologic regions of the Northwest via hands-on interpretations of rocks, geologic maps and field observations. Prerequisite: GEOL& 101 or permission of instructor. (SCC)

GERMAN

GERM& 121 – German I (5 cr)

Introduction to German culture with emphasis on conversation with some writing. (SCC, SFCC)

GERM& 122 – German II (5 cr)

Introduction to German culture with emphasis on conversation with some writing. Prerequisite: GERM& 121 or equivalent. (SCC, SFCC)

GERM& 123 – German III (5 cr)

Introduction to German culture with emphasis on conversation with some writing. Prerequisite: GERM& 122 or equivalent. (SCC, SFCC)

GERM 141 – German Conversation and Culture (5 cr)

This course accommodates students with individual language needs. Through conversation, supplementary readings, writing and individual projects in German, students expand the study of culture, civilization and contemporary life of German speaking people. Conducted in German. Prerequisite: One year of college German or permission of instructor. (SCC, SFCC)

GERM& 221 – German IV (5 cr)

This is a review of German grammar, supplemented by films and slides from the Consulate General of the Federal Republic of Germany. Prerequisite: GERM& 123 or equivalent. (SCC, SFCC)

GERM& 222 – German V (5 cr)

This course covers conversation based upon current newspaper and magazine articles. Composition based upon classics of German literature. Prerequisite: GERM& 221 or equivalent. (SCC, SFCC)

GERM& 223 – German VI (5 cr)

Emphasis upon composition, analysis of short essays and stories representative of important aspects of German culture are covered in this course. Prerequisite: GERM& 222 or equivalent. (SCC, SFCC)

GERM 241 – German Conversation and Culture (5 cr)

This course accommodates students with individual language needs. Through conversation, supplementary readings, writing and individual projects in German, students expand the study of culture, civilization and contemporary life of German speaking people. Conducted in German. Prerequisite: Two years of college German or permission of instructor. (SCC, SFCC)

GERM 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

GERONTOLOGY PARAPROFESSIONAL

HSGER 101 – Introduction to Social Gerontology (5 cr)

Introduction to the theories of ageism created and institutionalized by many forces--historical, social, cultural and psychological. Emphasis on the study, research and practicalities of serving the needs of the elderly in contemporary American society. (SFCC)

HSGER 110 – Leisure, Learning, and Living (5 cr)

General data and observations as philosophy, trends and research in the leisure field; directed theoretical analysis of these studies as they pertain to the aging person; and contact with observations, progress visits, interviews and reports are addressed in this course. (SFCC)

HSGER 115 – Multi-Cultural Perspectives in Human Services (5 cr)

This course explores the experiences of minority cultures within the context of human services. Emphasis on investigating how each of the subcultures imposes its own distinctive normative structure on the individual, and the implications of cultural background on the planning and delivery of human services is addressed. (SFCC)

HSGER 201 – Aging and Personality (5 cr)

Personality theory and concepts of adjustment in terms of normal and pathological aging, and an overview of rehabilitative efforts with the aged. (SFCC)

HSGER 210 – Aging and Mental Health (5 cr)

An introduction to the theory and skills of aging and mental health as related to the aging process. As the aging process develops, several environmental changes occur that bring about physiological and psychological changes in some elderly persons. Students study the biological determinants, the speed of normal behavioral changes with age, the awareness of dysfunctions and senile dementia of the Alzheimer's type. (SFCC)

HSGER 221 – Counseling the Aging (5 cr)

Counseling techniques to assist the elderly in preretirement or rehabilitative services. Students may observe counseling activities, provide direct counseling, plan or implement a counseling service, or evaluate an existing service, depending on their level of skill. (SFCC)

HSGER 250 – Death, Loss and Grief (5 cr)

Designed to better understand death in its relationship to life through the exploration of what others have written about death and by examining one's own feelings about death and dying. We discuss and explore the death taboo; loss, grief, mourning, pain and the impact of the dying process; the helping professions; and the family and the dying person. (SFCC)

HSGER 281 – Practicum I (5 cr)

This course is an overview of the practicum experience. Classroom experience focuses on the concepts of individualized learning goals; agency; instructional supervision; mutual practicum responsibilities; and privileges of student, agency and college. Students spend observational time in three different agencies. Sharing these experiences with the total class provides an overview of the network of elderly services and later field practicum potentials. Prerequisite: One year of gerontology courses prior to practicum. (SFCC)

HSGER 282 – Practicum II (5 cr)

Students spend 132 hours working in an assigned agency in this course. Student's contract with agency specify duties and tasks that provide an opportunity to complete student's individualized learning goals. The agency assigns one member of its professional staff to supervise the student. Agency supervisor provides agency-specific instruction for the student and monitors student performance. Assigned college faculty regularly consults with agency supervisor and student regarding learning opportunities, student's progress, and application of classroom material to practicum experience. Prerequisite: HSGER 281. (SFCC)

HSGER 283 – Practicum III (5 cr)

This course is a continuation of HSGER 282. Students spend 132 hours working in an assigned agency. Student's contract with agency specify specific duties and tasks that provide an opportunity to complete student's individualized learning goals. Agency assigns one member of its professional staff to supervise the student. Agency supervisor provides agency-specific instruction for the student and monitor student performance. Assigned college faculty regularly consults with agency supervisor and student regarding learning opportunities, student's progress, and application of classroom material to practicum experience. Prerequisite: HSGER 282. (SFCC)

GOVERNMENT, STUDENT**GOVT 161 – VICA Seminar (1 cr)**

Conference course for students in the VICA program or similar groups; leadership and organization structure in student activities; applying for and holding a job, employee-employer relations; personal achievement; and the challenge of leadership. (SCC)

GOVT 191 – Student Senate (1 cr)

The responsibilities of the decision-making process of student government with emphasis on human relations, group interaction, developing the human potential of the individual, and improving communication skills and decision-making abilities. Open to all students interested in the student government process. (SCC, SFCC)

GOVT 192 – Student Senate (1 cr)

The responsibilities of the decision-making process of student government with emphasis on human relations, group interaction, developing the human potential of the individual, and improving communication skills and decision-making abilities. Open to all students interested in the student government process. (SCC, SFCC)

GOVT 193 – Student Senate (1 cr)

The responsibilities of the decision-making process of student government with emphasis on human relations, group interaction, developing the human potential of the individual, and improving communication skills and decision-making abilities. Open to all students interested in the student government process. (SCC, SFCC)

GOVT 195 – Activities Board (1 cr)

Responsibilities of program management through representative student government; emphasis on program development for the college, group interaction, communication skills and decision-making abilities. For members of student clubs and organizations and students interested in program development and scheduling management. (SCC, SFCC)

GOVT 196 – Activities Board (1 cr)

Responsibilities of program management through representative student government; emphasis on program development for the college, group interaction, communication skills and decision-making abilities. For members of student clubs and organizations and students interested in program development and scheduling management. (SCC, SFCC)

GOVT 197 – Activities Board (1 cr)

Responsibilities of program management through representative student government; emphasis on program development for the college, group interaction, communication skills and decision-making abilities. For members of student clubs and organizations and students interested in program development and scheduling management. (SCC, SFCC)

GRAPHIC DESIGN**GRDSN 101 – Design Process I (3 cr)**

This is a basic introduction course presenting the fundamentals of design, visual communication and conceptualization. The primary focus is on typography, color and composition. Activities focus on research and problem solving with an emphasis on idea generation and refinement using thumbnail and rough layouts. Students apply fundamental design and communication skills to projects in GRDSN 103. Prerequisite: Assessment reading score on the Compass of 80 or above or an ASSET reading score of 40 or above and concurrent enrollment in GRDSN 102, 103, 105 or permission of instructor. (SFCC)

GRDSN 102 – Design Technology I (3 cr)

This course is a basic introduction to the technology platform used in the design profession. Emphasis is on the operating system(s), computer operations, file types, format and management. Students learn fundamental software skills necessary to complete projects in GRDSN 103. Content includes operation of page layout, drawing and scanning software applications. Prerequisite: A COMPASS reading assessment score of 80 or above or an ASSET reading score of 40 or above or permission of instructor and concurrent enrollment in GRDSN 101, 103, 105. (SFCC)

GRDSN 103 – Design Projects I (1 cr)

Students in this course design and produce basic-level design projects. Projects are assigned, assessed at midpoint and critique when finished. The design process, technology and lab time for these projects are delivered in GRDSN 101, 102. Prerequisite: A COMPASS reading assessment score of 80 or above or an ASSET reading score of 40 or above and concurrent enrollment in GRDSN 101, 102, 105 or permission of instructor. (SFCC)

GRDSN 105 – Drawing for Graphic Designers (2 cr)

This course offers students an introduction to drawing as a graphic designer. Students learn to draw basic forms for thumbnails and roughs that can be applied to other graphic design courses. Techniques and tools for drawing shape, value, plane and volume are explored through gesture, contour and other drawing styles. Composition and drawing type are an integral part of the course. (SFCC)

GRDSN 109 – History of Design (4 cr)

This is a competency-based course that focuses on major design movements as they relate to visual communication. Beginning with the invention of writing and continuing to the present day key ideas, social/political/cultural developments and technologies are examined. Through observations and comparisons the course illustrates the relationships between various design disciplines. This course requires research, writing and presentation of exploring visual communications role in society and popular culture. Prerequisite: A Compass reading assessment score of 80 or above or an ASSET reading score of 40 or above. (SFCC)

GRDSN 111 – Design Process II (3 cr)

This course expands on the fundamentals of design, visual communication and conceptualization introduced in GRDSN 101. Students demonstrate skills at a higher level of performance. In addition to typography, color and composition, students are engaged in problem-solving and critical thinking activities in order to solve fundamental design problems. Students apply learned skills to the completion of more complex projects in GRDSN 113. Prerequisite: GRDSN 101, 102, 103 and concurrent enrollment in GRDSN 112, 113, 115 or permission of instructor. (SFCC)

GRDSN 112 – Design Technology II (3 cr)

This intermediate-level course focuses on the technology platform used in the design profession. Emphasis is on computer graphics software applications, type formatting and appropriate file construction. Students learn fundamental and intermediate software skills necessary to complete projects in GRDSN 113. In addition to page layout, drawing and software applications, students focus on fundamental photo manipulation and three-dimensional design software. Prerequisite: GRDSN 101, 102, 103 and concurrent enrollment in GRDSN 111, 113, 115 or permission of instructor. (SFCC)

GRDSN 113 – Design Projects II (1 cr)

In this course, students design and produce basic-level design projects with more complexity than in previous projects. Projects are assigned, assessed at midpoint and critiqued when finished. The design process, technology and lab time for these projects are delivered in GRDSN 111, 112. Prerequisite: GRDSN 101, 102, 103 and concurrent enrollment in GRDSN 111, 112, 115 or permission of instructor. (SFCC)

GRDSN 115 – Drawing for Communication (2 cr)

This course builds on the skills obtained in GRDSN 105. Students expand their knowledge on techniques for illustration, draw in perspective, and learn about the picture plane, theme building and visual analogy. Color and its effect on composition and the target market are explored. Professional hand skills for presentation are included. Prerequisite: GRDSN 105. (SFCC)

GRDSN 121 – Design Process III (3 cr)

In this course, the design process is applied to the print, web and multimedia industries. Students engage in intermediate-level design, communication, problem-solving and conceptualization activities. In addition to exploring strategies for communicating more complex information, students are engaged in creating concepts which communicate ideas with clarity, depth and uniqueness. This course addresses skills necessary to complete the projects in GRDSN 123. Prerequisite: GRDSN 101 or permission of instructor and concurrent enrollment in GRDSN 122, 123 or permission of instructor. (SFCC)

GRDSN 122 – Design Technology III (3 cr)

This course is a survey of design technology as it applies to the production of graphic work in print, web and multimedia. Emphasis is on file construction, file formats and software used in 2-D, 3-D and animated graphics. Students are introduced to the Postscript imaging process and HTML as well as web and multimedia authoring software. Students learn software skills necessary to complete projects in GRDSN 123. Prerequisite: GRDSN 102 or permission of instructor and concurrent enrollment in GRDSN 121, 123 or permission of instructor. (SFCC)

GRDSN 123 – Design Projects III (1 cr)

Students design and produce basic-level design projects with more complexity than GRDSN 113. Projects are assigned, assessed at midpoint and critiqued when finished. The design process, technology and lab time for these projects are delivered in GRDSN 121, 122. Prerequisite: GRDSN 103 or permission of instructor and concurrent enrollment in GRDSN 121, 122 or permission of instructor. (SFCC)

GRDSN 125 – Computer Drawing (2 cr)

This course builds on the skills obtained in GRDSN 105 and GRDSN 115. Students learn to execute drawings using vector and raster imaging often found as illustrations in print and web design. Software programs are used to show value, color and texture of subject matter. Use of an electronic pen tool is explored in place of the mouse to mimic traditional tools that show line quality and shading. In addition, students use a digital camera to produce photographs for compositions and learn how to show perspective through the software programs available. Prerequisite: GRDSN 105 and GRDSN 115 or permission of instructor. (SFCC)

GRDSN 126 – Web Production (2 cr)

This course is designed to explore the visual aspects of designing and implementing documents for the World Wide Web. It focuses on evaluating the aesthetics and readability of existing Web pages in order to formulate effective and appropriate approaches to design for new pages. Students create, scan and manipulate graphic images, as well as integrate final graphics files into effective page designs which are appropriate for web use. Prerequisite: GRDSN 158 or permission of instructor. (SFCC)

GRDSN 131 – Publication Design (1 cr)

This is an introductory course in publication design. In this course the basic principles of layout, typography, color and images are discussed. Industry terminology, job titles, and problem solving methods are introduced. This course contains page layout projects developed both on paper and through the use of computer software. Prerequisite: Assessment reading score of 40 or above, or instructor permission and concurrent enrollment in GRDSN 135 for 1 credit. (SFCC)

GRDSN 132 – Publication Production (2 cr)

This course is an introductory course to the technology used to produce printed publications with computer software. This course focuses on commercial printing workflow; layout, prepress file preparation, printing processes, and printing papers. The basic operation of computer applications, and management of digital images is emphasized. Prerequisite: Assessment reading score of 40 or above, or instructor permission and concurrent enrollment in GRDSN 135 for 2 credits. (SFCC)

GRDSN 133 – Graphic Reproduction (2 cr)

This is an intermediate level course in image manipulation and preparation for press reproduction. Focus is on adjusting, manipulating, compositing, and repairing images acquired by scanners and digital cameras. Adobe Photoshop is used to explore techniques for selection of image areas, masking, levels and curves controls, combination of layers and the use of painting tools. Emphasis is on correcting tones, colors for printed output and applying color management techniques to ensure repeatable color control. Prerequisite: GRDSN 132 and assessment reading score of 40 or above, or instructor permission. (SFCC)

GRDSN 135 – Print Production Laboratory I (1-5 cr)

This introductory course is designed to support the computer production of projects assigned in GRDSN 131 or 132. This is a learner-centered, open lab environment in which developing and demonstrating self-directed learning strategies are emphasized. This lab course is facilitated by graphic design faculty. May repeat for up to 5 credits. Prerequisite: Assessment reading score of 40 or above, or instructor permission. (SFCC)

GRDSN 137 – Print Production Laboratory III (1-5 cr)

This advanced course is designed to support the computer production of projects assigned in GRDSN 151 or 152. This is a learner-centered, open lab environment in which developing and demonstrating self-directed learning strategies are emphasized. This lab course is facilitated by graphic design faculty. May repeat for up to 5 credits. Prerequisite: Assessment reading score of 40 or above, or permission of instructor. (SFCC)

GRDSN 141 – Type and Layout (1 cr)

This is an intermediate level course in design and typography. This course contains reference materials, tutorial exercises and hands-on projects. Projects focus on visual organization, stylized information, and effective page layouts. Emphasis is on clearly communicating to an audience. Projects employ images, formatting styles, grid systems and design principles as methods of communicating with a clear organizational structure. Prerequisite: GRDSN 131 and assessment reading score of 40 or above, or instructor permission. (SFCC)

GRDSN 142 – Print Production (2 cr)

This is an intermediate level course in computer graphics and printing technology. Projects involve using industry-standard computer applications to create and edit pixel and vector images, create page layouts, and prepare files for printing. Emphasized are color management, printing technology, file preparation for multiple color printing, Acrobat PDF workflow, raster image processing, cross-application data exchange and file troubleshooting. Prerequisite: GRDSN 122. (SFCC)

GRDSN 151 – Typography and Design (1 cr)

This is an advanced course in publication design. The course focuses on text-intensive publications (newsletters, newspapers, corporate brochures, financial reports). Projects focus on design and typography skills to communicate complex information clearly and effectively. Layouts are enhanced with expressive use of color, images and printing techniques. Projects develop composition skills using industry-standard computer applications. Prerequisite: GRDSN 141 and assessment reading score of 40 or above, or permission of instructor and concurrent enrollment in GRDSN 137 for 1 credit. (SFCC)

GRDSN 152 – Prepress Production (2 cr)

This is an advanced level competency-based course in computer graphics and printing technology. Emphasis is on computer applications, color management, file preparation, paper specification, pre-press workflow, page imposition, proofing, trapping, PDF workflow, RIP technology, file automation, font and image management, emerging technology, and graphic markets. Requires concurrent enrollment in 2 credits of GRDSN 137. Prerequisite: GRDSN 133 and 142 and assessment reading score of 40 or above, or permission of instructor and concurrent enrollment in GRDSN 137 for 2 credits. (SFCC)

GRDSN 155 – FreeHand I (2 cr)

This is a self-paced, competency-based, introductory course to FreeHand software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to trace, draw and manipulate Bezier curves, and create illustrations. Students manipulate graphics and typographic forms to create final drawing compositions. Students also control and manipulate visual attributes and work with several color models to create, mix, and apply colors and tints. (SFCC)

GRDSN 156 – Illustrator I (2 cr)

This is a self-paced, competency-based, introductory course to illustrator software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to trace, draw and manipulate Bezier curves, and create illustrations. Students manipulate graphics and typographic forms to create final drawing compositions. Students also control and manipulate visual attributes and work with several color models to create, mix, and apply colors and tints. (SFCC)

GRDSN 157 – QuarkXPress I (2 cr)

This is a self-paced, competency-based, introductory course to QuarkXPress software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to integrate text and graphics in a variety of page layouts. Students apply fundamental typesetting skills to format a variety of text elements, including display type, text, captions and subheads. Students also work with color and manipulate placed graphics. (SFCC)

GRDSN 158 – PhotoShop I (2 cr)

This is a self-paced competency-based introductory course to PhotoShop software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to evaluate and control color characteristics of digitized photographic images. Students also combine and manipulate images to create unique photo composites, as well as work with several color models and a variety of file formats. (SFCC)

GRDSN 159 – Strata 3-D (2 cr)

This is a self-paced competency-based introductory course to Strata 3-D software for macintosh computers. Through reference materials, tutorial exercises and projects, students use tools and menu commands to create scenes with three-dimensional objects and text. Students create a variety of objects, backgrounds and environmental effects to render a scene. Textures, lighting and cameras also will be addressed. Rendered scenes will be suitable for use on the internet, multimedia presentations and in page layout design. (SFCC)

GRDSN 160 – Director (2 cr)

This is a self-paced, competency-based, introductory course to Director software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to create a movie (multimedia piece). Students import files created in other software programs, create text, and add sound and special effects. In addition, the students make a file interactive. The animated pieces will be suitable for use in multimedia design and CD ROM. (SFCC)

GRDSN 161 – Powerpoint (2 cr)

This course offers self-paced, competency-based, instruction in PowerPoint, a business presentation program for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to create a digital business presentation. Students import files created in other software programs, create text, and format a presentation appropriate for individuals or groups. (SFCC)

GRDSN 162 – Macintosh OS X (2 cr)

This is a self-paced, competency-based computer course designed to provide students with knowledge and hands-on experience with Macintosh Operating System Ten. Students receive information on functions such as the desktop, using Internet browsers, e-mail and printing. (SFCC)

GRDSN 163 – InDesign I (2 cr)

This self-paced competency based hands-on computer course provides students with knowledge and experience with the InDesign page layout program. The course includes working with documents, text, styles, tables, graphic elements, and color. (SFCC)

GRDSN 164 – Illustrator II (2 cr)

This is a self-paced, competency-based, advanced course for Adobe Illustrator software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands. They use advanced text techniques, selection techniques and transformation techniques to create vector drawings. They also learn to prepare graphics for the Web. (SFCC)

GRDSN 165 – QuarkXpress II (2 cr)

This is a self-paced, competency-based, advanced course in QuarkXPress software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tool and menu commands to structure layouts and work with text and graphics. Work with advanced text formatting and the application of style sheets will speed work. Managing workflow and output are covered. Also covered is working with lengthy documents. (SFCC)

GRDSN 166 – PhotoShop II (2 cr)

This course offers self-paced, competency-based, advanced instruction in PhotoShop software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to select color mode, correct color, apply masks and channels, create complex layers, retouch images, create patterns and textures, and add special effects. (SFCC)

GRDSN 167 – Fireworks (2 cr)

This self-paced competency based hands-on computer course provides students with knowledge and experience with the Fireworks Web design program. Students work with text, bitmaps, image retouching, layers, animated GIFs, navigation bars and pop-up menus. (SFCC)

GRDSN 168 – InDesign II (2 cr)

This self-paced competency based hands-on computer course provides students with knowledge and experience with the InDesign page layout program. The course includes working with long documents, multiple documents, advanced typesetting, managing output, PDF, and HTML. (SFCC)

GRDSN 169 – MS Word (2 cr)

This is a self-paced, competency-based introduction to Microsoft Word, a word processing program, and is oriented toward Macintosh computer users. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to create, format and edit text. Students work with tables, clip art, printing and merged letters. (SFCC)

GRDSN 170 – MS Excel (2 cr)

This is a self-paced, competency-based introduction to Microsoft Excel, a spreadsheet program, and is oriented toward Macintosh computer users. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to create and format spreadsheets for business and personal use. Students enter text, perform calculations, use functions, work with multipage documents and print results. (SFCC)

GRDSN 171 – Flash (2 cr)

This course offers a self-paced, competency-based introduction to flash software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to produce high impact, vector-based web sites. Students use Flash to create animations and interfaces, adding sound, motions and interactivity. (SFCC)

GRDSN 172 – Dreamweaver (2 cr)

This course offers a self-paced, competency-based introduction to Dreamweaver software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to create exciting web sites using HTML. Students also use design tools, and import and edit images and documents. (SFCC)

GRDSN 173 – Flash II (2 cr)

This is a self-paced competency-based course in Flash software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to create web animations that include sound and video. Students learn to apply behaviors to their animations. They also learn to use Flash with other applications such as Freehand, Photoshop and Fireworks. (SFCC)

GRDSN 174 – Dreamweaver II (2 cr)

This is a self-paced competency-based course in Dreamweaver software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to create cascading style sheets, JavaScript behaviors and animations. Students learn to manage a live web site. (SFCC)

GRDSN 175 – After Effects Flash II (2 cr)

This is a self-paced competency-based course in After Effects Flash software for Macintosh computers. Through reference materials, tutorial exercises and projects, students use software tools and menu commands to create, manipulate web animations that include sound and optimize motion graphics for film, video and the web. Students produce and apply behaviors to their animations, special effects and 3D layers. They use Flash with applications such as Freehand, Photoshop and Fireworks. (SFCC)

GRDSN 200 – Graphic Design Workshop (1-5 cr)

A course offered when unique opportunities or needs arise to instruct in areas not covered by existing courses and/or to quickly respond to changing conditions in the graphic design industry. (SFCC)

GRDSN 201 – Design Process IV (3 cr)

In this course, students compare the design process as it applies to a wide range of computer-generated imagery. Students engage in intermediate-level design, communication, problem solving and conceptualizing activities. GRDSN 101 and 111 address the skills necessary to complete the projects assigned in GRDSN 203. Prerequisite: GRDSN 121 or permission of instructor and concurrent enrollment in GRDSN 203, 204 or permission of instructor. (SFCC)

GRDSN 202 – Design Technology IV (3 cr)

Students explore the production aspects of realistic graphic design projects and the technical issues that develop within their own designs. In conjunction with GRDSN 203, students develop production techniques and solutions to various media. Prerequisite: GRDSN 122 or permission of instructor and concurrent enrollment in GRDSN 201, 203, 204 or permission of instructor. (SFCC)

GRDSN 203 – Design Projects IV (1 cr)

This course consists of intermediate-level design, industry-driven projects. Skills necessary to complete these projects are directly linked to GRDSN 201 and 202. Focus is on design principles which relate to various digital media applications. Prerequisite: GRDSN 123 or permission of instructor and concurrent enrollment in GRDSN 201, 204 or permission of instructor. (SFCC)

GRDSN 204 – Design Lab IV (2 cr)

Students perform the computer production of projects assigned in GRDSN 203. Focus is on demonstrating efficient and effective use of technology in the design production process. Students are assessed and graded on demonstrating self-directed learning, demonstrating effective time management and positive work ethic. This lab course is facilitated by graphic design faculty. Prerequisite: Permission of instructor and concurrent enrollment in GRDSN 201, 202, 203. (SFCC)

GRDSN 211 – Design Process V (3 cr)

Working with real-world design problems, students in this course apply their expertise in developing design solution for various media. Emphasis is on organizing information, typography and imagery to create clear, creative design solutions. Through problem-solving activities, students develop an increased awareness of graphic design principles and skills. Prerequisite: GRDSN 201, 202, 203, 204 or GRDSN 126, 238 or permission of instructor and concurrent enrollment in GRDSN 212, 213, 214 or permission of instructor. (SFCC)

GRDSN 212 – Design Technology V (3 cr)

A variety of technical and material processes driven by projects developed in GRDSN 213 are explored. This course strengthens the students' abilities to problem solve and develop technical solutions to various media production applications. Students use a variety of computer software applications which are determined by appropriate media delivery systems. Prerequisite: GRDSN 201, 202, 203, 204 or GRDSN 126, 238 or permission of instructor and concurrent enrollment in GRDSN 211, 213, 214 or permission of instructor. (SFCC)

GRDSN 213 – Design Projects V (1 cr)

From concept to final presentation, students in this course apply advanced-level design principles to real-world projects. Linked to GRDSN 211 and GRDSN 212, assignments require strong visual concepts. This course is designed to increase awareness of advanced graphic design projects. Prerequisite: GRDSN 201, 202, 203, 204 or GRDSN 126, 238 and concurrent enrollment in GRDSN 211, 212, 214 or permission of instructor. (SFCC)

GRDSN 214 – Design Lab V (2 cr)

Students perform the computer production of projects assigned in GRDSN 213. Scheduling and coordinating multiple tasks, as well as meeting deadlines, is emphasized. Students are assessed and graded on demonstrating self-directed learning, demonstrating effective time management and positive work ethic. This lab course is facilitated by graphic design faculty. Prerequisite: GRDSN 201, 202, 203, 204 or permission of the instructor and concurrent enrollment in GRDSN 211, 212, 213. (SFCC)

GRDSN 215 – Web Process V (3 cr)

Working with real-world design problems, students apply their expertise in developing design solutions for the web. Emphasis is on organizing information, typography and imagery to create clear, creative design solutions. Through problem-solving activities, students develop an increased awareness of web design principles and skills. Prerequisite: GRDSN 121, 122, 123 and concurrent enrollment in GRDSN 216, 217, 218. (SFCC)

GRDSN 216 – Web Technology V (3 cr)

A variety of technical and material processes driven by projects developed in GRDSN 217 are explored. This course strengthens the students' abilities to problem solve and develop technical solutions to various web production applications. Students use a variety of computer software applications which are determined by appropriate web delivery systems. Prerequisite: GRDSN 121, 122, 123 and concurrent enrollment in GRDSN 215, 217, 218. (SFCC)

GRDSN 217 – Web Projects V (1 cr)

From concept to final presentation, students in this course apply advanced-level design principles to real-world projects. Linked to GRDSN 215 and 218, assignments require strong visual concepts. This course is designed to increase awareness of advanced web design projects. Prerequisite: GRDSN 121, 122, 123 and concurrent enrollment in GRDSN 215, 216, 218. (SFCC)

GRDSN 218 – Web Lab V (2 cr)

Students perform the computer production of projects assigned in GRDSN 217. Scheduling and coordinating multiple tasks, as well as meeting deadlines, are emphasized. Students are assessed and graded on demonstrating self-directed learning, effective time management and a positive work ethic. Graphic design faculty facilitate this lab course. Prerequisite: GRDSN 121, 122, 123 and concurrent enrollment in GRDSN 215, 216, 217. (SFCC)

GRDSN 221 – Design Process VI (3 cr)

This course prepares students for entrance into the work force. Students address employment opportunities, self-assess projects and identify weak points in their portfolios in order to be more competitive when entering the job market. In addition to assembling a portfolio, students gain practice in job interviewing, resume preparation and professional job application procedures. Prerequisite: GRDSN 211 or permission of instructor and concurrent enrollment in GRDSN 223, 224 or permission of instructor. (SFCC)

GRDSN 223 – Design Projects VI (2 cr)

Students design and produce projects for their portfolios in this course. In addition, earlier student work is assessed and revised to bring it up to portfolio standards. Projects are assigned, assessed at mid point and critiqued when finished. The design process and lab time for these projects are delivered in GRDSN 221. Prerequisite: GRDSN 213 or permission of instructor and concurrent enrollment in GRDSN 221, 224 or permission of instructor. (SFCC)

GRDSN 224 – Design Lab VI (2 cr)

Students produce final design pieces to assemble into a portfolio. The focus of the lab activities is accelerating the work pace to meet the kinds of deadlines experienced in industry. Students are assessed and graded on demonstrating self-directed learning, demonstrating effective time management and positive work ethic. Prerequisite: GRDSN 214 or permission of instructor and concurrent enrollment in GRDSN 221, 223 or permission of instructor. (SFCC)

GRDSN 225 – Web Process VI (3 cr)

This course prepares students for entrance into the work force. Students address employment opportunities, self-assess projects and identify weak points in their portfolios in order to be competitive when entering the job market. In addition to assembling a portfolio, students gain practice in job interviewing, resume preparation and professional job application procedures. Prerequisite: GRDSN 215, 216, 217, 218 and concurrent enrollment in GRDSN 226, 227. (SFCC)

GRDSN 226 – Web Projects VI (2 cr)

Students design and produce projects for their portfolios in this course. In addition, earlier student work is assessed and revised to meet portfolio standards. Projects are assigned, assessed at midpoint and critiqued when finished. The design process and lab time for these projects are delivered in GRDSN 225 and 227. Prerequisite: GRDSN 215, 216, 217, 218 and concurrent enrollment in GRDSN 225, 227. (SFCC)

GRDSN 227 – Web Lab VI (2 cr)

Students produce final design pieces to assemble into a portfolio. The focus of the lab activities is accelerating the work pace to meet the kinds of deadlines experienced in industry. Students are assessed and graded on demonstrating self-directed learning, effective time management and a positive work ethic. Prerequisite: GRDSN 215, 216, 217, 218 and concurrent enrollment in GRDSN 225, 226. (SFCC)

GRDSN 231 – Advertising Design (4 cr)

In this course students study the operation of the advertising agency and its art department. Students become familiar with the roles of the creative director, art director, designer, account executive, copy writer, media buyer and production artist in an agency environment. Focus is on the concept, design and production of pieces for advertising media including newspaper, magazine, outdoor, television and the process of working within the structure of the creative advertising agency team. Conceptual work relies heavily on market research to help determine the client's need, market position, comparison to competitors, media and advertising budget. Students create concepts, write headlines and copy, produce ad layouts and comprehensives, and television storyboards. Students also gain experience in art directing other creative team members such as designers, photographers and illustrators, producing their own designs, photographs and illustrations. Prerequisite: GRDSN 201, 202, 203, 204. (SFCC)

GRDSN 232 – Perspective Drawing for Designers (3 cr)

This course familiarizes students with the principles of perspective and their practical applications. Students learn one-, two-, and three-point perspective by using the principles of geometry to develop spatial logic. Students apply learned procedure, technique and perspective theory to create illustrations that develop painting skills. Students apply perspective to produce precise product illustrations with the technical tools used by professionals. Each student creates a perspective notebook for future reference. Prerequisite: GRDSN 121, 122, 123. (SFCC)

GRDSN 235 – Multimedia Technology I (3 cr)

This course is a basic introduction to interactive media. Students learn basic design and technical skills necessary to create and combine graphics, text, sound, Quicktime movies and scripting in interactive pieces for use on a CD or the Internet. Emphasis is on organization and flow of information. Prerequisite: GRDSN 122 or permission of instructor. (SFCC)

GRDSN 236 – Multimedia Technology II (3 cr)

This is an intermediate-level course on interactive media. Students build on GRDSN 235 to learn more complex design and technical skills to create and combine graphics, text, sound, Quicktime movies and scripting in interactive pieces for use on a CD or the Internet. Emphasis is on organization and flow of information. Prerequisite: GRDSN 235 or permission of instructor. (SFCC)

GRDSN 237 – Multimedia Technology III (3 cr)

This is an advanced-level course on interactive media. Students learn complex design and technical skills to create and combine graphics, text, sound, Quicktime movies and scripting in interactive pieces for use on a CD or the Internet. Emphasis is on scripting interactivity and animation. Prerequisite: GRDSN 235, 236 or permission of instructor and concurrent enrollment in GRDSN 122. (SFCC)

GRDSN 238 – 3-D Modeling and Animation I (3 cr)

This course is a basic introduction to the field of three-dimensional modeling and animation. Students learn to create simple three-dimensional objects on the computer and animate them as Quicktime movies. Emphasis is on the analysis of perspective, three-dimensional space, lighting, cameras and texture mapping. (SFCC)

GRDSN 239 – 3-D Modeling and Animation II (3 cr)

This is an intermediate-level course in three-dimensional modeling and animation. Students learn to create more complex three-dimensional objects on the computer and animate them as Quicktime or VRML movies. Emphasis is on intricate lighting, camera and texture creation techniques. Prerequisite: GRDSN 238 or permission of instructor. (SFCC)

GRDSN 240 – 3-D Modeling and Animation III (3 cr)

This is an advanced-level course in three-dimensional modeling and animation. Students learn to create complex three-dimensional objects on the computer and animate them as Quicktime or VRML movies. Prerequisite: GRDSN 239 or permission of instructor. (SFCC)

GRDSN 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

GRDSN 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

GRDSN 277 – Illustration Workshop (4 cr)

One third of this course is spent investigating the possibilities of full-color graphic illustration and creating an illustration in that style. The remaining two-thirds of the class emphasizes encouraging students to develop an individual style and choosing media appropriate to the solution of a given problem. Students use visual and conceptual skills in their own work problem-solving process. Professionalism and the study of contemporary illustrators and their work are very important. The work produced in this class make strong portfolio pieces. Prerequisite: GRDSN 201, 202, 203 or permission of instructor. (SFCC)

GUIDANCE**GUID 100 – College Orientation (1-2 cr)**

This course is designed to assist the incoming student make the transition to college life. It provides a number of tools necessary to succeed in college - resources, processes and procedures, career exploration and information, assertiveness training and college survival skills - as well as explain the many services and activities open to all students. (SCC, SFCC)

GUID 101 – Career Planning (2-5 cr)

This course incorporates aptitude, interest, personality and motivational surveys with classroom activities to promote self-awareness. Analysis of the organization of the working world and use of research materials is combined with decision-making skills to aid the student in the selection of a career. Course content varies depending on the number of credits chosen. (SCC, SFCC)

HEALTH**HLTH 101 – Health and Wellness (3 cr)**

Course encompasses a total wellness concept of one's physical, mental and emotional well-being. Students examine major health issues of contemporary society. Students also learn to make responsible lifestyle decisions that directly affect their quality of life and attainment of well-being. (SCC, SFCC)

HLTH 104 – Stress Management (3 cr)

Students learn techniques and strategies to manage and evaluate stress. Consequences of stress to physical and mental health are emphasized. Techniques of bio-feedback and relaxation responses are covered, as well as wellness lifestyle development. General applications for physiological arousal and behavior-change interventions are covered. (SCC, SFCC)

HLTH 174 – First Aid (3 cr)

Principles, theory and skills of standard first aid and safety which prepare students to make appropriate decisions regarding first aid care and to act on those decisions. American Red Cross cards are available upon successful completion of this course. (SCC, SFCC)

HEALTH EDUCATION**HED 101 – Nutrition (3 cr)**

Students learn basic nutrition including life cycle needs, nutrient sources and functions, food preferences and customs. (SCC)

HED 102 – Survey of Health Careers (2 cr)

Students gather information regarding selected health careers by interacting with health professionals active in the field, visiting sites to observe the application of their career choice, making informed decisions regarding their personal choice of health career based on aptitude and interest, and expressing values and feelings leading to their career choice. (SCC)

HED 103 – Steps to Success in Health Careers (4 cr)

This course provides students with a key to understanding the necessary components for success in a health career introducing various options available with emphasis on necessary abilities to assure success in the education aspects of the profession. Strategies to build professional attitudes, self esteem, ethical behavior and communications skills are presented. (SCC)

HED 108 – Human Anatomy (5 cr)

Students study the structure of the human body systems: Integumentary, special senses, skeletal, muscular, respiratory, hemopoietic, cardiovascular, lymphatic, digestive, urinary, reproductive, endocrine and nervous systems. (SCC)

HED 109 – Human Physiology and Disease (5 cr)

Students study functions, related conditions and diseases of body systems. Prerequisite: HED 108 or permission of instructor. (SCC)

HED 110 – Health Care Delivery Systems (3 cr)

This course provides a broad concept of how health care is organized, financed and delivered in the U.S. Students study interrelationships of facilities, agencies, health organizations and hospitals. The role of the government is the regulation of health care is emphasized. (SCC)

HED 121 – Cultural Diversity in Health Care (1 cr)

This course provides a foundation for applications of cultural concepts in the health care setting. Considerations are given to the impact of biopsychosocial, ethical, legal, spiritual and cultural influences on the need to promote, maintain and restore health of the client/family unit. Prerequisite: Permission of instructor or concurrent enrollment in a health care program. (SCC)

HED 125 – Medical Terminology (5 cr)

This course introduces the roots, prefixes and suffixes comprising the structure of medical terms associated with all body systems with emphasis on medical eponyms, abbreviations and the correct spelling of all terms. (SCC)

HED 126 – Introduction to Study of Disease (3 cr)

This course introduces the concepts associated to the cause of disease, inflammation and repair, burns, infection, genetics, organs of special sense and neoplasia. Diagnostic tests and procedures related to the identification of the disease process are included. Prerequisite: BIOL& 241, 242 and HED 125 or HED 108. (SCC)

HED 130 – Positive Image Building (2 cr)

Students discuss concepts and participate in exercises relating to self-esteem building, effective goal setting, constructive interpersonal communication. They apply these concepts toward maximizing personal potential and self-health maintenance. (SCC)

HED 132 – Ethics and Professionalism in Health (2 cr)

Students develop intrapersonal and interpersonal communication skills for use in their professional health care roles. The ability to use judgments in ethical and moral decisions in health, stress management and interviewing skills as they relate to professional practice for selling oneself, and maintaining employer-employee relationships are emphasized. (SCC)

HEALTH INFORMATION TECHNOLOGY**HIT 101 – Health Record Systems (5 cr)**

Students are introduced to health records and health record personnel. The study of development, content and format of acute care record systems is emphasized. Students conduct quantitative and qualitative analysis of records according to standards. Acute care hospital-based systems and the role of admission services in initiation of records are addressed. Application of computer systems in a database, analysis of record content and record management are presented. (SCC)

HIT 104 – Introduction to Health Information (3 cr)

Students are introduced to the health information field, health professions and the medical field. The value of health information and terminology, facility organization, regulatory agencies, and the roles and functions of health information personnel are emphasized. (SCC)

HIT 105 – Legal Concepts in Health (3 cr)

This interdisciplinary health records course emphasizes the health record as a legal document. Confidential communication policies and procedures, release of information, consent and state and federal law pertaining to health are presented. Forms of liability, preparation of records for court responses and to subpoenas are emphasized. Students research laws, current and proposed health legislation, and contemporary legal issues. (SCC)

HIT 125 – Medical Terminology (5 cr)

Students learn the roots, prefixes and suffixes comprising the structure of medical terms associated with all body systems. Medical eponyms, abbreviations and correct spelling of all terms are emphasized. (SCC)

HIT 129 – Pathophysiology (5 cr)

Students study various disease causing processes exerting an effect on normal physiological function of musculoskeletal, respiratory, circulatory, digestive, urinary and nervous systems; neoplasia and immunology. Diagnostic tests and procedures utilized for these pathophysiological problems are presented, and appropriate treatment is discussed. Prerequisite: HIT 125 or permission of instructor. (SCC)

HIT 135 – Comparative Record Systems (4 cr)

Record systems in all types of nonacute health care settings are presented including ambulatory care, home health, hospice, mental health and long-term care. Regulatory issues, documentation requirements and information management issues unique to each setting are discussed. Prerequisite: HIT 101. (SCC)

HIT 145 – Pharmacology (3 cr)

Drug classifications, apothecary and metric systems of measurement, medications by brand name and generic terms, and use of PDR and hospital formularies are addressed in this course. (SCC)

HIT 160 – Computer Theory in Health Information (3 cr)

Computer theories specific to the field of health information are introduced in this course. Confidential communication policies and procedures, release of information consent, and state and federal law pertaining to health are presented. Forms of liability, preparation of records for court and responses to subpoenas are emphasized. Students research laws, current and proposed health legislation, and contemporary legal issues. (SCC)

HIT 161 – Health Management Information Systems (3 cr)

This course is a continuation of the concepts introduced in HIT 160. Emphasis is on the use of tasks, steps and domains frequently used in the software programs currently used in the medical industry. Prerequisite: HIT 160 or permission of instructor. (SCC)

HIT 162 – Electronic Health Record: Meditech (3 cr)

This course is a continuation of the concepts introduced in HIT 160 and 161. Emphasis is on advanced special functions such as non-central databases and sorting and statistical functions using electronic health records software. Students will obtain a certificate of completion in the following meditech modules: Order Entry, Order Management, Patient Care Inquiry, Admitting, and Medical Records. Prerequisite: HIT 161 or permission of instructor. (SCC)

HIT 203 – Clinical Practice (1-3 cr)

This clinical practicum provides actual on-site practice in skills required in medical coding, chart analysis and basic medical record proficiency. Students apply skills practiced in the directed practice lab while integrating knowledge with application. Prerequisite: Second-year health information technology student and concurrent enrollment in HIT 212. (SCC)

HIT 208 – Health Information Management (5 cr)

Students learn management of health data, special registries and indexes, data quality, and the uses of aggregate data. They study abstracting systems, current regulations that govern prospective payment and health care financing. The role of regulatory agencies is included, and the dynamics of change in the health information environment is presented. Contemporary topics in health information management are discussed. Prerequisite: HIT 212 and concurrent enrollment in HIT 211. (SCC)

HIT 209 – Health Data Analysis and Display (5 cr)

Students learn the principles in collection, computation, presentation and analysis of health data by working with simulated applications of data collection principles by data abstracting using computerized health information systems. Presentation and analysis of data using computer applications are addressed. Prerequisite: Completion of all first-year requirements. (SCC)

HIT 211 – Quality Improvement (4 cr)

Students learn principles and procedures pertaining to utilization management, quality assurance and improvement, credentialing and risk management. Knowledge and skills necessary to apply the principles in assessing the quality of patient care are emphasized. Research and simulation are used to acquaint students with quality assurance principles and methods. Selected classification systems are addressed. Prerequisite: Completion of all first-year requirements and concurrent enrollment in HIT 208. (SCC)

HIT 212 – Acute Care Coding (5 cr)

Students study theory and application of the current edition of the ICD (International Classification of Disease) authorized for use in the US. Students code utilizing charts and participate in lab exercises. Assignment of diagnosis-related groups and computerized endcoding and grouping are presented using practical computer applications to perform these tasks. Prerequisite: Completion of all first-year requirements or permission of instructor. (SCC)

HIT 213 – Clinical Practice (6 cr)

This supervised, clinical practicum provides students experience in area hospitals, skilled nursing facilities and other health care facilities and agencies. Students work under supervision of facility personnel or the instructor and perform all learned skills in an actual clinical setting. Prerequisite: Clinical status: Final quarter and concurrent enrollment in HIT 240, 250. (SCC)

HIT 214 – Ambulatory Care Coding (5 cr)

Ambulatory coding systems currently in use are utilized in this course. Health Care Financing Administration rules and procedures are emphasized, incorporating Medicare changes and other third-party payers. Current reimbursement methodologies in ambulatory care are presented. Prerequisite: HIT 101, 129, 145, 212 or permission of instructor. (SCC)

HIT 216 – Reimbursement Strategies for HIM Professionals (5 cr)

This course introduces students to a variety of claims processes and procedures, and health care payers. Career roles and responsibilities and employment opportunities also are covered. (SCC)

HIT 218 – Advanced Medical Coding (5 cr)

Students practice using ICD-9-CM (International Classification of Diseases, 9th Edition, Clinical Modification) and CPT (Current Procedural Terminology) by coding inpatient and outpatient source documents and charts. Students learn the implications of DRGs (Diagnostic Related Groups) and APCs (Ambulatory Payment Classifications) and their relationship to coding assignment and finances. The content of this course explains the purpose of manual and computer indexes. Theory and practice in coding problem-solving, data quality control and use of the computer encoder are emphasized. Prerequisite: HIT 212, 214. (SCC)

HIT 240 – HIT Clinical Seminar (2 cr)

In this follow-up seminar of supervised clinical experience, students discuss and report on clinical topics, use of work skills and all aspects of working in the field. Prerequisite: Concurrent enrollment in HIT 213. (SCC)

HIT 250 – Management and Supervision in Health Organizations (3 cr)

Students learn supervisory management theories and techniques. Organizing, directing, motivating, controlling, staffing, evaluating and problem-solving functions are emphasized. The allied health practitioner's role at the midmanagement level is presented. Prerequisite: HIT program students or permission of instructor. (SCC)

HIT 251 – Leadership Applications in Health Information Management (2 cr)

Students develop critical thinking skills in leadership and supervision in health information management in this application-level course. Conflict management, communication skills, inservice education methods and the impact of EEO legislation are emphasized. Analyzing work flow and conducting performance appraisals are addressed. Prerequisite: HIT 208, 250 and concurrent enrollment in HIT 213, 240. (SCC)

HEALTH RECORD CLERK**HRC 101 – Health Record Systems (5 cr)**

Students are introduced to health records and health record personnel. The study of development, content and format of acute care record systems is emphasized. Students conduct quantitative and qualitative analysis of records according to standards. Acute care hospital-based systems and the role of admission services in initiation of records are addressed. Application of computer systems in a database, analysis of record content and record management are presented. (SCC)

HRC 104 – Introduction to Health Information (3 cr)

Students are introduced to the health information field, health professions and the medical field. The value of health information and terminology, facility organization, regulatory agencies, and the roles and functions of health information personnel are emphasized. (SCC)

HRC 105 – Legal Concepts in Health (3 cr)

This interdisciplinary health records course emphasizes the health record as a legal document. Confidential communication policies and procedures, release of information, consent and state and federal law pertaining to health are presented. Forms of liability, preparation of records for court responses and to subpoenas are emphasized. Students research laws, current and proposed health legislation, and contemporary legal issues. (SCC)

HRC 108 – Human Anatomy (5 cr)

Students study the structure of the human body including integumentary, special senses, skeletal, muscular, respiratory, hemopoietic, cardiovascular, lymphatic, digestive, urinary, reproductive, endocrine and nervous systems. (SCC)

HRC 125 – Medical Terminology (5 cr)

Students learn the roots, prefixes and suffixes comprising the structure of medical terms associated with all body systems. Medical eponyms, abbreviations and correct spelling of all terms are emphasized. (SCC)

HRC 126 – Introduction to Study of Disease (3 cr)

Students study basic disease concepts relating to the cause of disease, inflammation and repair, burns, infections, genetics, organs of special sense, and neoplasia. Diagnostic tests and procedures related to the identification of the disease process are presented. Prerequisite: Completion of HRC 108 or 125. (SCC)

HRC 135 – Comparative Record Systems (4 cr)

Record systems in all types of nonacute health care settings are presented including ambulatory care, home health, hospice, mental health and long-term care. Regulatory issues, documentation requirements and information management issues unique to each setting are discussed. Prerequisite: HRC 101. (SCC)

HRC 145 – Pharmacology (3 cr)

Drug classifications, apothecary and metric systems of measurement, medications by brand name and generic terms, and use of PDR and hospital formularies are addressed in this course. (SCC)

HRC 150 – Health Record Clerk Directed Practice (3 cr)

This course includes a clinical seminar to prepare students for clinical practice in the work environment and directed clinical practice in a health care setting. Students learn job-readiness skills, professionalism, work ethic, leadership training, and safety and occupational health. Directed practice provides practical application of classroom coursework. Prerequisite: Successful completion of first- and second-quarter classes with a 2.0 grade or better. (SCC)

HEALTH UNIT COORDINATOR**HUC 101 – Health Record Systems (5 cr)**

Students are introduced to health records and health record personnel. The study of development, content and format of acute care record systems is emphasized. Students conduct quantitative and qualitative analysis of records according to standards. Acute care hospital-based systems and the role of admission services in initiation of records are addressed. Application of computer systems in a database, analysis of record content and record management are presented. (SCC)

HUC 104 – Introduction to Health Information (3 cr)

Students are introduced to the health information field, health professions and the medical field. The value of health information and terminology, facility organization, regulatory agencies, and the roles and functions of health information personnel are emphasized. (SCC)

HUC 105 – Legal Concepts in Health (3 cr)

This interdisciplinary health records course emphasizes the health record as a legal document. Confidential communication policies and procedures, release of information, consent and state and federal law pertaining to health are presented. Forms of liability, preparation of records for court responses and to subpoenas are emphasized. Students research laws, current and proposed health legislation, and contemporary legal issues. (SCC)

HUC 108 – Human Anatomy (5 cr)

Students study basic disease concepts relating to the cause of disease, inflammation and repair, burns, infections, genetics, organs of special sense, and neoplasia. Diagnostic tests and procedures related to the identification of the disease process are presented. (SCC)

HUC 120 – Introduction to Health Unit Coordinator Procedures (2 cr)

Health unit coordinator students are introduced to the nursing unit. Professionalism in the working environment is emphasized. Supplies for patient care and computer language required to implement diagnostic testing are addressed. (SCC)

HUC 125 – Medical Terminology (5 cr)

Students learn the roots, prefixes and suffixes comprising the structure of medical terms associated with all body systems. Medical eponyms, abbreviations and correct spelling of all terms are emphasized. (SCC)

HUC 126 – Introduction to Study of Disease (3 cr)

Students study basic disease concepts relating to the cause of disease, inflammation and repair, burns, infections, genetics, organs of special sense, and neoplasia. Diagnostic tests and procedures related to the identification of the disease process are presented. Prerequisite: Completion of HED 108 or 125. (SCC)

HUC 127 – Health Unit Coordinator Procedures (5 cr)

This course is a supervised application of unit coordinator procedures emphasizing transcription of orders and pharmacology. Students learn nursing unit procedures and transcription of orders. They enter HUC 152 during the quarter and must complete this course with a 2.0 grade or better. Prerequisite: Completion of first two quarters. (SCC)

HUC 145 – Pharmacology (3 cr)

Drug classifications, apothecary and metric systems of measurement, medications by brand name and generic terms, and use of PDR and hospital formularies are addressed in this course. (SCC)

HUC 152 – Unit Coordinator Practicum (3 cr)

Students apply skills learned in HUC 127 in a supervised, acute-care clinical rotation. Each student is assigned to a nursing unit under the supervision of a health unit coordinator or nurse manager. Prerequisite: HUC 127. (SCC)

HUC 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

HUC 267 – Cooperative Education Work Experience (1-18 cr)

For course description see Cooperative Education. (SCC)

HEALTH/FITNESS TECHNICIAN**FMT 106 – Anatomical and Physiological Kinesiology (5 cr)**

A core course to the fitness management curriculum; a study of the structural and functional components of human movement. Special attention is given to the analysis of movement problems. (SFCC)

FMT 111 – Physiology of Exercise (5 cr)

This course explores the range and ability of the human body. Areas of study include brain-body connections; physiological responses of the lungs and heart to exercise; and effects of drugs, hormones and environment on human performance. The training effects of exercise, fatigue, as well as general fitness brought about by regular exercise. In addition, the acute and chronic adaptations to training at altitude will be explored. (SFCC)

FMT 112 – Exercise and Aging (3 cr)

The senior and older adult population is fast becoming the largest segment of the fitness industry. Fitness professionals need to be aware of the aspects of exercise prescription unique to the older client. This course analyzes the physiological characteristics of the older adult that apply to exercise program development. The course examines physical limitations such as balance, strength, flexibility, disease, osteoporosis and the effects of certain medications. There is a combination of lecture and lab hours designed to develop "hands-on" knowledge of exercise technique, as well as exercise theory. (SFCC)

FMT 115 – Leadership Dynamics (3 cr)

This course is designed to study concepts involved in developing leadership traits: When leaders are at their best, what followers expect, and how to enlist others and foster collaboration. In addition, this course studies communication and how it applies to leadership and job-related skills. (SFCC)

FMT 119 – Principles of Strength Training (5 cr)

This course explores the scientific principles involved with increasing human strength. The skeletal muscles and joints are studied. All forms of isotonic and isometric exercise are taught. Effects of nutrition, fatigue and exercise on the muscular system is analyzed. (SFCC)

FMT 204 – Health Appraisal and Exercise Prescription (5 cr)

This course incorporates current fitness industry standards with regards to appropriate assessment techniques, i.e., participant screening, health appraisal, health history, physical assessments, determination of risk factors and lifestyle patterns. Following the comprehensive health/fitness appraisal, techniques for exercise prescription and programming are developed. Components of exercise prescription are incorporated, which include goal setting, strength programming, cardiovascular programming, flexibility, nutrition guidance and behavior modification. Feedback and evaluation methods are developed. (SFCC)

FMT 209 – Exercise and the Cardiovascular System (3 cr)

This course is designed for physical education, health science and fitness management technician majors who have desire to gain basic knowledge of the cardiovascular system at rest, in response to exercise and major disease states. The evaluation of risk factors, fundamentals of electrocardiography, exercise testing techniques, clinical management of major disease states and rehabilitation are discussed. (SFCC)

FMT 219 – Injury Prevention and Rehabilitation (5 cr)

Course is designed to provide the basic knowledge and skills that aid in the prevention and rehabilitation of injuries common in athletic and recreational activities. (SFCC)

See program/course abbreviation key on page 143.

FMT 225 – Personal Training (5 cr)

This course enables students to recommend and develop safe exercise routines based on the following processes: 1) health screening, 2) fitness assessments, 3) client goals, 4) client motivation, 5) re-evaluation and 6) education. Students become competent in fitness testing protocols, proper exercise technique, nutrition for weight loss and sports performance; as well as legal, ethical and professional standards currently followed in the fitness industry. Students are prepared to take The American Council on Exercise Personal Trainer Certification exam. (SFCC)

FMT 230 – Therapeutic Massage (3 cr)

Introduces the student to basic techniques of massage. Includes therapeutic applications for sport, stress and clinical practices. Effects of hydrotherapy are covered and the Washington State Massage Act--18.108 RCW is discussed. (SFCC)

HEARING INSTRUMENT SPECIALIST**HIS 101 – Basic Hearing Instrument Sciences (4 cr)**

This course defines, describes and identifies the physical processes of sound and sound amplification. Students in this course discover and learn the development of contemporary hearing instruments from a historical perspective. Students also demonstrate knowledge of hearing instrument components and logically communicate the expected benefits and limitations of various instruments. (SFCC)

HIS 104 – Hearing Physiology and Anatomy (4 cr)

This course describes the function and identifies the structures of the human ear and hearing. Students demonstrate through class discussion and written assignments knowledge of ear physiology and anatomy. (SFCC)

HIS 106 – Healthcare and Business Ethics (4 cr)

In this class students relate and discuss the ethical issues surrounding the performance of their work as hearing instrument specialists. Students consider and then offer ethical solutions to a variety of possible challenges in their industry. (SFCC)

HIS 123 – Basic Audiometrics (5 cr)

In this course students demonstrate the ability to perform standard air, bone and speech audiometry. The students also display competent performance of video-otoscopy and patient testing instruction. Student perform the normal record keeping chores of this testing. Prerequisite: HIS 104, 106 or permission of instructor. (SFCC)

HIS 125 – Auditory Disorders (4 cr)

Students in this class describe and define the otologic conditions affecting hearing. Students also identify otologic red flags that require referral to medical physicians and other healthcare specialists. Prerequisite: HIS 104, 106 or permission of instructor. (SFCC)

HIS 127 – Hearing Healthcare Management I (4 cr)

Students in this course describe, outline and practice the wide-range skills and competencies necessary in the management of a typical hearing healthcare office's business operations. Prerequisite: HIS 104, 106 or permission of instructor. (SFCC)

HIS 134 – Advanced Audiometrics (5 cr)

Students practice and demonstrate competency in the more advanced diagnostic tests used in the industry. Students in this class will perform tympanometry, otoacoustic emission testing, and complete audiometric evaluations. Students show competence in both handwritten and computer-based recording of test results. Prerequisite: HIS 104, 106, 123 and permission of instructor. (SFCC)

HIS 136 – Hearing Instrument Technologies (4 cr)

This course prepares the student to work with the current technologies used in the hearing instrument industry. Students identify patients and audiological conditions that would benefit from specific circuits, matrices and instrument options. In this course students discuss advanced issues surrounding analog and digital amplification technologies. Prerequisite: Permission of instructor. (SFCC)

HIS 138 – Ear Couplers and Assistive Technologies (5 cr)

This course defines, describes and identifies the functional uses of different types of earmolds, shells and assistive listening devices (ALDs). Students practice taking impressions and modifying earmolds and shells for which they've made impressions. Students demonstrate the correct use of several commonly used ALDs. Ordering and record keeping activities are also practiced. Prerequisite: HIS 104, 106 and permission of instructor. (SFCC)

HIS 201 – Hearing Healthcare Management II (4 cr)

Students describe, outline and practice the wide range skills and competencies necessary in the management of a typical hearing healthcare office's products and services. Prerequisite: Permission of instructor. (SFCC)

HIS 205 – Introduction to Speech-Language Pathology and Audiology (5 cr)

Students explain and write an overview of deficits of speech, language and hearing, and the role of the speech-language pathologist and audiologist. Students also develop a referral protocol to these specialists for their patients. Prerequisite: HIS 104, 106 and permission of instructor. (SFCC)

HIS 206 – Hearing Instrument Specialist Laboratory I (4 cr)

In this course students practice connected activities involved in fitting and dispensing hearing instruments, including: Taking impressions, ordering earmolds/hearing instruments, performing quality control checks of incoming inventory, preprogramming analog and digital hearing instruments, performing real ear acoustic measurement and completing a variety of test box verifications. Ordering and record keeping activities are also practiced. Students develop good communication and problem-solving skills. Prerequisite: HIS 104, 106 and permission of instructor. (SFCC)

HIS 210 – Clinical Methods I (5 cr)

In this course students practice all skills associated with the provision of hearing healthcare services from the first patient contact to the final hearing instrument checkup. Prerequisite: HIS 104, 106 or permission of instructor. (SFCC)

HIS 213 – Marketing/Sales (4 cr)

Students identify, describe and define those elements that an effective marketing campaign should include. Students develop a marketing plan for a typical hearing instrument office. Students also define, practice and demonstrate skills necessary to increase patient compliance with purchase recommendations. Prerequisite: HIS 104, 106 or permission of instructor. (SFCC)

HIS 215 – Hearing Instrument Specialist Laboratory II (5 cr)

In this course students practice connected activities involved in fitting and dispensing hearing instruments including taking impressions, ordering earmolds/ hearing instruments, performing quality control checks of incoming inventory, pre-programming analog/digital hearing instruments, troubleshooting malfunctioning instruments, and adjusting instruments for better fit and performance. Ordering and record keeping activities also are practiced. Students develop good communication and problem-solving skills. Prerequisite: HIS 104, 106 or permission of instructor. (SFCC)

HIS 222 – Clinical Methods II (6 cr)

In this course students practice all skills associated with the provision of hearing healthcare services from the first patient contact to the final hearing instrument checkup. Prerequisite: HIS 104, 106 or permission of instructor. (SFCC)

HIS 250 – Perspectives on Disabilities (4 cr)

Students learn to approach their patient recommendations and treatments showing careful consideration of those historical, international, socioeconomic, ethical, personal and age-related perspectives that may influence treatment outcomes. Students modify their perspectives on disability, individual choices, societal values and social responsibilities to provide the best care to all patients. Prerequisite: HIS 104, 106 or permission of instructor. (SFCC)

HIS 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

HIS 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION**AIRC 113 – Math for HVAC Technicians (5 cr)**

This course is a review of basic math fundamentals starting with whole numbers and proceeding to formula manipulation. Math material is presented in a practical format. (SCC)

AIRC 114 – Principles of Electricity (8 cr)

Students learn the theory of electricity including Ohm's Law, the identification of circuit types and the proper use of test equipment. The development of safe working habits while wiring a gas furnace and performing basic trouble shooting are emphasized. (SCC)

AIRC 115 – HVAC Electrical Applications (7 cr)

Students acquire skills for using test meters, ladder diagrams and basic thermostat controls for heating and cooling systems. Students also demonstrate new skills by developing wiring diagrams for an electric furnace with a condensing unit and installing all the necessary controls and wiring for an operational unit. Basic electrical troubleshooting is performed on the system. (SCC)

AIRC 117 – Theory of Heat Transfer (4 cr)

Students explore basic concepts and applications of force, energy, fluids and heat as applied to refrigeration and air conditioning. Topics include energy, heating and air conditioning equipment, thermal heat properties, basic refrigeration cycles, test equipment, and tools of the trade. (SCC)

AIRC 125 – Sheet Metal Layout and Fabrication (5 cr)

This course introduces the theory and practical application in sheet metal practices. The use of shop equipment and fabrication methods provides student with the essential skills and techniques in layout and fabrication of frequently used air duct fittings. (SCC)

AIRC 128 – Fundamentals of Heating and Mechanical Systems (8 cr)

This course introduces the fundamentals of heating with forced-air fuel gas burning appliances. Other fuel gas appliances are introduced, and the combustion process, as it relates to heating equipment, is explored. Gas codes are introduced with proper venting and piping techniques. Sequence of operation and troubleshooting are emphasized. (SCC)

AIRC 137 – Heating Systems Servicing and Troubleshooting (7 cr)

This course offers training and experience with heating equipment. Students are introduced to the basic controls and control systems found on most HVAC heating systems. Electrical and mechanical functions of the individual components and their relationship to a complete system are emphasized. Lab exercises include hands-on training with electrical systems, capacity testing, mechanical and electrical troubleshooting, and service of residential and light commercial units. (SCC)

AIRC 201 – Refrigeration Fundamentals (8 cr)

This course introduces the theories of refrigeration and provides students with the fundamentals of physical and chemical laws governing the principles of the refrigeration cycle. Basic refrigeration cycles and components are covered. Applications include brazing techniques and electrical controls. (SCC)

AIRC 202 – Thermodynamics of Refrigeration (8 cr)

This course is a continuation of AIRC 201 and provides students with the fundamentals of air conditioning systems and the application of the Mollier Diagram and thermodynamics. Emphasis on practical applications includes basic refrigeration troubleshooting and the use of testing equipment and tools. Lab exercises focus on developing ladder diagrams and troubleshooting electrical components. Prerequisite: AIRC 201. (SCC)

AIRC 230 – Advanced Sheet Metal (Special Fittings & Procedures) (4 cr)

Advanced fitting layout and fabrication. (SCC)

AIRC 231 – Residential Energy Analysis (8 cr)

Evaluation of the Heat Gain Loss of a dwelling and providing information to reduce the cost of heating/cooling. (SCC)

AIRC 232 – International Fuel Gas Codes (6 cr)

This course introduces international and local codes covering the installation and servicing of fuel gas appliances with inputs under 400,000 BTU/H. Special attention is given to the local interpretation of these codes and the appliances and associated systems inspection process. (SCC)

AIRC 233 – NEC for HVAC 06A (6 cr)

This course discusses the general requirements, methods and procedures for HVAC wiring. Hazardous conditions are explored and WAC and RCW codes are introduced. (SCC)

AIRC 246 – HVAC Load Calculations (4 cr)

This course includes the study of heat gain and loss in forced-air systems (heating and cooling). Complete heat loss and heat gain calculations are performed manually, and an air distribution system is designed. Students study energy estimating methods and design systems for a building. Students examine current federal, state and local codes and standards (set forth by ASHRAE) as they apply to HVAC systems. Implementation and air systems instrumentation are explored in lab sessions. (SCC)

AIRC 247 – Oil Heating Systems (4 cr)

This course is an introduction to residential oil heating. Topics include mechanical and electrical operations, and codes of oil heating systems. Laboratory work covers testing, adjusting and troubleshooting electrical and mechanical problems on oil-fired systems. Prerequisite: Permission of instructor. (SCC)

AIRC 249 – Hydronic Heating Systems (7 cr)

Students study basic hydronic heat systems. Topics include mechanical and electrical operations, control systems and codes of hydronic heating systems. Laboratory work covers testing, adjusting and troubleshooting electrical and mechanical problems on hydronic systems. (SCC)

AIRC 255 – Installation Practices (7 cr)

This course introduces students to procedures used in the installation of a complete residential central heating, ventilation and air conditioning system. Previously learned theories and associated application opportunities are utilized on a live project. Proper installation of components and use of hand tools is emphasized. Prerequisite: Permission of instructor. (SCC)

AIRC 262 – Control Theory and Automation (7 cr)

This course introduces the fundamentals of control theory and application. Students set up and run an economizer system, use a psychrometric chart, learn common terms of basic direct digital controls (DDC), interface basic controls with computers, and program thermostats with both computer and command displays. (SCC)

AIRC 263 – System Servicing and Troubleshooting of Air Conditioners (7 cr)

Students are exposed to troubleshooting fundamentals, concentrating on the operation and analysis of AC systems and control circuits. Testing operations of capillary tubes and TVX systems are emphasized. Problem-solving methods and mechanical systems troubleshooting also are covered. Testing, adjusting and troubleshooting of electrical and mechanical problems are covered in lab exercises. Prerequisite: Concurrent enrollment in AIRC 202. (SCC)

AIRC 264 – System Servicing and Troubleshooting of Heat Pumps (7 cr)

This course offers training and experience with mechanical air conditioning equipment used in comfort cooling and heat pump applications. Lab exercises include hands-on training with electrical systems, capacity testing, and mechanical and electrical troubleshooting of residential and light commercial heat pumps. Students learn to install and start up a system in a residence. Refrigeration transition and recovery certification are included. Prerequisite: AIRC 201, 202. (SCC)

AIRC 265 – Direct Digital Control Systems (8 cr)

This course provides advanced programming and networking applications. Students set up and program various components of a direct digital control (DDC) system. All components are tied to the building manager and the system is monitored for proper operation. Students learn to use the computer to troubleshoot the system. External equipment is connected to the system for programming and monitoring. (SCC)

AIRC 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

AIRC 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

AIRC 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

HISTORY**HIST 110 – British Life and Culture (5 cr)**

British life and culture is an interdisciplinary course designed to give students a broad overview of British culture and civilization. It takes a social, historical and cultural approach to contemporary British society. This course includes lectures given by adjunct British faculty, supporting seminars and related field trips to such places as the Museum of London, the Globe Theatre, the National Gallery and the House of Parliament. Note: Credit may not be earned for both HUMAN 205 and HIST 110. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

HIST& 116 – Western Civilization I (5 cr)

The major political, social and economic developments of pre-Hellenic, Greek, Roman and medieval history in terms of their contribution to Western civilization. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

HIST& 117 – Western Civilization II (5 cr)

European man from the feudal period through the French Revolution and the Napoleonic period. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

HIST& 118 – Western Civilization III (5 cr)

The development of Western civilization from the French Revolution to the present. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

HIST& 136 – US History I (5 cr)

The historical development of the American people from the beginning of European contact to the end of the Civil War with emphasis on the indigenous peoples, the Colonial period, independence, the Constitution, the early Republic and the sectional crisis. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

HIST& 137 – US History 2 (5 cr)

The development of the United States from the end of the Civil War to the present; emphasis on both the understanding and evaluation of basic historical materials. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

HIST 141 – History of China (5 cr)

Preparation for advanced-level courses in Chinese civilization; an understanding of the people of China, their traditions, development and histories. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

HIST 142 – History of Japan (5 cr)

Preparation for advanced-level courses in Japanese history; an understanding of the people of Japan, their traditions, development and histories. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

HIST& 214 – Pacific NW History (5 cr)

The exploration, settlement and growth of the political, economic and social institutions of Washington and the Pacific Northwest; includes the study of local and state government and environmental problems in the state of Washington. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

HIST& 219 – Native American History (5 cr)

This introductory course includes an analysis of early North American Indian history pre-colonization, colonization, and post colonization with a chronology and emphasis on the events and developments of the indigenous peoples who inhabited this country from the period of European contact through the end of the 20th century. (SCC, SFCC)

HIST 222 – Canadian History (5 cr)

A survey of Canadian history from the founding of French America in the 16th century, through the 19th century Confederation era, culminating with the significant developments and events of the 20th century. (SCC)

HIST 230 – Latin American History (5 cr)

A survey of Latin American history from the Colonial era through the Independence period, culminating with the economic, social, and political developments and significant events of the 20th century. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

HIST 237 – History of Australasia: Australia and New Zealand (5 cr)

Examines the history of the Australasian nations of Australia and New Zealand about 1,200 years ago, through the long and often difficult process of becoming the modern island nations of Australia and New Zealand. Attention is given to the various groups that have migrated to Australasia, exploration and colonization of the area, development of settlements and colonial governments, the move toward nationhood, and emergence of the modern nations of Australia and New Zealand in the 20th Century. Prerequisite: College-level reading and writing skills recommended (SFCC)

HIST 240 – History of Modern Middle East (5 cr)

This course prepares students for advanced-level courses in Middle Eastern studies. The time period primarily covered the modern developments from the ottoman period to the present, with an emphasis placed on understanding the peoples of the Middle East, their traditions and histories. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40, ENGL&102 advised. (SCC, SFCC)

HIST 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

HIST 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

HOTEL AND RESTAURANT MANAGEMENT**HM 110 – Introduction to Hospitality (5 cr)**

This course introduces students to the basic principles of public hospitality. The history of the industry, organizational methods, employment opportunities and problems facing the hospitality industry are presented. (SCC)

HM 111 – Seminar - Hotel/Restaurant/Tourism (2 cr)

Students study recent trends and business factors that affect the hospitality/tourism industry. Various components of hotel/restaurant/tourism are emphasized. (SCC)

HM 112 – Hospitality Mathematics (3 cr)

This course introduces the concepts of mathematics relating to the hospitality field. Liquid and dry measurements, percentages, and the metric system are introduced. Recipe costing, portion control, contraction and expansion of recipes and formulas, and yield analysis of food products are calculated. (SCC)

HM 115 – Food Sanitation (3 cr)

This course introduces students to the basic principles of sanitation and their significance in food service. Implementing sanitary procedures and programs in the kitchen is emphasized. A national certification exam is given at the conclusion of the course. (SCC)

HM 116 – Nutrition for Chefs and Restaurant Managers (3 cr)

This course introduces students to the characteristics, functions, and food sources of major nutrients and how to maximize nutrient retention in food preparation and storage. Digestion, energy needs, recommended daily allowances and dietary guidelines are emphasized. Prerequisite: HM 115 or concurrent enrollment. (SCC)

HM 124 – Cooking Applications I (4 cr)

This course emphasizes working with raw materials, preliminary cooking and flavoring, and preparing for a variety of cooking methods. (SCC)

HM 126 – Food Science (5 cr)

This course emphasizes basic cooking methods including the preparation of soups; stocks and sauces, meat, fish and poultry; vegetables, fruits and starches; as well as an introduction to breakfast and baking preparation. Prerequisite: Permission of instructor or counselor. (SCC)

HM 130 – Human Relations (5 cr)

Students are introduced to the basic principles of human behavior and their application in developing positive working relationships. (SCC)

HM 131 – A la Carte Service (9 cr)

This course addresses theory and practical applications in the methods used to provide exceptional a la carte service at a variety of functions. (SCC)

HM 141 – Maintenance and Engineering (5 cr)

Students are introduced to the basic technical knowledge required to establish preventive maintenance procedures for hotel/restaurant facilities. (SCC)

HM 150 – Basic Foods (5 cr)

Students study theory and practical applications in the production of quality foods in quantity. (SCC)

HM 151 – Restaurant Management (3 cr)

Students are introduced to the food and beverage operation of hotels and motels. (SCC)

HM 153 – Restaurant Service (2 cr)

Students are introduced to the operation of a typical restaurant in a lab setting. Practical aspects of restaurant service are emphasized. Prerequisite: Concurrent enrollment in HM 151. (SCC)

HM 155 – Hospitality Purchasing (2 cr)

Students are introduced to the procedures for purchasing foods in quantity with emphasis on the selection and procurement methods utilized in the hospitality industry. (SCC)

HM 156 – Beverage Management (3 cr)

This comprehensive course addresses all aspects of operating a beverage service for profit. Planning equipment and staff, purchasing, budgeting, inventory management, and marketing are emphasized. Product identification, alcohol awareness, basic bartending procedures, and state and local regulations governing the industry are presented. Receiving a Washington State Class 12 and Class 13 license is included in the course material. (SCC)

HM 160 – Supervisory Housekeeping (3 cr)

Students are introduced to the fundamentals of housekeeping management, recordkeeping and executive responsibilities. Employee training methods are emphasized. (SCC)

HM 202 – Front Office Procedures (5 cr)

Students are introduced to the essential routines addressing all aspects of front office procedures. Registration and reservation processes, rules and regulations and their application to the hotel-motel industry, and ethics and general strategies used when dealing with the public are emphasized. Prerequisite: CIS 110. (SCC)

HM 205 – Hotel/Restaurant Law (5 cr)

Students are introduced to the basic principles of law as it pertains to the operation of hotels and motels. Legal liability, conventional and sales contracts, statutory law, and innkeeper and guest responsibilities are emphasized. (SCC)

HM 208 – Hotel Sales and Marketing (5 cr)

Students are introduced to the fundamentals of hotel/restaurant sales promotion, publicity, advertising, finances and other marketing skills. Advertising and marketing strategies are emphasized. Prerequisite: CIS 110, HM 130. (SCC)

HM 220 – Tourism and the Hospitality Industry (5 cr)

Students are introduced to package tourism arrangements, economics of tourism, and marketing strategies and their relationship to the industry. Prerequisite: CIS 110, HM 130. (SCC)

HM 232 – Hotel/Restaurant Management Principles (5 cr)

Students are introduced to the principles of hotel/restaurant management and their relationship to the overall management of facilities and personnel in the industry. Development of supervisory skills and coaching techniques to improve employee performance is emphasized. Prerequisite: CIS 110 and HM 130. (SCC)

HM 255 – Menu Planning (3 cr)

Students are introduced to the composition of menus, and includes purchasing procedures, merchandising, servicing and pricing of foods. Planning a functional, operative menu using appropriate menu copy and layout is emphasized. Prerequisite: Permission of the instructor or counselor. (SCC)

HM 265 – Hospitality Cost Controls (5 cr)

This course introduces the principles and procedures involved in an effective system of food, labor and sales income control. The development and use of standards and the calculation of actual costs are emphasized. (SCC)

HM 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

HM 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

HM 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

HUMAN SERVICES**HS 102 – Introduction to Human Services (5 cr)**

This course is an introduction to human services. Included are current services, merits and shortcomings of current services, and new programs that are needed to meet service gaps and shortcomings. (SFCC)

HS 105 – Child Abuse (5 cr)

The focus of the course explores the phenomena of child abuse from the perspective of the family. From this perspective, the class examines risk factors that predispose families toward child abuse and neglect. The class delves into the legal and psychological issues of physical abuse, physical neglect, psychological maltreatment and sexual abuse. The class will highlight approaches to prevention. (SFCC)

HS 115 – Social Policy (5 cr)

An introductory course that is policy-oriented. It attempts to instill systematic habits of analysis and inquiry that will increase the student's awareness and objectivity. The focus is on current issues and problems in social work. (SFCC)

HS 131 – Human Services Seminar I (1-5 cr)

This course acquaints students with various people-helping skills applicable to a variety of social service settings in the community. Designed to fill emerging needs prior to the development of a regular course or to fill one-time training needs. This course may be repeated for up to 10 credits. (SCC, SFCC)

HS 132 – Human Services Seminar II (1-5 cr)

This course acquaints students with various people-helping skills applicable to a variety of social service settings in the community. Designed to fill emerging needs prior to the development of a regular course or to fill one-time training needs. This course may be repeated for up to 10 credits. (SCC, SFCC)

HS 136 – Improving Interpersonal Communication (5 cr)

Designed to help people live more effectively through improved communication skills. Study, awareness and practice of these skills will enhance students' effectiveness in beginning, maintaining and ending relationships. Students will gain skills in managing controversy, stress and anger. The course is a balance between theory and practice of the skills and concepts involved in becoming an effective communicator. (SFCC)

HS 150 – Foster Care (1-5 cr)

A comprehensive parenting course designed specifically for foster parents. It is taught in a relaxed, friendly manner that allows for maximum interaction enabling foster parents to get answers to their day-to-day questions. Specific topics covered include building the child's self-concept, human growth and development, awareness of culture needs, and permanency. Special attention is given to issues of discipline and modifying children's behavior. Working with the child welfare system, and dealing with stress and burnout also are explored. (SFCC)

HS 151 – Independent Living Readiness Training (3 cr)

To prepare foster parents and social service staff to assist the adolescent who lacks the support of a stable family environment in making the transition to living independently. The three main objectives are to increase ability to assess youth's willingness and ability to prepare for independence; to increase skills in promoting the readiness of youth for independent living; and to increase knowledge and familiarity of community resources. Prerequisite: HS 150. (SFCC)

HS 221 – Treatment Theories in Human Services (5 cr)

This course covers concepts, theories and practices regarding social work treatment. It focuses on the constructs, underlying principles, theories, practices and desired outcomes of several contemporary treatment modalities. Prerequisite: HSSUB 176/second year standing. (SFCC)

HS 238 – Group Effectiveness Training (5 cr)

Provides students with understandings of and experiences in group interaction. Concepts to be explored include group content and process, leadership styles, and how to begin, maintain and analyze functional groups. Prerequisite: HS 136 or permission of instructor. (SFCC)

HS 277 – Human Sexual Development (3 cr)

This course is designed to familiarize students with the various aspects of human development. Included are units pertaining to maleness and femaleness reproductive anatomies, hormonal influences, sexuality and communication, dysmenorrhea, P.M.S., pregnancy and birth, family planning, abortion, rape, incest, homosexuality, AIDS, STDs-VD, and responsible sexual expression. Open to all students. (SFCC)

HS 281 – Practicum I (5 cr)

Students in the human services programs are placed in a practicum setting where they have an opportunity to observe and to work with people in a human service setting. Each student is individually placed in accordance with his/her career direction. Placements are made in areas such as gerontology, social work, education, early childhood education, special education and hearing impaired. Individual student conferences are arranged to facilitate the total experience. (SFCC)

HS 282 – Practicum II (5 cr)

Students in the human services programs are placed in a practicum setting where they have an opportunity to observe and to work with people in a human service setting. Each student is individually placed in accordance with his/her career direction. Placements are made in areas such as gerontology, social work, education, early childhood education, special education and hearing impaired. Individual student conferences are arranged to facilitate the total experience. (SFCC)

HS 283 – Practicum III (5 cr)

Students in the human services programs are placed in a practicum setting where they have an opportunity to observe and to work with people in a human service setting. Each student is individually placed in accordance with his/her career direction. Placements are made in areas such as gerontology, social work, education, early childhood education, special education and hearing impaired. Individual student conferences are arranged to facilitate the total experience. (SFCC)

HUMANITIES**HUM& 101 – Intro to Humanities (5 cr)**

This is an interdisciplinary program introducing students to the humanities through the arts-music, drama, poetry, movies, dance and the visual arts. In addition to an understanding of the basic elements and principles of the arts, each student perceives the role of the arts in society, the range of creative expression and what is involved in the creative process. Participation involves a variety of learning experiences including attendance at campus and community arts events, group discussion, multimedia instructional units and personal creative expression. Students may purchase tickets for a wide variety of offerings such as Civic Theatre, Spokane Symphony Orchestra, movies, etc., in lieu of a textbook. (SCC, SFCC)

HUM 102 – Introduction to Women's Studies (5 cr)

This course explores issues relating to women including but not limited to women's history, women's work and the socialization of women. Additionally, this course examines some of the differences between women and men, with the hope that through descriptive study, female and male students become empowered in new ways. In part, this goal encourages an in-depth look at the social structures and dominant dialogues that have posed limits upon both women and men while encouraging the search for removing such limits. (SCC, SFCC, IEL)

HUM 107 – Introduction to Cultural Studies (5 cr)

This course introduces students to the practice of analyzing American popular culture in its various forms, from films, advertisements and music to the habits and practices that characterize everyday life in the United States. Students learn to “read” popular culture using a wide range of interdisciplinary perspectives and theories, in particular those that emphasize how class, gender, sexuality, nationality and race are represented in cultural texts. Students discuss how these representations shape cultural beliefs and attitudes. Prerequisite: ENGL& 101 or permission of instructor. SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

HUM 141 – Introduction to Film (5 cr)

This course is a basic introduction to how films communicate meaning and influence society. The course gives the students an understanding of film forms, techniques and styles. Students develop a critical viewpoint and be able to explain the many ways in which film communicates. The overall goal of the course is to produce perceptive and sensitive film viewers. Feature-length films are viewed in class. Prerequisite: SFCC only: Recommended minimum reading placement scores: COMPASS 80, ASSET 40. (SCC, SFCC)

HUM 201 – Humanities, Past, Present, and Future (5 cr)

An interdisciplinary class introducing students to the human quest for the meaning of life. Students will analyze literature, philosophy, music, history, and the visual arts of the past and present and then create future scenarios for themselves and societies. In addition to lecture presentations, students have assigned reading, elective reading and writing assignments weekly. Each student will also have a special humanities project. (SCC)

HUM 205 – British Life and Culture (5 cr)

British life and culture is an interdisciplinary course designed to give students a broad overview of British culture and civilization. It takes a social, historical and cultural approach to contemporary British society. This course includes lectures given by adjunct British faculty, supporting seminars and related field trips to such places as the Museum of London, the Globe Theatre, the National Gallery and the House of Parliament. This course is offered only in England for SFCC students registered in the Washington Community College Consortium for Study Abroad in London Program. Note: Credit may not be earned for both HUM 205 and HIST 110. (SFCC)

HUM 207 – Basic Movie Making Techniques (5 cr)

This course is designed to acquaint the student with the three basic phases of movie making and emphasizes the directorial and storytelling functions of the media. Prerequisite: HUM 141 or permission of instructor. (SCC)

HUM 221 – Great Directors (5 cr)

This course is designed for students interested in exploring the films, styles and themes of great film directors--American and international. Students study four American directors, four international directors and one independent director. The directors and films studied vary each quarter. In addition, each student researches and studies films of one director of his/her choice. (SCC, SFCC)

HUM 222 – American Film Classics (5 cr)

American classic films, through the 1990s, are viewed and discussed in order to appreciate the evolution of the technical art of the cinema and to analyze how film content is a social barometer of the period of time in which it was produced. Full-length feature classics such as “Birth of a Nation” and “Citizen Kane” are studied. (SFCC)

HUM 223 – Classic International Cinema (5 cr)

An overview of the history of international cinema as art rather than as a commercial product. Major national film stylistic developments and movements are studied by viewing representative feature length films including classics such as Einstein’s *Potemkin*, De Soca’s *The Bicycle Thief* and Kurosawa’s *Ran*. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

HUM 224 – Contemporary Global Cinema (5 cr)

This course is a study of people of different national, ethnic and racial backgrounds via a review of current international cinema. Emphasis is placed on exploring economic, social and political issues. Feature length films will be viewed in class, including Zhang Yomou’s *Story of Qiu Ju*, Nihita Mikhailkov’s *Burnt by the Sun* and Gregory Nava’s *Mi Familia*. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

HUM 225 – Independent Film (5 cr)

This course is for students interested in exploring films made outside of the studio system, usually on low budgets and often exploring themes, values and subject matter which are highly personal and intense in nature including themes which mainstream cinema finds uninteresting, offensive or not likely to produce a profitable product. (SCC, SFCC)

HUM 236 – The Documentary Film (5 cr)

A course designed to explore, analyze and interpret the documentary as an aesthetic form; a device to document human experience; and a vehicle of social change. Students explore the historical perspective of the documentary as well as examine the tradition of film techniques that affect the reality and “truth” depicted through the genre. Prerequisite: SFCC only: Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

HUM 241 – The Impact of the Nazi Past (5 cr)

This course is designed for students interested in the history of Germany’s Nazi past. Students examine the depiction of national socialism and racism in important German language films by significant European film directors from the 1950s to the present. Class discussion encourages a comparative perspective that draws connections to the issues of nationalism and racism in Germany and the U.S. today. The course is taught in English, and all films have English subtitles. (SFCC)

HUM 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

HUM 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

HUM 295 – Special Topics in Humanities (1-5 cr)

A team-taught interdisciplinary class. Specific content and focus vary from quarter to quarter according to designation and credits filed in advanced of each scheduling. Students participate in a variety of learning experiences such as lectures, seminars, panel discussions, etc., all of which explore selected issues from the following areas: Philosophy, music, art history, film, drama, literature or the history of ideas. (SCC, SFCC)

HUM 296 – Special Topics in Humanities (1-5 cr)

A team-taught interdisciplinary class. Specific content and focus vary from quarter to quarter according to designation and credits filed in advanced of each scheduling. Students participate in a variety of learning experiences such as lectures, seminars, panel discussions, etc., all of which explore selected issues from the following areas: Philosophy, music, art history, film, drama, literature or the history of ideas. (SCC, SFCC)

HUM 297 – Special Topics in Humanities (1-5 cr)

A team-taught interdisciplinary class. Specific content and focus vary from quarter to quarter according to designation and credits filed in advanced of each scheduling. Students participate in a variety of learning experiences such as lectures, seminars, panel discussions, etc., all of which explore selected issues from the following areas: Philosophy, music, art history, film, drama, literature or the history of ideas. (SCC, SFCC)

HYDRAULIC AND PNEUMATIC AUTOMATION TECHNICIAN**FLPT 111 – Hydraulic Calculations (5 cr)**

This course is a review of basic algebra skills and procedures required for setting up and solving fluid power problems. Mathematical formulas required to calculate oil pressure, actuator forces and speed, oil flow and velocities required for fluid line sizing are emphasized. The use of force and speed requirements of a machine to set up the hydraulic system calculations required for determining oil flow, oil pressure and the input horsepower is stressed. Prerequisite: Concurrent enrollment in FLPT 112, 113, 114. (SCC)

FLPT 112 – Hydraulic Basics and Theory (5 cr)

This course introduces basic laws related to oil hydraulics and their practical applications to hydraulic component operation by changing either oil flow or pressure. Students relate the hydraulic component to the corresponding ANSI fluid power symbol and study hydraulic schematics for automated machinery identifying each component and its application and effect on the total system. Industrial plants and machine manufacturers who build machinery using industrial hydraulic components are studied in the classroom. Prerequisite: Concurrent enrollment in FLPT 111, 113, 114. (SCC)

FLPT 113 – Blueprint Reading (4 cr)

Students are introduced to the basic construction of automated machinery including the various types of materials, fasteners, and welding and machining operations used to fabricate machine parts from mechanical drawings. Machining tolerance, finishes, parts dimensioning, welding symbols, and the types of details, sections and views used on typical mechanical drawings are presented. Prerequisite: Concurrent enrollment in FLPT 111, 112, 114. (SCC)

FLPT 114 – Basic Hydraulics Lab (2 cr)

This course offers practical applications in the study of oil flow and pressure and their relationship to component operation. Students learn to read hydraulic schematics for automated machinery. Prerequisite: Concurrent enrollment in FLPT 111, 112, 113. (SCC)

FLPT 121 – Pneumatic Theory (6 cr)

This course introduces basic laws related to compressed air and their application in air compressors, plant air, piping, and sizing pneumatic components. Mathematical formulas and setup procedures for calculations required in pneumatic systems and the production of schematic drawings for pneumatic power and control circuits are included. Prerequisite: Concurrent enrollment in FLPT 122, 123. (SCC)

FLPT 122 – Drawing Fundamentals (3 cr)

This course introduces basic sketching and lettering emphasizing orthographic and isometric drawing styles. The layout and dimensioning of shop mechanical drawings are presented. Prerequisite: Concurrent enrollment in FLPT 121, 123. (SCC)

FLPT 123 – Machine Controls (7 cr)

Students study the interfacing of mechanical, hydraulics, pneumatics with electrical, electronic or pneumatic controls for predetermined sequence of operation for automated machines. Reading and drawing the electrical schematics used to control solenoid valves for hydraulic or pneumatic actuators; terminology and symbols used in programming schematics for an Allen Bradley Mini PLC 2 programmable controller; interpreting symbols required for reading air logic pneumatic schematics used for machine controls; and writing machine sequence of operations to match schematic operations are emphasized. Prerequisite: Concurrent enrollment in FLPT 121, 122. (SCC)

FLPT 131 – Hydraulic Systems (6 cr)

This course is a detailed study of five basic hydraulic systems and their applications to powering production machinery. Basic systems, hydraulic components and their working relationship which is controlled by their location, and piping arrangement in the overall system are emphasized. Prerequisite: FLPT 111, 112, 121 and concurrent enrollment in FLPT 132, 133, 134, 135. (SCC)

FLPT 132 – Fluid Line Fabrication (2 cr)

This course offers practical applications in fluid conductor fabrication emphasizing the safe and accurate operating procedures required in the setup and use of specialized tools. Fabricating procedures include cutting and threading pipe; cutting, bending and flaring tubing; cutting hydraulic hoses; and assembling permanent and reusable hose ends. Prerequisite: FLPT 112, 121 and concurrent enrollment in FLPT 131, 133, 134, 135. (SCC)

FLPT 133 – Fluid Line Connectors (5 cr)

Students study the three basic types of fluid lines and the fittings required to install them in a hydraulic system. Fluid line construction, materials used, manufacturing tolerances, quality control, specifications for purchasing, pressure limitations and oil flow characteristics based on I.D. are covered. Fitting identification, description and manufacturer part numbers are used to acquaint students with high pressure, low pressure and vacuum applications. Prerequisite: FLPT 112, 121 and concurrent enrollment in FLPT 131, 132, 134, 135. (SCC)

FLPT 134 – Shop Drawing (2 cr)

Students are introduced to drawing and lettering skills required to produce drawings of parallel bars, directional valve templates, and pump and motor mounting brackets. Prerequisite: FLPT 112, 121 and concurrent enrollment in FLPT 131, 132, 133, 135. (SCC)

FLPT 135 – Fluid Line Sizing Calculations (2 cr)

This course deals with specific calculations required in the study of fluid lines to size fluid lines in hydraulic systems. Prerequisite: FLPT 112, 121 and concurrent enrollment in FLPT 131, 132, 133, 134. (SCC)

FLPT 136 – Applied Hydraulics/Pneumatics (2-5 cr)

This course introduces to the basics of fluid power and its application to various programs. Hydraulic and pneumatic systems operation and their relationship to electrical, electronic or pneumatic control systems are emphasized. The course is offered for variable credits to meet the needs of various programs. (SCC)

FLPT 201 – Fluid Power/Pneumatic Math (3 cr)

This course introduces the use of pneumatics to enrich and extend the teaching of applied math and science concepts in junior and senior high schools. (SCC)

FLPT 230 – Advanced Pneumatics Theory (3 cr)

Students learn energy and air consumption; pneumatic automation components; pneumatic system design and vacuum system and applications. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 231, 232, 233, 234. (SCC)

FLPT 231 – Advanced Pneumatics Lab (2 cr)

Students learn energy and air consumption; pneumatic automation components; pneumatic system design and vacuum system and applications. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 231, 232, 233, 234. (SCC)

FLPT 232 – Mechanical Drive Systems Theory (3 cr)

Students learn the Mechanical Drive System servo and stepper motor drives; lead screw technologies; variable speed drives and drive controls. Prerequisite: FLPT 231 and concurrent enrollment in FLPT 231, 232, 233, 234. (SCC)

FLPT 233 – Mechanical Drive Systems Lab (3 cr)

Students learn the Mechanical Drive System servo and stepper motor drives; lead screw technologies; variable speed drives and drive controls. Prerequisite: FLPT 232 and concurrent enrollment in FLPT 231, 232, 233, 234. (SCC)

FLPT 234 – Velocity and Load Calculations (1 cr)

This course content relates to load velocities and kinetic energy; moment load calculations and force requirements. Prerequisite: FLPT 233 and concurrent enrollment in FLPT 230, 231, 232, 233. (SCC)

FLPT 241 – Fluid Power Shop Theory (5 cr)

Students learn to setup and use basic shop tools required to machine hydraulic manifolds, fabricate power units and overhaul hydraulic components. Shop terminology, tool identification, and the proper use and care of precision layout and measuring tools are included. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 242, 243, 244. (SCC)

FLPT 242 – Machine Tool Operation (7 cr)

Students learn shop layout procedures and skills by using shop drawings completed in the third quarter. They develop practical skills required to sharpen drill bits, lathe tools, milling cutters and removing broken taps, safely operate cut-off and band saws, drill presses, lathes, milling machines, and surface grinders while completing required shop projects. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 241, 243, 244. (SCC)

FLPT 243 – Advanced Machine Controls (4 cr)

This course is a study of the advantages of programmable logic controllers (PLC) over relay logic machine control. Students learn the advantages of machine control available when using data manipulation features in PLC programming. Converting relay logic electrical schematic drawings to PLC schematics, developing a PLC program from a specific machine sequence of operation, programming the PLC and verifying the program on a machine simulator board wired to the PLC are emphasized. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 241, 242, 244. (SCC)

FLPT 244 – Machine Feed and Speed Calculations (1 cr)

This course deals with specific calculations required for the proper operation of drills, lathes and milling machines used in the hydraulics and pneumatic industry. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 241, 242, 243. (SCC)

FLPT 251 – Hydraulic Circuits (4 cr)

Students learn the principles of circuits, components and fluid line sizing. Estimating costs for materials is introduced. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 252, 253, 254. (SCC)

FLPT 252 – Hydraulic Component Repair (6 cr)

Students learn shop procedures for hydraulic and pneumatic component disassembly, inspection, repair and testing using prepared lab sheets and manufacturers' parts sheets. Safe use of hand tools and the importance of cleanliness in the work area are emphasized. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 251, 253, 254. (SCC)

FLPT 253 – Fluid Line Layout and Assembly (2 cr)

This course introduces basic procedures required for the layout and assembly of pipe and pipe fittings to fit a specific component arrangement. The fabrication of fluid lines to fit existing tube fittings that meet or exceed the manufacturers' pressure test specifications is emphasized. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 251, 252, 254. (SCC)

FLPT 254 – Advanced Hydraulics Lab (3 cr)

This course offers practical applications in the creation of hydraulic circuits emphasizing calculations, selection of components and sizing fluid lines. Costing out materials is presented. Prerequisite: FLPT 131 and concurrent enrollment in FLPT 251, 252, 253. (SCC)

FLPT 261 – Hydraulic Component Testing (6 cr)

Students learn safe operating procedures required to set up and test rebuilt hydraulic components. Comparison of flow data at various pressures on open and closed hydraulic pump circuits is emphasized. Prerequisite: FLPT 251 and concurrent enrollment in FLPT 262, 263. (SCC)

FLPT 262 – Machining Hydraulic Manifolds (5 cr)

This course offers theory and practical applications to the layout and machining procedures required to make hydraulic manifolds. Specialized procedures including the use of cartridge valve tooling, subplate valve layout templates and straight threat "O" ring port tooling are emphasized. Prerequisite: FLPT 251 and concurrent enrollment in FLPT 261, 263. (SCC)

See program/course abbreviation key on page 143.

FLPT 263 – Power Unit Fabrication (3 cr)

Students study various power unit designs using pictures, slides, drawings and bill of materials. Shop work may include the setup and demonstration of the five basic power units. Depending upon the availability of equipment and materials, the rebuilding or fabrication of new power units may be introduced. Prerequisite: FLPT 251 and concurrent enrollment in FLPT 261, 262. (SCC)

FLPT 264 – Fluid Power Computer Applications (4 cr)

Students are introduced to various computer applications used in the fluid power industry. Students learn basic AutoCad commands and procedures used to create schematics using specialized symbol menus. They become proficient in the use of Automation Studio, a fluid power simulation program, to design and troubleshoot circuits. In addition, students learn to develop a hydraulic engineering calculations worksheet using Excel and to use manufacturers' CDs for design and engineering specifications. Prerequisite: Successful completion of first year or permission of instructor. (SCC)

FLPT 265 – Hydraulic Circuit Design (3 cr)

This course offers practical shop experience in the construction of a hydraulic circuit design from an automated machine specification. Prerequisite: FLPT 251 and concurrent enrollment in FLPT 268, 269. (SCC)

FLPT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

FLPT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

FLPT 268 – Fluid Power Application and Sales (5 cr)

This course introduces controlled selling techniques required for successful fluid power sales. Computerized inventory control methods are included. Prerequisite: FLPT 251 and concurrent enrollment in FLPT 265, 269. (SCC)

FLPT 269 – Hydraulic Manifold Design (3 cr)

This course offers theory and practical lab experience in the identification of important controlling factors necessary to specify a custom made hydraulic manifold. Students learn to generate a series of manifold drawings using component layout techniques and AutoCad. Prerequisite: FLPT 251 and concurrent enrollment in FLPT 265, 268. (SCC)

FLPT 271 – Pneumatic Theory (2-5 cr)

This course introduces basic pneumatic (compressed air) theory, identification of components in a pneumatic system, and basic circuit design and troubleshooting. (SCC)

FLPT 272 – Pneumatic Math and Symbols (2-4 cr)

This course introduces basic pneumatic theory and the interpretation of pneumatic symbols and diagrams. Related mathematics for calculating flow, pressure and volume is presented. (SCC)

FLPT 273 – Hydraulic Theory (2-5 cr)

This course introduces basic hydraulic theory. Students learn to identify and apply components in a hydraulic system. (SCC)

FLPT 274 – Applied Hydraulics (2-4 cr)

This course offers practical application and interpretation of hydraulic circuits emphasizing the drawing and interpretation of circuits using proper schematic symbols. (SCC)

FLPT 275 – AC/DC Electronic Control (8 cr)

This course introduces fluid power students to basic electronics. A broad range of topics including safety, tools and test equipment, soldering techniques, wave forms, Ohm's and Kirchhoff's laws are emphasized. Passive devices, such as resistors, capacitors, inductors and transformers are included. (SCC)

FLPT 277 – Digital Electronic Control (6 cr)

Students study principles and techniques of modern digital control systems. A block diagram approach is used to teach the basic logic operations before introducing the electrical characteristics of logic ICs. This knowledge of a logic block's input and output characteristics allows students to "fit" it properly into a complete system. (SCC)

FLPT 279 – Proportional Valves (4 cr)

Students are introduced to the use of proportional valves to accurately position, accelerate and decelerate actuators. Precise mechanical positioning of the valve spool and the interfacing of an electronic sensor to indicate spool position is emphasized. The effect of infinite spool positioning on oil pressure and the elimination of hydraulic system shock is covered. Prerequisite: FLPT 112 or 136 or 273 and 274 or permission of instructor and concurrent enrollment in FLPT 275 or permission of instructor. (SCC)

FLPT 281 – Solid State Electronic Control (8 cr)

Students learn to identify components, related schematic symbols and descriptive terminology i.e., diodes, transistors and operational amplifiers. Course work covers the DC power supply as it applies to proportional valve circuit cards. Special emphasis is placed on the operation and calibration of the electronic circuits used to position and control a proportional valve. Hydraulic lab trainers are used to demonstrate the control of hydraulic cylinders and motors. Prerequisite: FLPT 275 or permission of instructor. (SCC)

FLPT 283 – Microprocessor Control (6 cr)

Students are provided with a comprehensive up-to-date study of the principles and techniques of modern microprocessor control systems. Applications are presented to show how logic devices are used in a typical microcomputer controlled system. The acquired knowledge is then applied by wiring a system using a microprocessor control card. Prerequisite: FLPT 275, 277 or permission of instructor and concurrent enrollment in FLPT 281 or permission of instructor. (SCC)

FLPT 285 – Servo Valves (4 cr)

Students are introduced to the operation and application of servo valves in a hydraulic system. The importance of accurate control and positioning in machine operations is emphasized. Oil cleanliness and filtration, torque motor identification and operation, first- and second-state valve operation are stressed. Circuit design of electronic feedback loops is covered. Prerequisite: FLPT 112 or 136 or 273 and 274 or permission of instructor. (SCC)

FLPT 287 – Hydraulic System Electronic Control (6 cr)

This course provides an overview of the basic electronic components studied in previous class and how they are designed into dedicated electronic control hardware. Emphasis is placed on how they control, sequence and monitor the operation of an automated hydraulically controlled machine. Lab exercises involve the design, installation and startup of typical electronically controlled circuits. Plant tours and field trips are used to enhance the lab experience. Prerequisite: FLPT 279, 281, 283, 285 or permission of instructor. (SCC)

FLPT 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

FLPT 289 – Logic Element Circuitry (3 cr)

Students are introduced to the construction, special features and applications of logic elements of hydraulic systems. Remote control of logic elements using standard electrically controlled directional valves and electronically controlled proportional valves is emphasized. Other topics covered include the multifunction capabilities of logic elements (directional control, flow control and pressure control of hydraulic oil). Prerequisite: FLPT 131 or permission of instructor. (SCC)

FLPT 290 – PLC Applications (5 cr)

Students are introduced to the advanced control options available in programmable controllers. Interfacing of the PLCs with electronically controlled proportional and servo valves is emphasized. Lab exercises that involve writing of programs that accurately position hydraulic cylinders are included. An overview of PLC graphic capabilities and uses is presented. Prerequisite: FLPT 243. (SCC)

INDUSTRIAL FIRST AID**ISFTY 105 – CPR - Basic Life Support (1 cr)**

Basic life support skills in cardiopulmonary resuscitation according to AHA guidelines. Practical experience is given in one-person, two-person and infant CPR. (SCC)

ISFTY 111 – Industrial First Aid (2 cr)

This is a basic first aid course encompassing the following: Bleeding control and bandaging; practical methods of artificial respiration including mouth-to-mouth and mouth-to-nose resuscitation; cardiopulmonary resuscitation; poisons, shock, unconsciousness and stroke; burns and scalds, sunstroke, heat exhaustion, frostbite and freezing; strains, sprains and hernias; fractures and dislocations; proper transportation of injured; bites and stings; and subjects covering specific health hazards likely to be encountered by coworkers of first aid students enrolled in the course. (SFCC - telecourse) (SCC)

INTEGRATED BUSINESS AND ENTREPRENEURSHIP PROGRAM**IBE 201 – Integrated Business and Entrepreneurship Principles I (10 cr)**

The IBE Principles I course offers a hands-on approach to training future business leaders and entrepreneurs. College instructors and local business and community leaders guide student teams through the process of identifying a business product or service, conducting market research, and developing a business plan outline. This program is limited to individuals who have received permission of Program Director and have completed IBE application. (SCC)

See program/course abbreviation key on page 143.

IBE 202 – Integrated Business and Entrepreneurship Principles II (10 cr)

The IBE Principles II course offers a hands-on approach to training future business leaders and entrepreneurs. College instructors and local business and community leaders guide student teams through development and management of business operations, including accounting systems, understanding legal and regulatory issues, and identifying and securing material resources. Prerequisite: IBE 201 or instructor permission. (SCC)

IBE 203 – Integrated Business and Entrepreneurship Principles III (10 cr)

The IBE Principles III course offers a hands-on approach to training future business leaders and entrepreneurs. College instructors and local business and community leaders guide student teams through the creation and execution of a marketing plan and management of human resources. This course concludes with a capstone team presentation of the business plans developed throughout the IBE program. Prerequisite: IBE 202 or instructor permission. (SCC)

INTERIOR DESIGN**INTDS 105 – Design Drawing (4 cr)**

Design drawing is a beginning drawing class that offers design students a strong introduction to drawing skills needed in their profession. The class emphasizes the development of close observation skills and composition as students experience the fundamentals of drawing line, shape, light and reflection, shade and shadow, and perspective as related to interior subjects and formats. Prerequisite: Required minimum reading placement score: COMPASS 80, ASSET 40. Required minimum writing placement score: COMPASS 76, ASSET 40. (SFCC)

INTDS 106 – Sketching Techniques (4 cr)

Students learn to effectively communicate ideas through quick sketching visual formats. Instruction includes a wide variety of approaches to sketching techniques, working from simple to complex subject matter including still life's, interiors and the human form. (SFCC)

INTDS 107 – Rendering Techniques (4 cr)

Rendering Techniques exposes students to different media and teaches them to accurately represent various subject matter in complex illustrations. The class places heavy emphasis on developing close observation skills, translating observations into a loose rendering style and a bold, creative approach to mixed media rendering styles. Prerequisite: GRDSN 105, INTDS 106 or permission of instructor. (SFCC)

INTDS 170 – Elements of Interior Design (5 cr)

Examination of basic design principles and elements used in interior space design. Study of the use of contemporary spaces, furnishings and accessories based on integration of color, light, line, balance, texture and form. Prerequisite: Required minimum reading placement score: COMPASS 80, ASSET 40. Required minimum writing placement score: COMPASS 76, ASSET 40. (SFCC)

INTDS 171 – Interior Design Studio I (6 cr)

Students in this course study how to apply design principles to space planning in addition to functional and aesthetic analysis of interior components. Students learn to complete a series of practical residential design problems, including social and private spaces. Activities include how to measure and draw actual spaces, and selection and incorporation of architectural materials and furniture as integral design components. Students begin to build a selection of interior projects for their portfolio using professional presentation techniques. Prerequisite: INTDS 184, 187 or permission of instructor. (SFCC)

INTDS 172 – Interior Design Studio II (6 cr)

This course builds on knowledge gained in INTDS 171 by offering more advanced and specific, practical applications of residential environment design. It emphasizes selection of residential interior finishes, design concept development, space planning, problem solving, and functional and aesthetic factors as design components. Freehand drawing and sketching are integral to most projects. Students refine skills in working and design drawings, research methods, and the design process. Projects might include kitchen design, product research, and specification and alternative housing. Prerequisite: INTDS 171 or permission of instructor. (SFCC)

INTDS 173 – Architectural Graphics I (4 cr)

Fundamentals of mechanical drawing pertaining to interior design; architectural floor plans, symbols, elevations and lettering. Prerequisite: Required minimum reading placement score: COMPASS 80, ASSET 40. Required minimum writing placement score: COMPASS 76, ASSET 40. (SFCC)

INTDS 174 – Design Presentation (4 cr)

Design Presentation introduces students to various media techniques and styles in visual presentation of both 2-D and 3-D projects. Students learn to effectively communicate design ideas in the form of written design concepts using design language and appropriate vocabulary. Through a combination of public speaking techniques and creative presentation styles, students learn to effectively present their ideas in front of an audience. Prerequisite: INTDS 107, 184, 187. (SFCC)

INTDS 175 – Materials of Interior Design (5 cr)

Definition and application of materials appropriate for use in interiors to include glass, wood, plastics, floor and wall coverings, metals, and building materials. Prerequisite: INTDS 170. (SFCC)

INTDS 176 – Special Environments (6 cr)

This course is designed to help students develop knowledge of universal design, barrier-free space requirements and specifications, skill in designing for persons with varying abilities, and an awareness of human needs throughout the life cycle. Learning experiences will include guest speakers, field trips, simulation techniques and teamwork. Students continue to develop and refine skills in sketching, design drawings, research methods, problem solving and design concepts. Students have opportunities to experience and master course information when they are challenged to apply the information to specific projects. Prerequisite: INTDS 172 or permission of instructor. (SFCC)

INTDS 179 – History of Interiors I (3 cr)

A survey of types of furniture and interior architectural forms common to various historical periods including antiquity, medieval, Renaissance and eastern styles. Includes researching a project, creating traditional period backgrounds and atmospheres. (SFCC)

INTDS 180 – History of Interiors II (3 cr)

A survey of types of furniture and interior architectural forms common to various historical periods, including Baroque, Rococo, Neoclassic and Victorian. Includes researching a project, creating a traditional period background and atmosphere. Prerequisite: INTDS 179 or permission of instructor. (SFCC)

INTDS 181 – History of Interiors III (3 cr)

A survey of types of furniture and interior architectural forms common to the Industrial Revolution in England and America, European and American Art Nouveau, Art Deco, the Mission Style, the Bauhaus and International Styles, and the modern movement to the present. Prerequisite: INTDS 180 or permission of instructor. (SFCC)

INTDS 184 – Architectural Graphics II (4 cr)

Architectural drafting development includes light frame construction principles and working drawings for a private residence. Additional study includes introduction to computer-aided drafting. Prerequisite: INTDS 173. (SFCC)

INTDS 185 – Building Systems for Interior Design (3 cr)

Introduction of specific systems within a building that directly affect the interior environment, systems introduction to include: Structural, mechanical, electrical, building envelope. Additional emphasis to include building codes and basic design considerations for building systems. Content is specifically focused on interior design and how designers would interface with other design consultants. Prerequisite: INTDS 171 and concurrent enrollment in INTDS 172, 186. (SFCC)

INTDS 186 – Lighting Design (3 cr)

This course covers the study of lighting design and application in both residential and commercial interiors. Includes practical problem solving and reflected ceiling plans. Prerequisite: INTDS 171. (SFCC)

INTDS 187 – Architectural Graphics III (4 cr)

This course focuses on 3 dimensional volume exploration through the use of different methods of graphically depicting the space. Instruction is provided in the fundamentals of perspective drawing, paraline drawing, and isometric drawing. Additionally, students will learn techniques in model building as a design and presentation tool. Prerequisite: INTDS 184. (SFCC)

INTDS 189 – Special Topics (3 cr)

This course focuses on a topic currently relevant to the field of interior design as a supplement to existing program courses. Course content varies depending on topic and number of credits offered. Areas students explore may include historic preservation, community service and educational/cultural tours. Course may be repeated for credit with different topics. Prerequisite: INTDS 170. (SFCC)

INTDS 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

INTDS 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

INTDS 268 – Design Portfolio (3 cr)

This course examines how design communication relates to client presentation. It focuses on portfolio and interviewing skills for professional presentation. Students develop creative portfolios that capture their capabilities as well as their personal and design philosophy, in a medium of their choice. Prerequisite: INTDS 282; INTDS 286 or instructor permission and concurrent enrollment in INTDS 266; INTDS 267 or instructor permission. (SFCC)

INTDS 275 – Professional Practices (3 cr)

Students learn personal goal setting, how to establish a business plan, types of business formations, resources of advice and counsel, and how to establish an interior design practice. (SFCC)

INTDS 280 – Textiles for Interiors (5 cr)

The selection, use and care of textile fabrics for interiors based on the study of fibers, fabric construction, specific finishes and properties; emphasis on designer selection and specification of fabrics for window treatments, upholstering furniture, floor coverings and accessories. Prerequisite: ART 105 and INTDS 170 or permission of instructor. (SFCC)

INTDS 281 – Commercial Design Studio I (6 cr)

Students learn the practical problem-solving techniques used in the design of commercial and public spaces. Commercial design materials and specifications are surveyed and applied to a series of interior projects requiring research, teamwork and professional presentation. Projects may include reception areas, hospitality, small office, healthcare and retail establishments. Actual projects are used as they become available. Prerequisite: INTDS 176, GPA 2.0 and faculty evaluation. (SFCC)

INTDS 282 – Commercial Design Studio II (6 cr)

Students are involved with advanced work in contract and institutional design problems including research projects. Lectures are used to discuss project programming and to synthesize information gained in INTDS 281. Projects may include various international commercial spaces, hospitality and healthcare environments. Actual design projects are used when practical. Prerequisite: INTDS 281 or permission of instructor. (SFCC)

INTDS 285 – Computer Aided Design I (4 cr)

Introduction to the basic CAD skills needed to complete 2 dimensional drawings using computer aided design software. Students will learn to navigate the graphic interface and complete floor plans, furniture plans, reflected ceiling plans, and interior elevations using industry specific software and principles. Prerequisite: INTDS 172 and concurrent enrollment in INTDS 176. (SFCC)

INTDS 286 – Computer Aided Design II (4 cr)

This course builds on the skills learned in INTDS 285 and introduces more advanced design and drafting operations including 3-D design drawing using AUTOCAD. Prerequisite: INTDS 285. (SFCC)

INTDS 287 – Digital Interior Design Technology (4 cr)

This course provides a working knowledge of some of the digital design computer technology used today in the interior design industry. Through practice exercises and applications, students learn the basics of digital design programs including 3D, AutoCAD and Photoshop. Course work culminates in a final project that integrates photographs, AutoCAD drawings and other images and elements using features from each of the learned digital programs. Prerequisite: Minimum of one quarter of AutoCAD within the previous one to two years. Familiarity with the Windows environment and understanding of mouse functionality (basic AutoCAD drawing and edit commands). Basic understanding of how to specify furniture. Ability to efficiently read a floor plan. Basic understanding and familiarity with Photoshop. (SFCC)

INTDS 295 – International Design (5 cr)

Students gain first-hand experience with and exposure to the art, history, interior design and culture of a foreign country. Students participate in guided visits to museums, monuments and specially organized discipline-specific sites. This class involves a 10-15 day tour of the designated foreign country and offers a multi-faceted exposure to its culture. (SFCC)

INTERPRETER TRAINING PROGRAM**HSEAR 106 – Introduction to Deaf Culture (5 cr)**

Overview of deaf culture, different types of hearing losses and their effects on the functioning and status of the deaf individual (psychological, educational and social). Hearing aids and their function and limitations are introduced along with various modes of communication used by deaf people. Prerequisite: Recommended minimum reading placement scores: Compass 80, Asset 40. (SFCC)

HSEAR 128 – Signing Exact English I (2 cr)

Skills in the new sign systems as used in various educational programs such as manual English and the SEE system are taught. Prerequisite: May be taken with ASL& 121. (SFCC)

HSEAR 129 – Signing Exact English II (2 cr)

Skill building, vocabulary development and theory of new sign systems are taught. Prerequisite: HSEAR 128. (SFCC)

HSEAR 151 – Education of the Hearing Impaired (5 cr)

Current specialized techniques of education for the hearing impaired as they are practiced, as well as the principles and theories underlying those practices. Special emphasis is given to the Signing Exact English (SEE II) system of Manually Coded English, along with the practice and rationale for its use in a total communication setting. Prerequisite: ASL& 123 or demonstrated competency. Recommended minimum reading placement scores: Compass 80, Asset 40. (SFCC)

HSEAR 154 – Introduction to Interpreting (5 cr)

Major issues that confront counselors and social workers in programs that are providing services to deaf people. The code of ethics for interpreters is introduced and ethical situations are discussed. Prerequisite: Recommended minimum reading placement scores: Compass 80, Asset 40. (SFCC)

HSEAR 201 – Voicing (5 cr)

Students develop comprehension skills in understanding of various signed messages of deaf persons. As a result of developing comprehension skills, students will be able to apply various tools to the voicing task of any signed messages by a deaf person. Prerequisite: ASL& 123 or demonstrated competency. (SFCC)

HSEAR 202 – Transliterating I (5 cr)

Students develop skills that will apply to various types of educational situations. Students develop skills in using conceptual signing, and developing knowledge and skill in using educational terminology. Students have the opportunity to practice transliterating in general areas of educational and community topics. Emphasis is placed on developing skill in transliterating from English to signed English. Prerequisite: HSEAR 251 or demonstrated competency. (SFCC)

HSEAR 203 – Transliterating II (5 cr)

Students refine the various skill components of transliterating that prepare them for transliterating tasks in the educational environment. Emphasis is placed on developing knowledge and skill in the specific subject areas found in educational environments such as science, math, social services and technical fields. Emphasis is placed on appropriate signing of various technical vocabularies presented at a rate of 120 wpm in the classroom. Prerequisite: HSEAR 202 or demonstrated competency. (SFCC)

HSEAR 251 – ASL Interpreting I (5 cr)

Students learn the various models of interpreting in the field and apply the listening skills necessary to successful ASL interpreting. Areas to be covered in this course are use of space, 4 Ws and 1 H theory of interpreting from English to ASL. Students have the opportunity to practice various topics that will be applied to community and platform type of interpreting. Prerequisite: ASL& 123 or demonstrated competency. (SFCC)

HSEAR 252 – ASL Interpreting II (5 cr)

Students utilize prior skills and apply these to specific types of situations that may arise in the community. Topics covered are medical interpreting, legal interpreting and social service interpreting. As a result of this course, students are prepared to go into the community to interpret for various types of situations and deaf people they are likely to encounter. Prerequisite: HSEAR 251 or demonstrated competency. (SFCC)

HSEAR 253 – ASL Interpreting III (5 cr)

Students combine the skills of voicing from ASL and interpreting into ASL as they practice in-depth the areas of one-to-one interpreting that they are likely to encounter in the community. Students are exposed to persons whose skills vary from minimal competency to signed English and are expected to practice and use in a professional manner the ASL interpreting skills needed in one-to-one situations. Areas to be covered include medical interpreting, legal interpreting, social service interpreting, mental health interpreting and other community-type interpreting. Prerequisite: HSEAR 252 or demonstrated competency. (SFCC)

HSEAR 268 – Seminar on Deafness (3 cr)

Discussion of topics of current interest and importance as reflected in current literature and periodicals. (SFCC)

HSEAR 281 – Interpreting Practicum I (1-5 cr)

Students are placed in a specific site where the skills and knowledge gained in the classroom are applied. Students are expected to accumulate 26-130 hours of actual practicum experience that prepare them to move into real working situations upon graduation. Students meet once a week for one hour to discuss problems, vocabulary and situations encountered in the practicum experience. Prerequisite: HSEAR 202. (SFCC)

HSEAR 282 – Interpreting Practicum II (1-5 cr)

Students develop in-depth skills in both interpreting and transliterating by being placed at sites where they develop their specialty. Students further sharpen their skills in articulating knowledge and understanding of interpreting in their chosen areas. For example, students wishing to develop more skill in transliterating at the elementary, junior high and high school level will be placed in those sites to refine their skills in that area. Prerequisite: HSEAR 202, 281. (SFCC)

ITP 104 – Introduction to Audiologic Rehabilitation/Habilitation (4 cr)

This course introduces the anatomy of the ear, the functions of the parts of the ear, types and function of hearing assistive devices. It is designed to furnish students with a basic understanding of the physiology, mechanics and the impact of hearing loss as well the habilitation/rehabilitation process. Prerequisite: Concurrent enrollment in ASL& 121. (SFCC)

ITP 231 – Theories of Discourse Analysis (2 cr)

This course will provide an introduction to discourse analysis as practiced by working interpreters. The primary focus will be to distinguish between different discourse analysis models and apply their ideas to the study and use of American Sign Language. Students will also be introduced to finding meaning, using appropriate ASL syntax, and how to use visualization and mind mapping for determining source message and constructing a target message. Prerequisite: ASL& 123 and concurrent enrollment in ASL& 221, ITP 241. (SFCC)

ITP 232 – ASL Linguistic Principles (3 cr)

This course will apply linguistic theories to American Sign Language. You will learn of the different linguistic theories and how they apply to the field of ASL. Prerequisite: ASL& 221, ITP 231, 241 and concurrent enrollment in ASL& 222, ITP 242. (SFCC)

ITP 233 – Manually Coded English Systems (5 cr)

This course is designed to introduce various systems of Manually Coded English (MCE) created for working with D/deaf and hard of hearing children, including the Rochester Method, Seeing Exact English (SEE-I), Signing Exact English (SEE-II), Cued Speech, Linguistics of Visual English (LOVE), and Conceptually Accurate Signed English (CASE). The primary focus will be to build vocabulary, receptive and expressive skills, and employ English grammatical structure using Signing Exact English (SEE-II). This course introduces approximately 400 vocabulary words as well as the affixes, contractions and prefixes used in SEE-II. Prerequisite: ASL& 222, ITP 232, 242 and concurrent enrollment in ASL& 223, ITP 243. (SFCC)

ITP 241 – Deaf Social and Cultural Issues (5 cr)

This course is designed to provide an in-depth look at various aspects of Deaf Culture which were overviewed in ASL& 121, 122 and 123. Language, history, legal issues, cultural conflicts, and reflective views of cultural aspects of the Deaf community will be presented. Previously learned aspects of Deaf Culture will be expanded. Prerequisite: ASL & 123 and concurrent enrollment in ASL& 221, ITP 231. (SFCC)

ITP 242 – Ethics of Interpreting I (2 cr)

This is an introductory course in ethics as it pertains to the field of interpreting. This 2 credit course incorporates the definitions of human rights, ethics, and morals, and the RID/NAD Code of Professional Conduct as applied to educational interpreters. Prerequisite: ASL& 221, ITP 231, 241 and concurrent enrollment in ASL& 222, ITP 232. (SFCC)

ITP 243 – Educational Interpreting (2 cr)

This 2 credit course discusses the role and considerations for an interpreter in educational settings. In this course, the student will experience application of the Code of Professional Conduct and the ethical considerations discussed in previous courses. Students will consider specific situations, such as Deaf/hard-of-hearing children with minimal language skills, with sight challenges, with Cochlear Implants and/or with other disabilities. Prerequisite: ASL& 222, ITP 232, 242 and concurrent enrollment in ASL& 223, ITP 233. (SFCC)

ITP 244 – Ethics of Interpreting II (3 cr)

This is the second course in a series of three courses designed to focus on ethical procedures and practices specifically applied to educational interpreting. This course covers specifically the Educational Hierarchy (Pyramids of Responsibility). Prerequisite: ASL& 223, ITP 233, 243 and concurrent enrollment in ITP 251, 261, 281. (SFCC)

ITP 245 – Advanced Ethics (2 cr)

This is the final course in a series of three courses dealing with ethics and ethical procedures for educational interpreters. Actual practicum experiences and virtual experiences will be used for discussion materials. Ethics and research will be described as well as use of ethics in the “everyday” environment. Prerequisite: ITP 252, 262, 282 and concurrent enrollment in ITP 253, 263, 283. (SFCC)

ITP 251 – Interpreting I (5 cr)

This course is designed to prepare the student with skills to receive information auditorally or visually and express that information in an equivalent message effectively, including affect, mood and inflection, using simultaneous interpreting methodologies. Prerequisite: ASL& 223, ITP 233, 243 and concurrent enrollment in ITP 244, 261, 281. (SFCC)

ITP 252 – Interpreting II (5 cr)

This course is designed to continue your preparation for exiting into an educational setting to work as an interpreter. You will continue to develop sign vocabulary appropriate for specific educational experiences, enhance receptive and expressive skills and work on speed and accuracy. You will learn to incorporate mime, physical movement, and ASL non-manual markers to assist in conveying meaning. Prerequisite: ITP 244, 251, 261, 281 and concurrent enrollment in ITP 262, 282. (SFCC)

ITP 253 – Interpreting III (5 cr)

In this course, you will apply simultaneous interpreting skills so as to receive visual discourse and verbally gloss information effectively, including affect, mood, and inflection; receive auditory information and express the information in equivalent appropriate ASL information, including affect, mood and inflection. You will enhance your skills in use of non-manual markers to convey auditory meaning. Prerequisite: ITP 252, 262, 282 and concurrent enrollment in ITP 245, 263, 283. (SFCC)

ITP 261 – Transliteration I (5 cr)

This course is designed to introduce transliterating and distinguishing between interpreting and transliterating. Students will work on sign-to-voice and voice-to-sign skills, increase vocabulary both expressively and receptively, and increase and improve grammar skills in consecutive transliterating. Prerequisite: ASL& 223, ITP 233, 243 and concurrent enrollment in ITP 244, 251, 261. (SFCC)

ITP 262 – Transliteration II (5 cr)

In this course, students will increase vocabulary, enhance receptive and expressive skills and improve speed and accuracy in voice-to-sign and sign-to-voice transliterating using simultaneous methodologies. Student will receive and express information effectively, using affect, mood and inflection to match the target language to the source language. Prerequisite: ITP 251, 261, 281 and concurrent enrollment in ITP 252, 282. (SFCC)

ITP 263 – Transliteration III (5 cr)

This course is designed to prepare student for exiting into the community to work as a transliterator in educational settings. Students will receive information in verbal and/or signed form and use appropriate transliteration procedures to relay the information, matching register, intention and content. Students will demonstrate appropriate switching techniques for both sign-to-voice and voice-to-sign, adhering to the Interpreter’s Code of Professional Conduct. Prerequisite: ITP 252, 262, 282 and concurrent enrollment in ITP 245, 253, 283. (SFCC)

ITP 281 – Applied Interpreting I (1 cr)

First of three separate opportunities to apply interpreting/transliterating skills. This first course requires observation and voice-to-sign or sign-to-voice in a mock interpreting environment where no Deaf people will be present. The goals of this course are to strengthen stamina in interpreting, predicting skills, and ability to stay within the interpreter’s Code of Professional Conduct. Prerequisite: ASL& 223, ITP 233, 243 and concurrent enrollment in ITP 244, 251, 261. (SFCC)

ITP 282 – Applied Interpreting II (2 cr)

This second applied interpreting experience requires experience in the following categories: Observation and voice-to-sign and/or sign-to-voice in an interpreting environment in the public arena where no Deaf people will be present. Prerequisite: ASL& 123, ITP 244, 251, 261, 281 and concurrent enrollment in ITP 252, 262. (SFCC)

ITP 283 – Applied Interpreting III (3 cr)

This is the third practicum and requires experience in the following categories: Observation and voice-to-sign and/or sign-to-voice interpreting/transliterating in an educational environment. Students will be placed in a school program under the supervision of an experienced interpreter/transliterator. Prerequisite: ITP 252, 262, 282 and concurrent enrollment in ITP 245, 253, 263. (SFCC)

INVASIVE CARDIOVASCULAR TECHNOLOGY

ICT 114 – Introduction to Cardiac Care (3 cr)

Introduction to the field of Cardiovascular Technology and the role of the CV Technologist. Stresses the importance of professionalism, ethical behavior, and communications. Introductory study of medical terminology as related to cardiac care. Various discussion groups and tours will be provided. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 115 – Technical Skills - CPR for Health Care Providers (1 cr)

American Heart Association version of health care provider course for CPR/AED. Required for student to enter a patient care clinical environment. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 116 – Acute Coronary Syndrome (1 cr)

A study of the nations number one killer in its acute phase. Pathophysiology of atherosclerosis. The stable versus the unstable patient. Vulnerable plaque types. STEMI versus NSTEMI patient presentations. The national door to balloon initiative. 12 lead EKG recognition of the signs of ischemia/infarct patterns. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 117 – Cardiovascular Pharm 1 (1 cr)

Introduction to cardiovascular pharmacology. A review of control of heart rate, blood pressure, and cardiac output and the common drug groups employed to manipulate these parameters. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 124 – CV Diagnostic Exams (4 cr)

A review of the examinations used today to screen for coronary artery disease. Case studies will be presented from the patient initial presentation through diagnostic workup. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 125 – Hemodynamics (2 cr)

Introduction to various forms of invasive monitoring. Emphasis is placed on the basics of hemodynamic monitoring and interpretation. Normal and pathologic examples are introduced. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 126 – Technical Skills/Reading Hemodynamics (1 cr)

Introduction to various forms of invasive monitoring. Emphasis is placed on the basics of hemodynamic monitoring and interpretation. Normal and pathologic examples are introduced. Supports concepts taught in ICT 125. Prerequisite: Permission of instructor or permission of instructor. (SCC)

ICT 127 – Cardiovascular Pharm 2 (1 cr)

Continuation of ICT 117 Intro to CV Pharm. Advanced Cardiac Life Support drugs are introduced. Pharmacy math is introduced. Pharmacy law is studied. Principles of IV therapy are introduced. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 128 – Technical Skills/Pharmacology (1 cr)

Supports ICT 127 concepts. Case studies of patients during cardiac emergencies will be evaluated for appropriate drug selection. Pharmacy math calculations will be taught. IV therapy techniques will be taught. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 129 – CPR Instructor (1 cr)

American Heart Association CPR Instructor course. Participants will review CPR for Health Care Providers and learn methods to teach the class. Must have a valid HCP card. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 134 – Cath Lab Procedures (3 cr)

This course is an overview of cardiovascular invasive diagnosis and intervention. Includes an introduction to the cardiac catheterization lab through the study of: Catheterization protocols and equipment. Angiographic anatomy of the cardiovascular system, and invasive cardiac measurements and calculations. Labs and tours will be provided. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 135 – Technical Skills Cath Lab Procedures (1 cr)

This is the lab supporting ICT 134. Skills taught will be procedural tables and equipment used in cardiac catheterization. Simulations of vascular access techniques and cannulation of model vascular systems will be utilized. Computer analysis of recorded hemodynamic parameters will be introduced by use of a physiologic monitor. Injector system parameters will be taught. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 138 – Cardiovascular Physiology (4 cr)

This course is an advanced study of normal cardiovascular physiology presented in a series of physician lectures and lab demonstrations with applications in invasive and noninvasive cardiology. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 139 – Radiation Safety (2 cr)

A study of radiation production and safety measures for health care providers. This class will prepare the student to work in the fluoroscopic and cine imaging environment of the cardiac catheterization laboratory. Patient and staff exposure protection are emphasized. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 140 – Surgical Asepsis (1 cr)

Surgical asepsis for health care providers. This class will prepare the student to create a sterile field. Gown and glove themselves and others. Procedural awareness of working in a sterile field will be developed. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 141 – Technical Skills/Surgical Asepsis (1 cr)

This class supports ICT 140. The skills of surgical asepsis and infection control are taught. Working in a sterile field and gowning and gloving are taught. Develop a surgical conscience. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 144 – Patient Care and Assessment (4 cr)

Develop patient care skills specific to patients with cardiovascular disease. Read a medical chart to identify risks for invasive procedures. Understand the expected response of the physician to various patient presentations. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 145 – Technical Skills/Cath Lab Boot Camp/Patient Care (4 cr)

This class prepares the student to enter the clinical environment of the cardiac catheterization laboratory. Patient care skills and procedural steps will be practiced. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 146 – Cath Lab Clinical I (6 cr)

Initial clinical experience of 160 clock hours. Focus on diagnostic cardiac catheterization procedural participation. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 214 – Cardiac Interventions/PCI (3 cr)

This course will focus on the percutaneous interventions performed in today's cardiac cath lab. Including, but not limited to: Stenting, balloon angioplasty, intravascular ultrasound, atherectomy, thrombectomy, ocular coherence tomography, and other techniques. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 215 – Non Cardiac Vascular (Special) Procedures 1 (2 cr)

This class will explore the cardiovascular diagnostic and interventions in non-cardiac vascular beds. This field is known as "Special Procedures" or Interventional Radiology. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 216 – Electrophysiology 1 Introduction To Devices (2 cr)

This class will introduce the sub-specialty of electrophysiology (EP), this is the first of 2 classes. In this class we will investigate the role of EP in cardiology. A study of diagnostic protocols and implantable devices like pacers and defibrillators will be introduced. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 217 – Technical Skills/PCI/EP/Special Equipment (2 cr)

This skills lab supports the ICT 214, 215 and 216 didactic content. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 218 – Cath Lab Clinical II (5 cr)

This course continues to develop the skills from Cath Lab Clinical I. Students move into more complex procedures, such as percutaneous coronary interventions. Including, but not limited to: Stents, balloon angioplasty, intracoronary ultrasound. Monitor, scrub and circulator roles should be practiced. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 224 – Advanced Practices/Management (5 cr)

This class will focus on advanced practices such as left ventricular assist devices and support of cardiovascular surgery. Another aspect of this class will be to define the operational structure of the health care facility. For profit/not for profit hospitals will be studied. Private physician laboratory management models will be defined. Hospital chain of command will be defined. The emphasis will be for the student to understand and excel in multiple working environments. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 225 – Pediatric Cath (1 cr)

The role of the cath lab in caring for patients with cardiac congenital anomalies will be explored. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 226 – Statistics and Research (1 cr)

Introduction to the medical research protocols and the FDA approval process for drugs and devices. A review of statistics as utilized in medical research. Evaluation of the meaning of scientific reports. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 227 – Electrophysiology 2 Interventions (2 cr)

This class is a continuation of ICT 216 Introduction to EP. EP lab interventions for treatment of cardiac arrhythmias are discussed. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 228 – Technical Skills/Peds/Statistical Analysis/EP (2 cr)

This class supports the didactic content of ICT 224, 225, 226 and 227. Technical skills in the areas of cardiac assist devices, pediatric interventional devices, EP interventional devices. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 229 – Cath Lab Clinical III (5 cr)

This course continues to develop the skills from Cath Lab Clinical II. Students move into more complex procedures and coronary interventions. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 234 – Board Registry (RCIS) Prep Blackboard (4 cr)

This class will prepare the student to sit for the national registry appropriate for work in the cardiac cath lab. This being the RCIS (Registered Cardiovascular Invasive Specialist) registry offered by CCI (Cardiovascular Credentialing International). Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

ICT 235 – Cath Lab Clinical IV (12 cr)

This course continues to develop the skills from Cath lab Clinical III. Students move into more complex procedures and coronary interventions. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

JAPANESE**JAPN& 121 – Japanese I (5 cr)**

Elementary Japanese is an introduction to Japanese language; conversation, composition, grammar and written Japanese. Discussion of culture and traditions. (SCC, SFCC)

JAPN& 122 – Japanese II (5 cr)

Elementary Japanese is an introduction to Japanese language; conversation, composition, grammar and written Japanese. Discussion of culture and traditions. Prerequisite: JAPN& 121 or permission of instructor. (SCC, SFCC)

JAPN& 123 – Japanese III (5 cr)

Elementary Japanese is an introduction to Japanese language; conversation, composition, grammar and written Japanese. Discussion of culture and traditions. Prerequisite: JAPN& 122 or permission of instructor. (SCC, SFCC)

JAPN& 221 – Japanese IV (5 cr)

Students increase their fluency and listening comprehension, master 200 kanjis and their “on” and “kun” readings, and learn to read short articles in newspapers and magazines. Prerequisite: JAPN& 123 or permission of instructor. (SCC, SFCC)

JAPN& 222 – Japanese V (5 cr)

Students increase their fluency and listening comprehension, master 200 kanjis and their “on” and “kun” readings, and learn to read short articles in newspapers and magazines. Prerequisite: JAPN& 221 or permission of instructor. (SCC, SFCC)

JAPN& 223 – Japanese VI (5 cr)

Students increase their fluency and listening comprehension, master 200 kanjis and their “on” and “kun” readings, and learn to read short articles in newspapers and magazines. Prerequisite: JAPN& 222 or permission of instructor. (SCC, SFCC)

JAPN 241 – Japanese Conversation and Culture (2 cr)

This is a conversation and culture course that is aimed at students who want to build on their current knowledge of Japanese culture and increase their confidence in communicating at an intermediate level. Students will practice speaking, listening, acquire practical proficiency. This course also familiarizes students with basic oral communication skills with an emphasis on idiomatic expressions, basic grammar and vocabulary to develop functional language skills. Repeatable up to four credits. Prerequisite: Two years of high school level Japanese, equivalent; JAPN& 121, 122. (SFCC)

JAPN 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

JOURNALISM**JOURN 100 – Introduction to Broadcasting (5 cr)**

A survey of radio, television and cable communications will be addressed in this course. Content includes the history of the media; organization, structure and regulation of the industry; commercial and educational broadcasting; programming; advertising; audience standards of criticism; and new technologies. (SFCC)

JOURN 101 – College Newspaper Production I (3-5 cr)

Gain practical writing, layout and publishing experience by working on the college newspaper. Students plan, write, edit and design the newspaper that informs, educates and entertains the students, faculty and staff of the college. The newspaper is the creation of students who may earn from 3 to 5 credits. (SCC, SFCC)

JOURN 102 – College Newspaper Production II (3-5 cr)

This course helps students to further refine the writing, layout, and publishing skills developed in JOURN 101 by working on the college newspaper. Students plan, write, edit and design the newspaper that informs, educates and entertains the students, faculty and staff of the college. The newspaper is the creation of students who may earn from 3 to 5 credits. Prerequisite: Must have earned at least a 2.0 or better in JOURN 101. (SCC, SFCC)

JOURN 103 – College Newspaper Production III (3-5 cr)

This course helps students to further refine the writing, layout, and publishing skills developed in JOURN 102 by working on the college newspaper. Students plan, write, edit and design the newspaper that informs, educates and entertains the students, faculty and staff of the college. The newspaper is the creation of students who may earn from 3 to 5 credits. Prerequisite: Must have earned at least a 2.0 or better in JOURN 102. (SCC, SFCC)

JOURN 105 – Computerized Layout and Design for Journalists (2 cr)

This course offers instruction in the use of PageMaker for newsletter or newspaper layout, Adobe Photoshop for scanning photographs and artwork, and CorelDraw for graphics. (SCC)

JOURN 110 – Mass Media (5 cr)

The study of the mass media. The major goals of the course are to give students an objective, thoughtful view of the mass media so that they better understand the impact the media has on us. It is a survey course that studies newspapers, advertising and television, in addition to a less detailed study of radio, film, and the other forms and issues of mass media. Prerequisite: SFCC only; Recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

JOURN 201 – College Newspaper Production IV (3-5 cr)

This course helps students to further refine the writing, layout, and publishing skills developed in JOURN 103 by working on the college newspaper. Students plan, write, edit and design the newspaper that informs, educates and entertains the students, faculty and staff of the college. The newspaper is the creation of students who may earn from 3 to 5 credits. It is strongly recommended that a student have completed JOURN 220 before registering for this course. Prerequisite: Must have earned at least a 2.0 or better in JOURN 103. (SCC, SFCC)

JOURN 202 – College Newspaper Production V (3-5 cr)

This course helps students to further refine the writing, layout, and publishing skills developed in JOURN 201 by working on the college newspaper. Students plan, write, edit and design the newspaper that informs, educates and entertains the students, faculty and staff of the college. The newspaper is the creation of students who may earn from 3 to 5 credits. It is strongly recommended that a student have completed JOURN 220 before registering for this course. Prerequisite: Must have earned at least a 2.0 or better in JOURN 201. (SCC, SFCC)

JOURN 203 – College Newspaper Production VI (3-5 cr)

This course helps students to further refine the writing, layout, and publishing skills developed in JOURN 202 by working on the college newspaper. Students plan, write, edit and design the newspaper that informs, educates and entertains the students, faculty and staff of the college. The newspaper is the creation of students who may earn from 3 to 5 credits. It is strongly recommended that a student have completed JOURN 220 before registering for this course. Prerequisite: Must have earned at least a 2.0 or better in JOURN 202. (SCC, SFCC)

JOURN 220 – Introduction to News Writing (5 cr)

The emphasis of this course is on writing clear, concise articles for print or broadcast media. Students learn the basic techniques of organizing news and feature articles. In addition, interviewing skills, note taking and copy reading are stressed. (SCC, SFCC)

JOURN 224 – Advanced News Reporting (5 cr)

This course is designed for students who wish to further refine the skills developed in JOURN 220. Students will focus on column/editorial writing, advanced feature writing, computer-assisted reporting and Associated Press writing style. This will be very writing-intensive course, focusing on both long-form and short-form storytelling techniques used in newspapers, magazines and the web. Prerequisite: 2.0 or better in JOURN 220 or permission of instructor. (SFCC)

JOURN 225 – Multimedia Journalism (5 cr)

This course introduces students to the fundamentals of storytelling in non-print media. By building on the basic newsgathering, interviewing and storytelling skills developed in JOURN 220, students will explore how various media can be employed to help reach disparate audiences in new and innovative ways. Prerequisite: JOURN 220. (SFCC)

JOURN 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

JOURN 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

LEGAL ADMINISTRATIVE ASSISTANT**LSEC 216 – Legal Office Procedures (5 cr)**

Students are introduced to the role of lawyers and law office staff in today's legal environment. Students develop and improve skills in maintaining trust accounts, time slips, docket control, law library management, the use of the Uniform System of Citations as a reference tool for legal citations, notary public requirements, trial preparation, law office management, collections and garnishments, courthouse procedures, confidentiality requirements, and positive human relations techniques. Critical thinking skills are addressed. Prerequisite: LSEC 239 or 249 and enrollment in the legal administrative assistant program. (SCC)

LSEC 233 – Legal Office Practice (5 cr)

Students study the integration of decision-making with legal office procedures and skills in the areas of contracts, business organizations, real estate, estates and guardianships, and bankruptcy. This course includes five hours of lecture and seven hours of skill development, two of which are arranged. Prerequisite: BT 109 and LSEC 239, and 244 with a 2.0 grade or better, or permission of instructor. (SCC)

LSEC 236 – Legal Terminology (5 cr)

Students learn legal terminology and study ethics, the court system, wills, probates and guardianships, partnerships and corporations, real estate and landlord/tenant law. Prerequisite: Enrolled in the legal administrative assistant program or permission of instructor. (SCC)

LSEC 237 – Legal Terminology (5 cr)

Students learn legal terminology and study litigation, torts, contracts, criminal law, family law, community property, adoptions, change of name and bankruptcy. Prerequisite: Enrolled in the legal administrative assistant program or permission of instructor. (SCC)

LSEC 239 – Legal Formatting (5 cr)

Students develop skills on personal computers, competencies in the production of legal documents used in law-related offices and courts, and critical thinking skills in legal applications. Prerequisite: Keyboarding skills of 40 wpm; BT 102 and 165; and BT 109 or ENGL& 101 with a grade of 2.0 or higher or permission of instructor. (SCC)

LSEC 244 – Legal Machine Transcription (5 cr)

Students develop proficiency in producing rough draft and usable legal copy from voice transcribers. Prerequisite: BT 235 and LSEC 239 or 249 with a 2.0 grade or better, or permission of instructor. (SCC)

LSEC 249 – Legal Formatting Procedures (5 cr)

Advanced legal formatting functions are presented and students develop competencies to produce legal documents used in law-related offices and courses. Students improve their critical thinking skills in legal procedures. Prerequisite: Keyboarding skills of 40 wpm; BT 102 and 165 and BT 109 or ENGL& 101 with a 2.0 higher or permission of instructor. (SCC)

LSEC 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

LSEC 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

LSEC 285 – Legal Office Internship (3 cr)

Students apply their office and human relations skills during this two-week internship at a law office or law-related office or court. Sites meet individual needs of students and complement their program. Grading option: Pass/fail. Prerequisite: Permission of program coordinator. (SCC)

LIBRARY AND INFORMATION SERVICES**LMLIB 100 – Introduction to Library Organizations and Careers (3 cr)**

Students are introduced to the historical, functional, and organizational structure of libraries. Current library services; philosophy, and terminology are emphasized. Students demonstrate knowledge about the role of the library technician as a member of library organizations. Students will explore professional organizations, employment outlook and identify a possible career path. (SFCC)

LMLIB 115 – Introduction to Library Organizational Systems (5 cr)

Students learn various systems used to organize and recall library materials with an emphasis on classification systems; filing rules; searching library catalog records; and an introduction to database structure. Prerequisite: Can be taken concurrently with LMLIB 100; or taken in sequence or permission of instructor and concurrent enrollment in LMLIB 100. (SFCC)

LMLIB 116 – Introduction to Circulation Systems and Services (5 cr)

Students are introduced to library circulation systems and services by engaging in practical experience using software. Students are introduced to policies associated with circulation services. Prerequisite: Can be taken concurrently with LMLIB 100 and LMLIB 115 or taken in sequence or permission of instructor. (SFCC)

LMLIB 117 – Access Services, Customer Service and Collection Maintenance (5 cr)

Students are introduced to common policies and procedures covering access services including: Inter Library Loan, library security issues, and collection maintenance (shelving, binding and book repair). Students also are introduced to customer service issues and best practices in all types of libraries. Prerequisite: LMLIB 116; Must be taken in sequence or permission of instructor. (SFCC)

LMLIB 125 – School Libraries and Media Centers (5 cr)

This is an introductory course for students interested in school library and media centers management and materials. An overview of the role and function of school libraries and media centers; information literacy standards and media materials management are presented. (SFCC)

LMLIB 126 – School Library Technology and Services for Curriculum Support (3 cr)

Students are introduced to the role of the school library in its capacity of providing curricular support in the K-12 setting. Information literacy; emerging technologies in teaching and learning; and outreach and collaboration with school personnel will be explored. (SFCC)

LMLIB 135 – Children's Literature and Library Services (5 cr)

Fairy tales and other works emerging from oral tradition, picture books, poetry, juvenile novels, non-fiction and informational books will be evaluated in terms of what they have to offer to children. Students will read and review children's literature and view audio-visual media associated with selected children's stories. Students will create presentations using children's literature and examine library services designed for children. (SFCC)

LMLIB 210 – Technical Services I: Acquisitions and Materials Processing (5 cr)

Students utilize bibliographic tools and searching techniques commonly used by libraries in identifying materials to be requisitioned; ordering methods; acquisitions procedures; serials management; and materials workflow is examined. Prerequisite: Must be taken in sequence; or permission of instructor. (SFCC)

LMLIB 220 – Technical Services II: Cataloging (5 cr)

Students will prepare bibliographic descriptions based on Anglo-American Cataloging Rules, 2nd ed., Revised, with emphasis on cataloging from copy. Some original cataloging is covered also, including assignment of main and added entries, assignment of subject headings and classification numbers and assignment of Cutter numbers. Prerequisite: Must be taken in sequence; or permission of instructor. (SFCC)

LMLIB 222 – Reference Services and Outreach (5 cr)

Students examine the function of library technician's role in relation to readers' services and supporting reference services. Students examine programs and outreach services libraries used to reach library users. Prerequisite: Must be taken in sequence; or permission of instructor. (SFCC)

LMLIB 224 – Research Topics and Projects in Library Service (1-3 cr)

The course content is designed to meet specific skill levels for individual students. The course content varies depending on research and/or project and the number of credits chosen and established guidelines allow students to research special areas of interest. Students have the opportunity to refine or expand their library technician skills working on an independent project or topic. All research and/or projects must be agreed upon by the instructor and student. Prerequisite: Permission of instructor. (SFCC)

LMLIB 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

LMLIB 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

MACHINIST/CNC TECHNOLOGY**MACH 113 – Beginning Blueprint (2 cr)**

Students learn basic blueprint reading with emphasis on the accurate interpretation of blueprints and sketches. Prerequisite: Concurrent enrollment in MACH 114, 115 or permission of instructor. (SCC)

MACH 114 – Introduction to Machine Shop I (5 cr)

Students are introduced to the manufacturing processes and the equipment and hardware used to shape and form materials. Practical application includes basic layout techniques, the use of measuring tools and shop safety practices. (SCC)

MACH 115 – Introduction to Machine Tools (5 cr)

Students are introduced to the tools, equipment and processes common to a machine shop with emphasis on their proper selection and use. Prerequisite: Concurrent enrollment in MACH 113, 114 or permission of instructor. (SCC)

MACH 116 – Introduction to Machine Shop II (5 cr)

This course continues with the applications introduced in MACH 114 emphasizing the manufacturing processes, equipment and hardware used to shape and form materials. Basic layout techniques, the use of measuring tools and shop safety practices are stressed. (SCC)

MACH 123 – Machine Tool Operations I (6 cr)

Students are introduced to theory and practical shop experience used in basic machining operations with emphasis on the safe operation of sawing and drilling machines. Prerequisite: MACH 113, 116. (SCC)

MACH 124 – Blueprint II (2 cr)

Students learn theory and practical applications in the basics of shop sketching. Basic lines and forms and freehand lettering are emphasized. Prerequisite: MACH 113 and concurrent enrollment in MACH 123, 125 or permission of instructor. (SCC)

MACH 125 – Machine Shop Math I (1-2 cr)

Students are introduced to the math principles and applications to machine shop procedures. Emphasis range from the calculation of percentages to practical algebra. Prerequisite: MACH 114 and concurrent enrollment in MACH 123, 124 or permission of instructor. (SCC)

MACH 126 – Machine Tool Operations II (7 cr)

This course continues with the concepts introduced in MACH 123. Students acquire practical shop experience in basic machining operations. The safe operation of sawing and drilling machines is emphasized. Prerequisite: MACH 113, 116. (SCC)

MACH 133 – Machine Tool Operations III (7 cr)

This course emphasizes the safe operation of lathes and their accessory equipment. Prerequisite: MACH 123, 126. (SCC)

MACH 134 – Machine Shop Math II (1-2 cr)

This course continues with the concepts introduced in MACH 125. Geometric construction and basic concepts of trigonometry are emphasized. Prerequisite: MACH 125 and concurrent enrollment in MACH 133, 135 or permission of instructor. (SCC)

MACH 135 – Blueprint III (2 cr)

This course continues with the concepts introduced in MACH 113 and 124. Practical experience in the interpretation and generation of special view drawings is emphasized. Prerequisite: MACH 124 and concurrent enrollment in MACH 133, 134 or permission of instructor. (SCC)

MACH 136 – Machine Tool Operations IV (7 cr)

This course continues with the concepts introduced in MACH 133. Practical applications in the safe operation of lathes and their accessory equipment are emphasized. Prerequisite: MACH 123, 126. (SCC)

MACH 201 – Manufacturing Economics (1 cr)

This course is a study of the principles of manufacturing business economics. Profit, customer satisfaction, labor and industries, costs, value added, unit cost, employee benefits and overhead are emphasized. (SCC)

MACH 202 – Manufacturing Resource Management (1 cr)

This course is a study of the principles of manufacturing focusing on production rates, inventory control, budgeting, computer applications and scheduling. (SCC)

MACH 243 – Machine Tool Operations V (8 cr)

This course emphasizes practical applications in the safe operation of vertical and horizontal milling machines. Prerequisite: MACH 133, 136. (SCC)

MACH 244 – Blueprint IV (2 cr)

This course presents theory and practical applications in the identification of structural steel shapes on blueprints. The generation of dimensioned working sketches of specific parts is emphasized. Prerequisite: MACH 125 and concurrent enrollment in MACH 243 or permission of instructor. (SCC)

MACH 246 – Machine Tool Operations VI (5 cr)

This course continues with the concepts introduced in MACH 243. Practical applications in the safe operation of vertical and horizontal milling machines are emphasized. Prerequisite: MACH 133, 136. (SCC)

MACH 247 – CNC Theory (5 cr)

Students learn to demonstrate basic competency in CNC programs and the operation of mills and lathes. (SCC)

MACH 248 – CNC Lab (7 cr)

This course continues with the concepts introduced in MACH 247 to prepare students to demonstrate basic competency in the manufacturing of CNC programs and the operation of mills and lathes. (SCC)

MACH 249 – Quality Control (4 cr)

This course prepares students to demonstrate competency in areas of manufacturing including quality control and part inspection, precision measurements, and the engineers' interpretation of drawings. (SCC)

MACH 250 – CNC Production Theory (5 cr)

This course prepares students to demonstrate competency in areas of the manufacturing industry that include basic CNC programming, intermediate CNC milling and turning operations, and CNC production. (SCC)

MACH 251 – CNC Production Lab (7 cr)

This course continues with the concepts introduced in MACH 250 preparing students to demonstrate competency in areas of the manufacturing industry that includes basic CNC programming, intermediate CNC milling and turning operations, and CNC production. (SCC)

MACH 253 – Machine Tool Operations VII (6 cr)

This course offers advanced applications in gears and gear cutting, and the use of rotary tables and indexing devices. The setup and calculation of machines for cutting are introduced. Prerequisite: MACH 243, 246. (SCC)

MACH 254 – Blueprint V (2 cr)

This course introduces practical applications in the generation of multiscale, assembly and detail drawings. Prerequisite: MACH 244 and concurrent enrollment in MACH 253 or permission of instructor. (SCC)

MACH 256 – Machine Tool Operations VIII (6 cr)

This course continues with the applications presented in MACH 253 emphasizing advanced applications in gears and gear cutting, and the use of rotary tables and indexing devices. Prerequisite: MACH 243, 246. (SCC)

MACH 257 – Computer Aided Machining (2-5 cr)

Students are introduced to the theory and practice of machine processes controlled by computers. Milling center and turning center functions, the role of the computer in controlling machine functions, and basic tool processes and machining practices are emphasized. Prerequisite: Machinist experience or permission of instructor. (SCC)

MACH 258 – Advanced Computer Aided Machining (2-5 cr)

This course continues with the concepts introduced in MACH 257 with emphasis on the practical application of producing two-dimensional drawings in computer aided design (CAD), creating a computer aided manufacturing post-process of the drawing, transferring the output to a milling center, and finalizing the practices with a completed machine product from stock materials. Prerequisite: MACH 257 or permission of instructor. (SCC)

MACH 261 – CNC Production Applications (6 cr)

This course focuses on modern computer-numeric control (CNC) production techniques common to small and large manufacturers. Students participate in actual production applications on CNC milling and turning centers and the use of self-developed computer programs. (SCC)

MACH 262 – CNC Programming (3-6 cr)

Students learn to program CNC machining centers using computer languages common to the industry. (SCC)

MACH 263 – Machine Tool Operations IX (7 cr)

Students are introduced to the practical applications in grinding and abrasive machining processes. Prerequisite: MACH 253, 256. (SCC)

MACH 264 – Machine Tool Operations X (6 cr)

This course continues with the applications introduced in MACH 263 emphasizing advanced applications in grinding and abrasive machining processes. Prerequisite: MACH 253, 256. (SCC)

MACH 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

MACH 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

See program/course abbreviation key on page 143.

MACH 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

MACH 295 – Quality Technician (1-10 cr)

Students are introduced to the practical applications in grinding and abrasive machining processes. (SCC)

MANAGEMENT**MMGT 100 – Supervised Volunteer Experience (1-3 cr)**

Approved supervised volunteer community service experience in a nonprofit, government or service organization that teaches students the value of contributing back to the community in which they live and work. Students may receive variable credits for hours of approved supervised experience during a quarter. One credit is given for every 33 hours of volunteer experience documented. Grade option: Pass/fail. (SCC)

MMGT 101 – Principles of Management (5 cr)

Fundamental principles of management as applied to business enterprise. Actual business situations are studied by applying basic management principles. Prerequisite: BUS& 101 or permission of instructor. (SCC, SFCC)

MMGT 102 – Personal Selling (3 cr)

This course introduces students to the techniques needed to be an effective salesperson. Content areas include the personal selling environment, planning the sales call, negotiating, and confirming and closing sales. (SCC)

MMGT 103 – Goal Development (1 cr)

A course designed to teach students the basic principles of goal development. Students are able to apply the principles learned in both a business setting and other situations. (SCC)

MMGT 104 – Time Management Techniques (1 cr)

A course designed to teach students the basic principles of time management. Students are able to demonstrate good time management techniques in the business world. (SCC)

MMGT 111 – Mid-Management Seminar (1-2 cr)

A conference course for students enrolled in the mid-management program. Emphasis is on experiences and activities designed to practice and develop management qualities and the acceptance of responsibilities. (SFCC)

MMGT 112 – Mid-Management Seminar (1-2 cr)

A conference course for students enrolled in the mid-management program. Emphasis is on experiences and activities designed to practice and develop management qualities and the acceptance of responsibilities. (SFCC)

MMGT 113 – Mid-Management Seminar (1-2 cr)

A conference course for students enrolled in the mid-management program. Emphasis is on experiences and activities designed to practice and develop management qualities and the acceptance of responsibilities. (SFCC)

MMGT 120 – Change and the Team Player (3 cr)

Fundamentals of managing change, encouraging innovation and learning the basics about being a team player are discussed. Clarifying team roles and responsibilities and effectively conducting meetings are explored. Role plays and case studies are addressed by the students. (SFCC)

MMGT 121 – Team Leadership Skills (2 cr)

Students learn key criteria regarding team leadership qualities and theories. The art of persuasion, maintaining a positive attitude, building solid working relationships and professionalism are explored. Facing conflict and negotiating skills are addressed and practiced. (SFCC)

MMGT 123 – Managing Strategies and Responsibilities (3 cr)

Students learn basic critical thinking skills, how to enhance performance expectations, strategies for managing time and handling stress. Also team decision making, coaching skills and techniques for problem-solving situations with facilitated problem-solving sessions are practiced. (SFCC)

MMGT 181 – Leadership Training-DEC (1-5 cr)

Students participate in practical applications of management and leadership techniques. These courses are associated with membership in Delta Epsilon Chi, a division of DECA. (SCC, SFCC)

MMGT 182 – Leadership Training-DEC (1-5 cr)

Students participate in practical applications of management and leadership techniques. These courses are associated with membership in Delta Epsilon Chi, a division of DECA. (SCC, SFCC)

MMGT 183 – Leadership Training-DEC (1-5 cr)

Students participate in practical applications of management and leadership techniques. These courses are associated with membership in Delta Epsilon Chi, a division of DECA. (SCC, SFCC)

MMGT 191 – Leadership Training-DEC (1-5 cr)

Students participate in practical applications of management and leadership techniques. These courses are associated with membership in Delta Epsilon Chi, a division of DECA. (SCC, SFCC)

MMGT 192 – Leadership Training-DEC (1-5 cr)

Students participate in practical applications of management and leadership techniques. These courses are associated with membership in Delta Epsilon Chi, a division of DECA. (SCC, SFCC)

MMGT 193 – Leadership Training-DEC (1-5 cr)

Students participate in practical applications of management and leadership techniques. These courses are associated with membership in Delta Epsilon Chi, a division of DECA. (SCC, SFCC)

MMGT 205 – Small Business Planning (5 cr)

The preparation of a small business plan for starting a small business. The plan will include business description, characteristics of the entrepreneur and the business planner, ownership, analysis of the industry, target customers and location, start-up costs, financial projections, and necessary licenses. The design of the course is to have a document to present to a possible lender or investor. (SCC)

MMGT 211 – Marketing (5 cr)

Introduction to the field of merchandise marketing; distribution of goods and services from producer to consumer and the place of marketing in our economy. Prerequisite: BUS& 101 or permission of instructor. (SCC, SFCC)

MMGT 212 – Retailing (5 cr)

Fundamentals of retailing including retail store operation, organization, merchandise management, sales promotion, customer relations and control. Prerequisite: BUS& 101 or permission of instructor. (SCC)

MMGT 218 – Fundamentals of Advertising (5 cr)

Introduction to the field of advertising: Planning, directing and coordinating advertising functions as a tool of marketing. Prerequisite: SCC only: BUS& 101 or permission of instructor. (SCC, SFCC)

MMGT 220 – Professional Sales (3 cr)

Introduction to the principles and techniques of sales promotion. Develop an understanding of factors and personality necessary for professional sales. (SFCC)

MMGT 221 – Presentation Skill Building (1 cr)

Development of basic skills in preparing and presenting short, prepared and impromptu speeches. Emphasis is given to poise and improved confidence in front of the public. Grading option: Pass/fail. (SFCC)

MMGT 223 – Customer Service (3 cr)

This course focuses on creating and maintaining positive customer relations. Efficient and effective ways to deliver quality service and products are presented. Projecting a professional image, communicating with customers and handling complaints effectively, maintaining time management, and working with culturally diverse clients are emphasized. (SCC, SFCC)

MMGT 231 – Human Resource Management (5 cr)

Techniques and principles of personnel supervision and administration including employee recruitment, job analysis, affirmative action, labor relations, compensation, performance appraisal, interviewing, motivation, training and development, and employee health and safety. (SCC, SFCC)

MMGT 232 – Project Leadership (5 cr)

The course introduces current leadership and teambuilding theories and builds the skills, needed to successfully lead others in various organizational contexts and in project management environment. The focus is on facilitating students' awareness of their own competencies as leaders and team members through completion of self assessment activities, interactive discussions and analyses of cases, simulations, general discussion and experiential learning. (SCC)

MMGT 240 – Management Information Systems (5 cr)

This course explores the information revolution in business. It focuses on the Internet and global communications, the globalization of markets, and the management of information systems. Prerequisite: CIS 110. (SCC)

MMGT 242 – Project Management (2.5 cr)

Examines project management theory and practices from a managerial perspective. Students define a project, create project objectives, determine resource requirements and create a project plan and schedule. Students will implement the concepts, tools and skills developed in this course while they successfully complete a business project. Prerequisite: Concurrent enrollment in CATT 241. (SCC)

MMGT 243 – Fundamentals of Project Management (5 cr)

Project management is an effective method for executing and completing projects on time and within budget. Students will gain a working knowledge of the fundamentals of project management and be able to immediately use that knowledge to effectively manage work projects. This course introduces the concepts and methods required for creating a plan and effectively managing project scope, time, cost, human resources, communication, risk, and procurement management to produce quality deliverables. (SCC)

MMGT 245 – Introduction to Consulting (2 cr)

This course introduces students to the information and procedures required to start a consulting business. Course content includes an in-depth study of business structure, business location, necessary government forms, equipment, supply and insurance needs, budgeting and accounting requirements, pricing considerations, and marketing strategies. (SCC, SFCC)

MMGT 251 – Transportation Systems (3 cr)

This course will expose students to the major aspects of business logistics. Students will learn about modes of transportation, documents involved in the transportation of goods, and issues concerning rate negotiations. This course utilizes a “hands-on” approach in order for students to take information and apply it to their current and future work assignments. (SFCC)

MMGT 252 – Principles of Purchasing (3 cr)

This course will provide students with an understanding of purchasing, supply contracts, it, and leasing. Students will gain knowledge of the laws governing the regulation of purchasing, contracts, leases, and out-sourcing. (SFCC)

MMGT 253 – Inventory Management (3 cr)

This course will introduce the concept of “inventory” and the relationship it has to a business. Students will become familiar with inventory systems, purchasing, and completing documentation. (SFCC)

MMGT 254 – Logistics and Supply Chain Management (3 cr)

This course will introduce students to the role of the logistics processes within the business environment. Students will develop and apply analytical and problem solving skills to find solutions to real-world issues. (SFCC)

MMGT 255 – Warehouse and Distribution Management (3 cr)

This course will familiarize students with the role of the warehousing function in the economy and its relationship to the logistics process. Students will develop and apply analytical and problem solving skills to find solutions to real-world issues. (SFCC)

MMGT 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

MMGT 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

MMGT 270 – Conference Preparation Techniques (1-5 cr)

Preparation and organization of conferences and meetings. Emphasis is placed on DECA competitive event. Preparation in such areas as research and data collection, development of visual and written materials, problem solving exercises, speech presentation, and other competitive event requirements. Prerequisite: Membership in DECA and permission of instructor. (SFCC)

MMGT 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

MMGT 295 – Management Workshop (0.5-3 cr)

This course focuses on current trends, unique needs or areas not covered in existing management classes. (SFCC)

MASSAGE THERAPY**MASS 110 – Introduction to Massage Therapy (6 cr)**

This course introduces students to the massage therapy profession in the healthcare, the spa, and the entrepreneurial environment. The basics of massage technique, kinesiology, and hydrotherapy are explored. Laboratory experiences to support these concepts are included in the course. Prerequisite: Admission into the massage therapy program. (SCC)

MASS 120 – Massage Technique I (4 cr)

Students are introduced to the basic theory and practice of massage therapy as well as the history of bodywork. Students learn the components and technique of Swedish massage. Students become skilled in taking a client’s medical history and master appropriate draping techniques. Professional courtesies toward clients before, during and after professional sessions are addressed, and basic palpation skills and assessment of pain levels are covered. Students learn the application and use of massage therapy equipment and supplies, such as adjustable tables, bolsters, pillows and lotions or oils. Basic indications for and contraindications to massage therapy are introduced. Students show competence in administering a basic full body relaxation massage at the end of this class. Prerequisite: HED 108, MASS 110. (SCC)

MASS 122 – Body Mechanics I (1 cr)

Students learn and practice safe and effective physical techniques to be utilized by the massage therapy practitioner. Students experience the proper positioning of the feet, legs, back, shoulders and head for the most effective practice of massage therapy. Breathing techniques for maintaining good equilibrium and energizing the massage practitioner are learned and studied. The technique of “centering” is introduced. Students take basic skills learned in Introduction to Massage Therapy and learn to utilize proper body mechanics and structure to avoid repetitive stress injury to the practitioner. Students learn the importance of, and practice stretching of the forearms, wrists, hands and fingers. Prerequisite: HED 108, MASS 110. (SCC)

MASS 124 – Kinesiology I (2 cr)

This course introduces the exploration of the structural and functional components involved in the complex movement of the human body. Anatomical principles related to gross motor movement are studied, as well as muscular imbalance of the large muscles of the body and their impact on postural distortion. Structure and function of major muscles and joints of the body are covered in depth. Basic endangerment sites as contra-indicators for massage therapy are identified. Students learn to evaluate standing posture and patterns of movement in clients. The primary identification of areas of muscular compensation during periods of injury is established. Prerequisite: HED 108, MASS 110. (SCC)

MASS 126 – Hydrotherapy I (1 cr)

This course is designed to introduce the massage therapy students to the use of heat and cold in body treatments. Types of apparatus approved for use by the massage practitioner are studied and hydrotherapy as a therapeutic aid will be explained. Students learn to identify the physiological principles and mechanisms involved in the effects of hydrotherapy. Students learn to utilize hot or cold packs during massage therapy sessions. Indications and contraindications, as well as precautions and effects of hydrotherapy are studied. This course also covers hygiene and sanitation as they relate to hot and cold hydrotherapy applications. Prerequisite: HED 108, MASS 110. (SCC)

MASS 130 – Massage Technique II (3 cr)

Students begin to learn the initial evaluation and treatment of injuries. The basics of organizing an individual client treatment plan and managing/modifying that plan based on client response are examined. Students begin the instruction of deep tissue massage therapy and learn more advanced palpation skills that enable the practitioner to work deeply without being intrusive and causing consequential pain. Students study pain referral patterns and learn to incorporate basic neuromuscular/trigger point therapy into their bodywork routine. Massage therapy techniques for the geriatric populations are covered. Prerequisite: HED 125, MASS 120, 122, 124, 126. (SCC)

MASS 132 – Body Mechanics II (1 cr)

Massage therapy students continue the process of learning how to avoid fatigue, pain and joint dysfunction as they continue integration of massage technique and practitioner posture. Continuing exercises for therapist strength, balance and body control are examined and practiced. Students are encouraged and taught to maintain the technique of practitioner “center” for effective massage. Students are taught proper stance and effort on the part of the practitioner. Flexibility, strength, grounding and centering will be stressed for coordination, balance, control and stamina during multiple massage sessions. Prerequisite: HED 125, MASS 120, 122, 124. (SCC)

MASS 134 – Kinesiology II (2 cr)

Kinesiology II offers more advanced study of human movement and begins the in depth study of fine motor skill movement in the human body. Emphasis is on the smaller muscular and joint structure of the body, parallel with review of the joint and large muscle groups. Students learn to further recognize areas of muscular compensation. Students study the impact of pain and injury on posture, and recognize the compensatory patterns in the body. In-depth knowledge of the recognition and palpation of bony landmarks are developed, as well as the intrinsic muscular origins and insertions of the body. An analysis of the relationships between synergist and antagonist muscles are covered in depth. Prerequisite: HED 125, MASS 120, 122, 124, 126. (SCC)

MASS 136 – Hydrotherapy II (1 cr)

This course covers further study of hot and cold modalities utilized in the field of massage therapy. Students learn the use of paraffin and the different utilizations of moist and dry heat. Ice massage will be taught as an integral part of injury repair, and alternating heat and cold application will be studied. Thermal, mechanical and chemical changes as a result of hydrotherapy will be examined in depth. Students learn the necessary skills to provide the most commonly requested spa treatments. A specific module in hot stone therapy is included. Students are instructed in salt scrubs, herbal and seaweed wraps and exfoliation. Prerequisite: HED 125, MASS 120, 122, 124, 126. (SCC)

MASS 138 – Student Clinic I (1 cr)

Each student is required to fulfill 33 hours working in a professional clinic environment. During the course of the clinic, students fill the various roles required in managing a clinic: Students will schedule appointments, make reminder phone calls to clients, order massage therapy supplies and maintain supplies for the treatment rooms, as well as keep complete SOAP charts for clients. Prerequisite: HED 125, MASS 120, 122, 124, 126. (SCC)

MASS 140 – Massage Technique III (3 cr)

Students integrate the skills learned in Massage Technique I and II and add more advanced bodywork study. Students become proficient in building a full hour session with a client. Students learn a whole body approach to utilize stretching and unwinding techniques, as well as more advanced palpation methods. Continued and advanced study of injury assessment, evaluation and treatment, and postural analysis is pursued. Included are modules featuring pregnancy massage and on-site chair bodywork. Students also become acquainted with the study of lymphatic drainage massage technique and learn basic massage therapy work for cancer patients. Prerequisite: HED 109, MASS 130, 132, 134, 136, 138. (SCC)

MASS 142 – Anatomy/Physiology/Pathology (5 cr)

This course is a continued overview of human anatomy and physiology, with an emphasis on pathology as it relates specifically to massage therapy work. Students learn to address both health and dysfunction in the various systems of the body and further review various conditions as indications for massage therapy. Prerequisite: HED 109, MASS 130, 132, 134, 136, 138. (SCC)

MASS 144 – Business Practices for the Massage Therapist (5 cr)

In this comprehensive course for the massage therapist, students study all facets of managing a successful professional business. Students learn to identify common business structures and formulate a business plan, including short and long term goals. Students learn the basic aspects of legal agreements and contracts for the professional massage therapy office. Client confidentiality, HCFA forms for billing, and HIPAA regulations are discussed. Client records, financial, tax and legal records are covered, as well as in depth knowledge of federal, state and local regulations for the industry. Students become proficient in effective management of time, including scheduling of clients. Prerequisite: HED 109, MASS 130, 132, 134, 136, 138. (SCC)

MASS 146 – Seminar (1 cr)

In this class, students in the massage therapy program are introduced to a variety of bodywork techniques. Experts in different fields are brought in four times during the quarter to share their area of expertise. Students meet throughout the quarter in professionally supervised groups, to discuss in detail the specific fields of study chosen for presentations. Outside reading in various areas of bodywork fields is required, and students are expected to do a presentation on a specified chosen area of interest. Prerequisite: HED 109, MASS 130, 132, 134, 136, 138. (SCC)

MASS 148 – Student Clinic II (2 cr)

Each student is required to fulfill a number of hours working in a professional clinic environment. During the course of the clinic, students fill the various roles required in managing a clinic: Students will schedule appointments, make reminder phone calls to clients, order massage therapy supplies and maintain supplies for the treatment rooms, as well as keep complete SOAP charts for clients. Students also are required to write narrative reports, progress charts, and letters to physicians. In addition, clinic students are expected to provide quality and professional health care to the clients from the community who choose to engage them. Prerequisite: HED 109, MASS 130, 132, 134, 136, 138. (SCC)

MATHEMATICS**MATH 020 – Mathematics Center 1 (1-5 cr)**

This course covers basic fundamentals of arithmetic including whole numbers, fractions, decimals, ratios, proportions and percentages. It is offered as a variable credit individualized program and designed for students who have a limited background in math. (SCC, SFCC)

MATH 021 – Developmental Math (5 cr)

This course covers basic fundamentals of mathematics for students who need review of numerous topics taught between grades seven and twelve. Whole numbers, fractions, decimals, ratios, proportions, percentages, powers and roots, integers, and algebraic equations are emphasized. (SCC, SFCC)

MATH 030 – Introduction to Texas Instruments Calculators (1 cr)

This course introduces Texas Instruments graphing calculators to students taking MATH 099 or above. Basic calculator functions, graphing and equation solving, and regression equations are emphasized. Prerequisite: Assessment of placement into MATH 099 or higher. (SCC, SFCC)

MATH 035 – The Metric System (1 cr)

Audio-tutorial learning program offered through the math center with emphasis on learning to use metric units naturally: To conceptualize in meters, liters, grams, degrees, Celcius, etc., without tedious conversions from the customary U.S. units. (SFCC)

MATH 070 – Basic Mathematics I (2 cr)

This course is the first course in a three course sequence which is intended for students who have studied Arithmetic but are not ready for Elementary Algebra. Topics will include whole numbers, integers and statistics. Prerequisite: Appropriate placement score. (SFCC)

MATH 071 – Basic Mathematics II (2 cr)

This course is the second course in a three course sequence which is intended for students who have studied Arithmetic but are not ready for Elementary Algebra. Topics will include fractions, decimals and percents. Prerequisite: MATH 070 with a 2.0 or better. (SFCC)

MATH 072 – Basic Mathematics III (2 cr)

This course is the third course in a three course sequence and is intended for students who have studied Arithmetic but are not ready for Elementary Algebra. Topics will include ratios, proportions, geometry and an introduction to algebra. Prerequisite: MATH 071 with a 2.0 or better. (SFCC)

MATH 087 – Math Center 3 (1 cr)

Offered in SCC's Math Center, this course is designed to provide supplemental math tutorial instruction for students concurrently enrolled in SCC math courses. Instructor permission required. Grade option: Pass/Fail. Prerequisite: Proper placement in concurrent math courses. Permission of instructor and concurrent enrollment in an SCC math course. (SCC)

MATH 089 – Math Prep for the Sciences (1 cr)

This course provides a mathematical foundation for students who will be taking introductory science courses. Subjects covered include the metric system, dimensional analysis, scientific notation, significant figures using a scientific calculator, and translating word problems from all areas of science. (SCC)

MATH 090 – Pre-Algebra (5 cr)

A course intended for students who have studied arithmetic but who are not ready for elementary algebra. Numerous introductory topics from grades 9 through 12 are covered which may include operations with signed numbers and rational numbers, simple algebraic equations, properties of real numbers, prime numbers and factoring, exponents and roots, geometric concepts, basic graphs, metrics, basic inequalities, or absolute value. Prerequisite: MATH 021 with 2.0 or better or appropriate placement score. (SCC, SFCC)

MATH 091 – Elementary Algebra I (5 cr)

This course covers beginning algebra concepts for students without high school algebra or those who need a review. Topics will include real numbers, algebraic expressions, equations and inequalities, polynomials and graphing. Other topics may include factoring. Prerequisite: MATH 021 or 090 with a 2.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH 092 – Elementary Algebra II (5 cr)

This course is a continuation of MATH 091. Topics include factoring, rational expressions, linear equations in two variables and systems of equations. Other topics may include radicals and quadratic equations. Prerequisite: MATH 091 with a 2.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH 093 – Algebra I (5 cr)

This course covers beginning algebra concepts for students without high school algebra or those who need a review. Topics will include algebraic expressions, linear equations, lines, linear regression, inequalities, and graphing. Prerequisite: MATH 090 with a 2.0 or better; or appropriate placement score. (SFCC)

MATH 094 – Algebra II (5 cr)

This course is a continuation of MATH 093. Topics include exponents, radicals, power functions, quadratic (models, equations, translations), and right angle trigonometry. Prerequisite: MATH 093 with a 2.0 or better within the last three years or appropriate placement score. (SFCC)

MATH 095 – Mathematics Center 2 (1-5 cr)

This course reviews arithmetic and pre-algebra and is offered as a variable credit individualized program in the Math Center for students preparing to take algebra. Prerequisite: Counselor or instructor referral. (SCC, SFCC)

MATH 096 – Introductory Algebra (5 cr)

This course covers introductory algebra skills. Topics include signed numbers, linear equations, graphing linear equations, linear systems of equations, polynomials and rational expressions. This course is designed for students who need a review of high school algebra. Prerequisite: MATH 021 or 090 with a 3.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH 097 – Intermediate Algebra: A Modeling Approach (5 cr)

This course covers intermediate algebra skills through a modeling approach. Topics include linear, quadratic and exponential functions, and introductions to geometry, probability, sequences and statistics. Prerequisite: MATH 091 and 092 or MATH 096 with a 2.0 or better within the last three years; or appropriate placement score. (SCC)

MATH 098 – Algebra III (5 cr)

This course is a continuation of MATH 094 and covers intermediate algebra skills. Topics include sequences, rational expressions and equations, basic functions that include but are not limited to absolute value, exponential and logarithmic. Prerequisite: MATH 094 with a 2.0 or better or an appropriate placement score. (SFCC)

MATH 099 – Intermediate Algebra (5 cr)

This course covers intermediate algebra skills. Topics include a review of beginning algebra concepts, radicals, inequalities, functions and quadratic functions. Other topics may include exponential and logarithmic functions. Prerequisite: MATH 091 and 092 or 096 with a 2.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH 100 – Vocational Technical Mathematics (1-6 cr)

Basic mathematics from whole numbers through elementary algebra and triangle trigonometry to fulfill the needs of professional/technical students at their current mathematical level. Courses are offered and objectives and credits determined by contract between math department and the requesting professional/technical program. Prerequisite: Registration in the requesting vocational area or permission of instructor. (SCC, SFCC)

MATH& 107 – Math in Society (5 cr)

This course is an option for students needing to satisfy a post-intermediate algebra requirement in which the field of study does not necessitate a specific course. Traditional coursework is combined with a discussion of what mathematics is and does, in addition to an examination of problem-solving techniques. Specific topics may vary at the discretion of the instructor. Prerequisite: MATH 099 with a 2.0 or better within the last three years or appropriate placement score. (SCC, SFCC)

MATH 108 – College Algebra (3 cr)

This course bridges the gap between Intermediate Algebra and the next higher level math classes, specifically Pre-calculus. Topics in this course include, but are not limited to, functions, graphing, exponents, radicals, algebraic fractions, equations, inequalities, and various applications including the use of the graphing calculator. Course is not intended for students who have earned at least a 2.8 in MATH 099. Prerequisite: MATH 099 with a 2.0 or better within the last three years or appropriate placement score. (SFCC)

MATH& 141 – Precalculus I (5 cr)

This course covers college algebra skills, which include polynomial, rational, exponential and logarithmic functions, systems of equations and matrix solutions, and graphs of polynomial functions. Other topics may include sequences, series and summations. Prerequisite: SFCC: Math 099 with a 2.8 or better within the last three years or MATH 108 with a 2.0 or better or appropriate placement score. College level reading scores recommended. SCC: Math 099 with a 2.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH& 142 – Precalculus II (5 cr)

This course introduces circular functions and analytic trigonometry needed for further study in mathematics. Other topics include sequences and series, mathematical induction, conic sections, rotation and translation of axes, DeMoivre's theorem and n th roots of complex numbers, or vectors in the plane. Prerequisite: MATH& 141 with a 2.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH& 148 – Business Calculus (5 cr)

A one-quarter introduction to differential and integral calculus. Specifically oriented for students in management, life sciences and social sciences. Prerequisite: MATH& 141 or MATH 201 with a 2.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH& 151 – Calculus I (5 cr)

This is the first quarter of a three-quarter course in calculus and analytic geometry. This course includes an introduction to limits, rates of change and continuity. The course also deals with the definition of derivative of a function and rules of differentiation, curve sketching and other application of differentiation, introduction to integrals and the Fundamental Theorem of Calculus. Prerequisite: MATH& 141 and MATH& 142 with a 2.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH& 152 – Calculus II (5 cr)

This is the second quarter of a three-quarter course in calculus and analytic geometry. This course also includes applications of integration, derivatives and integrals of exponential, logarithmic and the trigonometric functions, derivatives and integrals of hyperbolic functions and their inverses, indeterminate forms and L'Hopital's Rule, and techniques of integration. Other topics may include vectors and the geometry of space. Prerequisite: MATH& 151 with a 2.0 or better. (SCC, SFCC)

MATH& 153 – Calculus III (5 cr)

This is the third quarter of a three-quarter course in calculus and analytic geometry. This course includes an introduction to differential equations; parametric equations; polar, cylindrical and spherical coordinates; infinite sequences and series. Cylindrical and quadric surfaces, vector valued functions and their space curves, and derivatives and integrals of vector functions also are discussed. Prerequisite: MATH& 152 with a 2.0 or better. (SCC, SFCC)

MATH 201 – Introduction to Finite Mathematics (5 cr)

This course covers basics of mathematical models, including linear, quadratic and polynomial functions, systems of linear equations and inequalities, linear programming and matrices. Elementary concepts of probability and simulation are introduced. Particular emphasis is placed on business and social applications. Prerequisite: MATH 099 with a 2.0 or better within the last three years; or appropriate placement score. College level reading scores recommended. (SCC, SFCC)

MATH 208 – Mathematics for Elementary Education – A (5 cr)

This is the first course in a three course sequence designed for prospective teachers at the elementary school level, focusing on the following topics: Problem solving, set theory, elementary logic, numeration systems, number theory, and the structure of the system of real numbers. Prerequisite: MATH 099 with a 2.0 or better; or appropriate placement score. College level reading score recommended. (SCC, SFCC)

MATH 209 – Mathematics for Elementary Education – B (5 cr)

This is the second course in a three course sequence designed for prospective teachers at the elementary school level, focusing on the following topics: Statistics, probability, and the structure of the system of real numbers including integers, rational and irrational numbers. Prerequisite: MATH 208 with a 2.0 or better. (SCC, SFCC)

MATH 210 – Mathematics for Elementary Education – C (5 cr)

This is the last course in a three course sequence designed for prospective teachers at the elementary school level, focusing on the following topics: Problem solving, structures of geometry, to include shapes, measurements, triangle congruencies, and the coordinate system. Prerequisite: MATH 208 with a 2.0 or better. (SCC, SFCC)

MATH 211 – Mathematics for Elementary Education I (5 cr)

This is the first course in a sequence designed for prospective teachers at the elementary school level, focusing on the following topics: Set theory, numeration systems, number theory, the structure of the system of real numbers and problem solving. Prerequisite: MATH 099 with a 2.0 or better within the last three years; or appropriate placement score. College level reading scores recommended. (SCC, SFCC)

MATH 212 – Mathematics for Elementary Education II (5 cr)

This is the second course in a sequence designed for prospective teachers at the elementary school level, focusing on the following topics: Statistics, geometry and measurement. Prerequisite: MATH 211 with a 2.0 or better within the last three years; or appropriate placement score. (SCC, SFCC)

MATH 213 – Geometry (5 cr)

This course is an introduction to the structure of geometry, the deductive reasoning process, and geometric figures and their properties. Euclidean and non-Euclidean topics are covered. Prerequisite: MATH 099 with a 2.0 or better within the last three years; or appropriate placement score. (SFCC)

MATH 220 – Elementary Linear Algebra (5 cr)

Introduction to linear transformations, matrix theory, vector products, finite dimensional spaces, subspaces, spanning sets, bases, eigenvalues and eigenvectors. Prerequisite: MATH& 152 with a 2.0 or better. (SFCC)

MATH 221 – Introduction to Probability and Statistics (5 cr)

Descriptive statistics, probability, probability distributions, sampling methods, hypothesis testing, statistical inference, correlations, regression and analysis of variance are covered in this course. Prerequisite: MATH 099 with a 2.0 or better within the last three years; or appropriate placement score. College level reading scores recommended. (SCC, SFCC)

MATH 225 – Foundations of Mathematics (5 cr)

This course serves as an introduction to basic concepts of post-calculus mathematics. Topics include logic, methods of proof, set theory, relations and functions. Prerequisite: MATH& 152. (SFCC)

MATH 245 – Discrete Mathematics (5 cr)

An introduction to the theory of the mathematics found in computer science. Topics include logic, proofs, sets, counting, probability, matrices, functions and relations, graphs, and trees. Prerequisite: MATH& 151. (SCC, SFCC)

MATH& 254 – Calculus IV (5 cr)

A course designed to give students an introduction to the basic concepts of multivariable calculus using the tools of linear algebra as applicable; vector functions, real valued functions, differentiation of scalar functions, multiple integration, vector differentiation and integration, transformation of coordinates, Green's Theorem, Stoke's Theorem, Gauss' Theorem and Lagrange Multipliers. Prerequisite: MATH& 153, MATH 220 with a 2.0 or better. (SFCC)

MATH 274 – Elementary Differential Equations (5 cr)

An introduction to ordinary differential equations. Elementary methods of solutions to first-order equations, linear equations of second and higher order, and systems of first-order linear equations. Power series solutions, numerical methods and Laplace Transforms also are covered. Prerequisite: MATH& 153, MATH 220 with a 2.0 or better. (SFCC)

MECHANICAL ENGINEERING TECHNOLOGY**MET 101 – Introduction to Engineering (2 cr)**

This course is an overview of engineering careers, applying concepts and general elements of professionalism, strategies, and computer applications for the engineering office. Basic sketching skills, file management commands, computer terminology, data communication concepts, CAD principles and the practical application of relevant software packages are emphasized. (SCC)

MET 103 – Introduction to Computers for Technology (2-5 cr)

Students learn computer concepts and general elements of a computer system. Basic keyboarding skills, file management commands, computer terminology, data communication concepts, introductory CAD principles and/or the practical application of relevant software packages are emphasized. (SCC)

MET 113 – Computer Fundamentals for Engineering (5 cr)

This course introduces computer concepts and general elements of a computer system. Basic keyboarding skills, file management commands, computer terminology, data communication concepts, CAD principles and the practical application of relevant software packages are emphasized. (SCC)

MET 115 – Technical Mathematics (5 cr)

This course includes theory and practical application of math concepts with an extensive study of the fundamentals of algebra. (SCC)

MET 116 – Technical Mathematics Lab (2 cr)

This course applies the concepts and theories introduced in MET 115. Prerequisite: Concurrent enrollment in MET 115. (SCC)

MET 122 – Applied Technical Math Lab (2 cr)

This course applies the concepts and theories introduced in MET 123. Prerequisite: Concurrent enrollment in MET 123. (SCC)

MET 123 – Applied Technical Mathematics (5 cr)

This course continues with the concepts introduced in MET 115 to prepare students for advanced-level math. Basic and advanced algebra are reviewed, and an introduction to practical geometry and trigonometry also is presented. Prerequisite: MET 115. (SCC)

MET 125 – Introduction to Computer Aided Design (3-5 cr)

Students are introduced to the fundamentals of computer aided design (CAD). AutoCAD software as it applies to drawing in a format using the principles of mechanical, architectural, civil and electrical/electronics is emphasized. Prerequisite: MET 113 or CIS 105 or 112; or approved equivalent. (SCC)

MET 126 – Basic Mathematics II (2 cr)

This course continues of MET 115 to prepare students for advanced-level math. Basic algebra and an introduction to practical geometry and trigonometry are reviewed. Prerequisite: APLED 112 or ARCHT 114 (with permission of instructor). (SCC)

MET 127 – Manufacturing Processes (3 cr)

This course is a comprehensive study of the processing of materials, industry standards and manufacturing techniques used in industry. (SCC)

MET 133 – Introductory Applied Physics (3 cr)

Students are introduced to the basic concepts of our physical world. This course has minimal computational requirements, therefore little math background is required. (SCC)

MET 137 – Applied Technical Mathematics II (5 cr)

This course continues with the concepts introduced in MET 123. A review of algebra and an in-depth study of practical geometry and trigonometry are presented. Prerequisite: MET 123. (SCC)

MET 139 – Hydraulics/Pneumatics (3 cr)

Students are introduced to the application, uses and design of hydraulic and pneumatic components used in industry. Students learn the basics of circuit design. (SCC)

MET 242 – Mechanical Design Fundamentals (4 cr)

This course is a comprehensive study of the design and drawing of machinery components including fasteners, springs, gears, belt drives, chain drives, couplings and bearings. (SCC)

MET 244 – Tolerancing Systems (3 cr)

This course introduces the use of geometric calculations and measuring instruments to determine true tolerances on detail drawings. Prerequisite: MET 242. (SCC)

MET 245 – Applied Physics (5 cr)

This course introduces basic concepts of our physical world. Application of physics laws using algebra, trigonometry and geometry is employed. A minimum math background equal to MATH 100 or MET 123 is required to meet computational requirements. Prerequisite: MATH 100 or MET 123. (SCC)

MET 247 – Shop Practices (3 cr)

This course introduces safety practices in the shop. Students learn the basic operation techniques of the lathe, mill, drill press, and various hand and power tools used in a typical shop. Joining techniques such as welding, brazing, soldering and mechanical fasteners are included. (SCC)

MET 250 – Strength of Materials/Materials Science (5 cr)

Students study the strength of materials and the effects of stress. Types of stress and deformation, stress-strain diagrams, stress analysis and design problems are emphasized. Applied machine design, and structural and beam design projects are included. Study the characteristics of a variety of materials including specifications, tolerance, weight, and heat treating capabilities. Prerequisite: MET 245. (SCC)

MET 253 – Materials Science (2 cr)

This course is a comprehensive study of the characteristics of a variety of materials including their standards and specifications, tolerance, weight, and heat treating capabilities. Prerequisite: MET 245. (SCC)

MET 254 – Statics (5 cr)

Students study forced systems including vector force principles, forces and reactions at supports, force vector diagrams, coplanar force systems, stresses in truss systems and applied problems. Prerequisite: MET 245. (SCC)

MET 255 – Technical Applications I (2-5 cr)

Students practice applied projects related to engineering technology that include interdepartmental projects, CAD design, shop skills and computer applications. This course may substitute cooperative education courses. Prerequisite: MET 247. (SCC)

MET 262 – Electrical Theory for Engineering (5 cr)

This course introduces the concepts of basic electrical theory including alternating and direct current. Component identification and manufacturing processes of printed circuit boards, integrated circuits and wiring hardware are emphasized. Students learn to read and create electrical schematic diagrams and flow/logic charts. (SCC)

MET 263 – Machine Controls (2 cr)

The course introduces machine control systems. Students identify and design electro-mechanical, electronic and hydraulic, and pneumatic control systems. The function of programmable logic controllers and basic programming techniques are emphasized. (SCC)

MET 264 – Technical Applications II (2-5 cr)

This course continues with the applications offered in MET 255 with emphasis on special projects related to manufacturing practices and shop personnel interactions. Prerequisite: MET 255. (SCC)

MET 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

MET 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

See program/course abbreviation key on page 143.

MET 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

MEDICAL ASSISTANT

MA 101 – Administrative Medical Assistant I (5 cr)

This course introduces students to the medical assistant profession and the office environment. Professional organizations, federal regulations and requirements, and legal concepts for the field are emphasized. Prerequisite: Admission into the medical assistant program and CIS 110. (SCC)

MA 102 – Clinical Medical Assistant I (3 cr)

This course introduces students to hands-on patient care. Topics include the role of the medical assistant in patient care, nutrition, vital signs and measurements. Prerequisite: Admission into the medical assistant program and CIS 110. (SCC)

MA 111 – Administrative Medical Assistant II (3 cr)

Students work with medical office computer applications. Medical records and patient scheduling are introduced. Other topics include written communications and provider schedule management. Prerequisite: MA 101, 102. (SCC)

MA 112 – Clinical Medical Assistant II (5 cr)

This course submerges students in the clinical phase of medical assisting. Topics include patient history, interviews and documentation, asepsis, infection and disease control, basic physical exams, principles of x-ray and EKG equipment, rehabilitative medicine, emergencies, and first aid. Prerequisite: MA 101, 102. (SCC)

MA 120 – Medical Assistant Coding and Reimbursement (3-5 cr)

Medical insurance terminology and billing procedures are covered in this course. Students learn to use the CPT and ICD-9-CM for basic ambulatory care setting coding needs. Legal and ethical issues regarding insurance billing also are covered. Prerequisite: Successful completion of MA 101, 102, 111, 112 and concurrent enrollment in MA 122, 125. (SCC)

MA 121 – Administrative Medical Assisting (5 cr)

Administrative and management procedures needed to effectively manage the office, monitor finances, maintain supplies, perform quality improvement studies, and risk management profiles are taught. Bookkeeping and accounting principles, communication negotiation and psychological concepts are studied and practiced. Introduction to the student externship is given. Students spend four hours a week for eight weeks practicing skills learned in a medical office. Prerequisite: Successful completion of first and second quarters and concurrent enrollment in MA 120, 121, 122. (SCC)

MA 122 – Clinical Medical Assistant III (5 cr)

This course offers advanced clinical skills for the medical assistant. Specialty exams and sterile procedures are emphasized. Students learn about collecting and processing laboratory specimens, and the proper use of microscopes. An overview of microbiology also is offered. Prerequisite: HED 108, 125, MA 111, 112. (SCC)

MA 125 – Ambulatory Care Setting Pharmacology (5 cr)

This course covers principles of pharmacology. Medication classifications will be studied according to body system and usage. Students will learn the different routes for medication administration, medication actions, contraindications and side effects. Prerequisite: Successful completion of MA 101, 102, 111, 112 and concurrent enrollment in MA 120, 122. (SCC)

MA 131 – Practice Finances and Management (3 cr)

This course offers advanced administrative skills for the medical assistant. Topics include practice finances, accounting practices and the medical assistant in the roll of an office manager. Prerequisite: HED 109, MA 121, 122. (SCC)

MA 132 – Clinical Medical Assistant IV (5 cr)

This is the final course in preparation for clinical practice. The content is concentrated on injection and venipuncture techniques. Medication administration and dosage calculations are covered. Prerequisite: HED 109, MA 121, 122. (SCC)

MA 141 – Medical Assistant Seminar (1 cr)

Topics covered enhance students' abilities at the clinical site. They review important topics by applying the concepts required in the clinical area. Mock national certificate exams are offered. Prerequisite: HED 109, MA 121, 122, 131, 132 and concurrent enrollment in MA 142. (SCC)

MA 142 – Medical Assistant Externship (6 cr)

Students work under the supervision of facility personnel or the instructor in a physician's office. They utilize and apply the administrative and clinical skills learned in an actual ambulatory care setting. Prerequisite: HED 109, MA 121, 122, 131, 132 and concurrent enrollment in MA 141. (SCC)

MEDICAL OFFICE SPECIALIST

MSEC 101 – Medical Terminology and Anatomy (5 cr)

Students are introduced to the unique language of medicine emphasizing basic medical word structure and commonly used clinical terms. An overview of normal anatomy and anatomic terms is accomplished prior to a study of common diseases and disorders of the human body with a system-by-system approach. (SCC)

MSEC 102 – Medical Terminology and Anatomy (5 cr)

This course continues with the concepts introduced in MSEC 101 emphasizing the unique language of medicine, normal anatomy and function, and disease and disorders of the body with a system-by-system approach. Prerequisite: MSEC 101 or permission of instructor. (SCC)

MSEC 103 – Disease Processes (5 cr)

Students study common diseases and conditions including prevention etiology, signs and symptoms, diagnostic and treatment modalities, prognoses, and the use of medical references for research and verification. Prerequisite: MSEC 101 and 102 or permission of instructor. (SCC)

MSEC 108 – Medical Office Computing (5 cr)

Students receive hands-on training using financial, scheduling, word processing and clinical database software packages utilizing a microcomputer. Prerequisite: Keyboarding skills. (SCC)

MSEC 120 – Human Relations/Communications for Medical Office Personnel (5 cr)

Students learn the principles of therapeutic communications, human growth and development and their application to specific medical circumstances. (SCC)

MSEC 121 – Medical Office Reception (5 cr)

This course introduces students to the profession of the administrative medical assistant and how it fits within the health care environment and health care teams. Topics include legal and ethical concepts, telephone and scheduling techniques, medical records management rules and regulations, and how to create a comfortable facility atmosphere. Students enhance their ability to research using the Internet and library, create written reports and make round-table presentations. Prerequisite: BT 231. (SCC)

MSEC 123 – Medical Office Coding (5 cr)

This course introduces the identification of diagnoses and services by code. Transformation of verbal descriptions of diseases, injuries and procedures into numeric designations is presented using the Current Procedural Terminology (CPT) and the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) coding books. Prerequisite: MSEC 102 or concurrent with MSEC 102. (SCC)

MSEC 124 – Medical Office Insurance Billing (5 cr)

This course introduces major, nationwide and local medical insurance programs. Students learn to simplify the process of filing claim forms and gain an understanding of medical insurance requirements for billing, confidentiality, coding, referrals and professional fees. Students also develop an "insurance information" notebook for future reference. Prerequisite: MSEC 101 and concurrent enrollment in MSEC 125. (SCC)

MSEC 125 – Medical Office Bookkeeping (5 cr)

This course introduces medical office billing procedures using medical management software. An interactive approach allows students to open new accounts, post typical business transactions, and open and close posting cycles. An overview of account aging, billing and collection procedures is included. Prerequisite: ACCT 151, BUS 103 and concurrent enrollment in MSEC 124. (SCC)

MSEC 130 – Chiropractic Philosophy (3 cr)

Students learn the history of the chiropractic field including discussions about the early pioneers who practiced chiropractic methods, used philosophical principles and developed chiropractic techniques. (SCC)

MSEC 131 – Fundamentals of Medical Word Processing (5 cr)

This course introduces the fundamentals of medical word processing including transcription of medical office correspondence and reports (medicolegal, history and physical, consultation, and discharge summaries). Students learn various mechanical formats used to prepare these reports. The application of medical terminology to develop familiarity with spoken terms is emphasized. Prerequisite: Typing speed of 50 wpm. (SCC)

MSEC 132 – Medical Transcription I (10 cr)

Students develop skills in transcription of medical dictation and word processing software using personal computers to transcribe selected medical correspondence and medical reports. A review of language skills including vocabulary, grammar and punctuation, capitalization, numbers, figures and abbreviations is presented. Transcription of reports (history and physical, operative, and discharge summaries) is emphasized. An academic study of related terminology also is included. Prerequisite: MSEC 131. (SCC)

MSEC 133 – Medical Transcription II (10 cr)

Students continue to develop the skills in the transcription of dictation utilizing proofreading and editing skills while meeting progressively demanding accuracy and productivity standards. Transcription of pathology, radiology, diagnostic testing and industrial medical reports is emphasized. An academic study of related terminology is included. Prerequisite: MSEC 133. (SCC)

MSEC 140 – Portfolio Development (5 cr)

This course enables students to transfer a portion of significant prior learning into elective credits through the development of a portfolio. (SCC)

MSEC 150 – Medical Transcription Practicum (8 cr)

Students must complete a minimum of 264 hours of on-the job medical transcription training. Consultations, histories and physicals, operative reports, discharge summaries, and other medical reports are emphasized. Prerequisite: MSEC 133. (SCC)

MSEC 180 – Basic Medical Assisting (5 cr)

Students are introduced to the basic skills and knowledge necessary for medical assistants in a typical medical office environment. Prerequisite: MSEC 102. (SCC)

MSEC 205 – Medical Office Management Procedures (5 cr)

This course focuses on management responsibilities as they apply to a medical office environment. Students learn collection and billing procedures, management of space, equipment, personnel records, finances and reports. Prerequisite: MSEC 124, 125. (SCC)

MSEC 220 – Chiropractic Back Office Procedures (5 cr)

Students develop skills to assist the chiropractor with the care of patients. They learn to maintain patient records and differentiate between comprehensive and focused exams. Prerequisite: MSEC 130 and concurrent enrollment in MSEC 230. (SCC)

MSEC 223 – Medical Office Coding II (5 cr)

This course continues with the concepts introduced in MSEC 123. A more comprehensive study of the ICD-9-CM and CPT coding systems is presented. Prerequisite: MSEC 123. (SCC)

MSEC 224 – Chiropractic Anatomy (3 cr)

Students learn the anatomy and physiology of the central and peripheral nervous systems and how to identify aspects of the musculoskeletal system. Prerequisite: MSEC 102. (SCC)

MSEC 230 – Chiropractic Office Procedures (3 cr)

Students learn office procedures specific to a chiropractic office including coding and billing practices. Chiropractic philosophy is presented. Prerequisite: BT 231, MSEC 121. (SCC)

MSEC 235 – Radiology and Advanced Imaging Procedures (5 cr)

This course emphasizes safety issues affecting patients and employees with regard to proper X-ray and evaluation techniques. Students learn the steps necessary for developing X-rays and assessing radiographs. Prerequisite: Concurrent enrollment in MSEC 250. (SCC)

MSEC 236 – Radiology and Advanced Imaging Lab (1 cr)

Students apply the techniques introduced in MSEC 235 in an office setting. Prerequisite: MSEC 220 and concurrent enrollment in MSEC 235. (SCC)

MSEC 240 – Medical Office Transcription (5 cr)

Students learn to process, type and transcribe a variety of office reports and other dictation including chart notes, medical reference letters, medicology reports, consultation letters, interoffice correspondence, manuscripts and abstracts. Prerequisite: Typing speed of 40 wpm with 3 or fewer errors by exam. MSEC 102 or concurrent enrollment. (SCC)

MSEC 241 – Medical Office Transcription (5 cr)

This course continues with the applications introduced in MSEC 240 with an emphasis on transcription of special medical reports, referral letters and medical office dictation. Accuracy and speed in transcribing tapes are stressed. An academic study of related terminology is presented. Prerequisite: MSEC 240. (SCC)

MSEC 250 – Chiropractic Exam Procedures (5 cr)

Students learn the procedures for compiling a patient's history, conducting a physical examination, assessing the "complaint" area and identifying evaluation methods. Prerequisite: MSEC 130, 220 and concurrent enrollment in MSEC 251. (SCC)

MSEC 251 – Chiropractic Exam Procedures Lab (1 cr)

Students apply the techniques developed in MSEC 250 to review a patient's history, evaluate and assess the condition of the patient, and chart the information. Prerequisite: Concurrent enrollment in MSEC 250. (SCC)

MSEC 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

MSEC 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

MSEC 284 – Medical Internship Seminar (1 cr)

Students share office experiences, utilize problem-solving skills and participate in career-related activities. Prerequisite: Medical clerical careers students only and MSEC 121 or 133. If earning a medical secretary degree, this must be your final quarter. Concurrent enrollment in MSEC 287. (SCC)

MSEC 285 – Medical Office Reception Internship (2-3 cr)

Students are placed in Spokane area medical offices to observe and perform receptionist duties in the medical office environment. Prerequisite: Medical office specialist degree or currently enrolled in the final quarter of the medical office receptionist or medical office insurance clerk programs. Students must also have three "recommended-for-internship" SEA forms. (SCC)

MSEC 286 – Medical Insurance Billing Internship (2 cr)

Students observe and apply classroom skills in a Spokane area health care provider office environment for a minimum of 66 hours. Prerequisite: Medical office insurance clerk certificate students currently enrolled in their final quarter. Must have three "recommended-for-internship" SEA forms. (SCC)

MSEC 287 – Medical Specialist Internship (2 cr)

Students observe and apply classroom skills in a Spokane area health care provider office environment for a minimum of 66 hours. Prerequisite: Medical Office Specialist degree students. Must have three "recommended-for-internship" SEA forms. (SCC)

MSEC 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

MSEC 289 – Chiropractic Internship (3 cr)

Students observe and apply classroom skills in a "real" health care provider office environment for a minimum of 99 hours. Prerequisite: MSEC 121, 124, 125, 130 and concurrent enrollment in MSEC 284. (SCC)

MSEC 290 – Current Chiropractic Topics (3 cr)

Students explore current issues relating to the chiropractic field and the role of professional organizations and their policies. Students research topics related to the field and make presentations to a panel of chiropractors. (SCC)

MSEC 295 – Chiropractic Internship (6 cr)

Students work under the direction of a chiropractor to refine the skills developed in the classroom. Prerequisite: MSEC 235, 250 and concurrent enrollment in MSEC 284. (SCC)

MILITARY SCIENCE**MILSC 101 – Introduction to Leadership I (2 cr)**

This course is a nontechnical introduction to military science. Students increase self-confidence through team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations and basic marksmanship. They learn fundamentals of leadership in a profession in both classroom and outdoor laboratory environments intended to develop students and help them cope with life as a student and as a productive member of society. Highly encouraged, but optional, participation in a one weekend exercise and participation in one-hour sessions of physical fitness are offered. (SCC, SFCC)

MILSC 102 – Introduction to Leadership II (2 cr)

Students learn and apply principles of effective leading and team development. This course helps students reinforce self-confidence through participation in physically and mentally challenging exercises with upper-division ROTC students. It is intended to help students develop skills needed to increase their chances of success in the college environment. Students develop communication skills to improve individual performance and group interaction. They relate organizational ethical values to the effectiveness of a leader. Highly encouraged, but optional, participation in one-hour sessions of physical fitness are offered. (SCC, SFCC)

MILSC 103 – Introduction to Leadership III (2 cr)

Students build on and apply principles of effective leading and team development in the classroom and at the leadership laboratory. They continue to develop self-confidence through participation in physically and mentally challenging exercises with upper-division ROTC students. They develop skills to increase chances of success in a college environment, with special emphasis on communication skills, individual performance, social skills and group interaction. Highly encouraged, but optional, participation in one weekend exercise and participation of one-hour sessions of physical fitness are offered (SCC, SFCC)

MILSC 110 – Leadership Laboratory I (1 cr)

A practical application course designed to complement MILSC 100, this course introduces the student to the fundamentals of the professional soldier through classroom instruction and practical application of various military skills such as marching, tactics, care and maintenance of military equipment and land navigation. Field training practical exercises are conducted several times each term on weekends. While participation is not mandatory, it is highly recommended. (SCC, SFCC)

MILSC 111 – Leadership Laboratory II (1 cr)

A continuation of MILSC 110, this is a practical application course which complements MILSC 101. Prerequisite: Concurrent enrollment in MILSC 101. (SCC, SFCC)

MILSC 115 – Rifle Marksmanship (2 cr)

Instruction in the fundamentals of rifle marksmanship using 22-caliber match quality rifles (provided by the military science department). Participation in ROTC is not necessary. (SCC, SFCC)

MILSC 201 – Self/Team Development (3 cr)

Students learn and apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. They develop skills in oral presentations, writing concisely, planning for events, coordination of group efforts, advanced first aid, land navigation and basic military tactics. They learn fundamentals of ROTC's Leadership Development Program. Two hours of classroom instruction and a required two-hour leadership lab each week are offered. Highly encouraged, but optional, participation in one weekend exercise and participation in one-hour sessions of physical fitness also are offered. (SCC, SFCC)

MILSC 202 – Individual/Team Military Tactics (3 cr)

This course is an introduction to individual and team aspects of military tactics in small unit operations. Includes use of radio communications, making safety assessments, movement techniques, planning for team safety/security and methods of pre-execution checks. Practical exercises with upper-division ROTC students are provided. Students learn techniques for training others as an aspect of continued leadership development. Two hours of classroom instruction and a required two-hour leadership lab each week are offered. Highly encouraged, but optional, participation in one weekend exercise and participation in one-hour sessions of physical fitness also are offered. (SCC, SFCC)

MILSC 203 – Team Leadership/Military Tactics (3 cr)

An examination of the role of leadership and management in the context of a small organization element is provided with this course. Topics covered include motivation, handling disruptive influences, counseling skills, leadership styles and group dynamics. Students have an opportunity to identify their own strengths and weaknesses as leaders and managers. The course is presented in the context of military leadership, but the concepts can be applied in any context where leadership and management are essential. Highly encouraged, but optional, participation in one weekend exercise and participation in one-hour sessions of physical fitness are offered. (SCC, SFCC)

MILSC 210 – Leadership Laboratory III (1 cr)

A practical application course designed to complement MILSC 201, this course introduces the student to the fundamentals of the professional soldier through classroom instruction and practical application of various military skills such as marching, tactics, care and maintenance of military equipment, and land navigation. Field training practical exercises are conducted several times each term on weekends. While participation is not mandatory, it is highly recommended. Prerequisite: Concurrent enrollment in MILSC 201. (SCC, SFCC)

MILSC 211 – Leadership Laboratory IV (1 cr)

A continuation of MILSC 110, this is a practical application course that complements MILSC 202. Prerequisite: Concurrent enrollment in MILSC 202. (SCC, SFCC)

MILSC 290 – Professional Military Development (1-5 cr)

An intensive but flexible course designed to allow selected students to qualify for the ROTC advanced course during the summer. This course includes an examination of the major elements of United States military history, leadership styles and principles, a comparison of various international military systems, as well as a broad range of military skills including drill and ceremonies, land navigation, first aid, tactics, use of military equipment, and physical conditioning. Prerequisite: Permission of the professor of military science. (SCC, SFCC)

MUSIC**MUSC 100 – Music Fundamentals (3 cr)**

Basics of music, including rhythm, melody and harmony, scales, keys, chords, and an introduction to the keyboard. (SFCC)

MUSC& 105 – Music Appreciation (5 cr)

Listening and understanding of common musical forms, idioms and styles; and how music relates to us today. (SCC, SFCC)

MUSC 106 – History of Popular Music (5 cr)

The development of popular American music from 1900 to the present. Pre-20th century influences and the development of jazz, blues, the swing era, rhythm and blues, rock and roll, country music, the British invasion, funk, electronic influences and fusion. (SCC, SFCC)

MUSC 108 – Music and Cinema (5 cr)

This course examines the various functions of music in film and traces the historical development of film music. (SCC, SFCC)

MUSC 109 – World Music (5 cr)

This course explores several musical cultures throughout the world, including but not limited to Africa, the Americas, Asia, Near East, Europe and South Pacific. The course is designed to enhance student's appreciation for the diversity of music throughout the world as well as the people that perform it. Students gain an understanding of features in the music that distinguish one style from another and the cultural and social-historical factors that shape the development of music. Lectures, films, recordings and live presentations assist students in their understanding of course topics. Though a knowledge of music is helpful, a music background is not required for this course. (SCC, SFCC)

MUSC 111 – Improvisation I (4 cr)

Beginning and intermediate students learn the basics of improvisation. Linear and horizontal melodic concepts, including scales and modes, chords, inversions, alterations and harmonic progressions are presented. Students may register with any instrument. Prerequisite: AUDIO 116 or MUSC 100 or MUSC& 141. (SFCC)

MUSC 112 – Improvisation II (4 cr)

Students learn more advanced techniques of linear improvisation, including application of scales, modes, altered chords, chordal substitutions and harmonic progressions. Prerequisite: MUSC 111. (SFCC)

MUSC 114 – Contemporary Harmony (3 cr)

This course includes the study of harmony as used in contemporary popular music, jazz, commercial media and film, including chords, scales, harmonic progressions, the blues, chord scale relationships, improvisation theory, notation and dictation. Students develop aural skills through listening and analysis. Prerequisite: AUDIO 116 or MUSC& 141, and MUSC 166 or 180 and concurrent enrollment in MUSC 167 or 180. (SFCC)

MUSC 115 – Symphony Orchestra (1-3 cr)

Students perform an extensive repertoire of quality orchestral music from the Baroque era to the present. Each course may be taken up to three times. (SFCC)

MUSC 124 – History of Jazz (5 cr)

A survey of jazz in which recent investigations in cultural anthropology and American history, as well as the traditional viewpoints of music history and theory, are reflected. (SCC, SFCC)

MUSC 127 – Chamber Singers (1-3 cr)

A select performing ensemble whose purpose is to study, practice and perform representative chamber music from the 16th through the 20th centuries. Each course may be taken up to three times. Prerequisite: Permission of instructor. (SFCC)

MUSC 134 – Jazz Combo (1 cr)

Jazz combos offer students an opportunity to play jazz in a small group format, concentrating on improvisation in many different styles. The combos perform regularly, including tours, jazz festivals and professional engagements. Each course may be taken up to three times. (SFCC)

MUSC 139 – All College Chorus (1-2 cr)

Elementary work in mixed chorus ensemble singing together with study of appropriate choral literature. Each course may be taken up to three times. (SFCC)

MUSC& 141 – Music Theory I (5 cr)

Students develop skills in writing and understanding correct musical notation, major and minor scales, and modes. Students write and apply intervals and triads to simple melodic and harmonic exercises. An emphasis is placed on the structural elements of music. (SFCC)

MUSC& 142 – Music Theory II (5 cr)

Students continue to study scales and modes and their application to melodic and harmonic composition. Students employ the use of triads and seventh chords, including all inversions, in four-part harmonic progressions, and continue to develop aural recognition of scales, intervals and triads with an emphasis on melodic dictation, rhythm, and ear training. Prerequisite: MUSC& 141. (SFCC)

MUSC& 143 – Music Theory III (5 cr)

This course focuses on modulation, secondary dominants and leading tone chords. Students are introduced to chromatic harmony, and analyze and write chorale-type compositions with an emphasis on the soprano/bass framework. Chordal analysis, including cadences and non-chordal tones, is emphasized. Aural recognition of scales, intervals and chords, with exercises in melodic dictation, rhythm, and ear training also are included. Prerequisite: MUSC& 142. (SFCC)

MUSC 144 – Commercial Music Groups (1 cr)

Students study and perform current popular music styles including rock, blues, fusion, top 40, country and standards. Each course may be taken up to three times. (SFCC)

MUSC 145 – Concert Band (1-3 cr)

Students perform an extensive repertoire of master works by composers from the Renaissance to the present. Each course may be taken up to three times. (SFCC)

MUSC 148 – Stage Band (1-3 cr)

Students study and perform modern trends and practices of jazz and related music areas. Individual music arrangements can be studied and created. Each course may be taken up to three times. (SFCC)

MUSC 151 – String Ensemble (1 cr)

This course is open to all students with reasonable proficiency on string instruments. Music performed surveys string repertoire for all combinations from masterworks of the baroque, classic, romantic and modern eras. Each course may be taken up to three times. (SFCC)

MUSC 166 – Functional Piano I (2 cr)

Students develop piano performance techniques relevant and practical for today's professional musician. Synchronized with MUSC 114, this course includes the study of scales, chords, voicings, harmonic progressions, chord/scale relationships and basic comping, and improvisational techniques. This course is essential for all students of jazz and commercial music, regardless of their primary instrument. (SFCC)

MUSC 167 – Functional Piano II (2 cr)

Students develop piano performance techniques relevant and practical for today's professional musician. This course includes the study of scales, chords, voicings, harmonic progressions, chord/scale relationships and basic comping, and improvisational techniques. This course is essential for all students of jazz and commercial music, regardless of their primary instrument. Prerequisite: MUSC 166 or permission of instructor. (SFCC)

MUSC 170 – Fundamentals of Singing (1 cr)

Students study the fundamentals of singing through participation, performance and observation in a class setting. (SFCC)

MUSC 171 – Advanced Fundamentals of Singing (2 cr)

Students continue to develop the technical skills of singing with an emphasis on the application of technique to repertoire. This course may be repeated up to three times, advancing in repertoire with the advice of the instructor. English, as well as other languages, will be included. Prerequisite: MUSC 170 or permission of instructor. (SFCC)

MUSC 176 – Beginner Piano Class I (2 cr)

This course provides a basic hands-on introduction to keyboard musicianship and proficiency within a group setting. Keyboard application skills include an introduction to music reading, rhythms, improvisations, technique, solo repertoire and group ensembles. This course is intended for the complete beginner or for students with little experience in piano. (SFCC)

MUSC 177 – Beginner Piano Class II (2 cr)

Students continue to develop keyboard musicianship and proficiency within a group setting. Keyboard application skills include an introduction to chord progressions, harmonization, transposition, and further development of sight-reading, two-handed rhythms, technique, solo repertoire and group ensembles. Prerequisite: MUSC 176 or permission of instructor. (SFCC)

MUSC 178 – Beginner Piano Class III (2 cr)

Students continue to develop keyboard musicianship and proficiency within a group setting. Keyboard application skills include an introduction to secondary chords, varied accompaniment patterns, and further development of sight-reading, two-handed rhythms, technique, solo repertoire and group ensembles. Prerequisite: MUSC 177 or permission of instructor. (SFCC)

MUSC 180 – Private Lessons (1 cr)

Private instruction on voice or instrument. A study of the fundamentals of tone production, technical requirements and overall musicianship, with an emphasis on solo literature and performance. Each course may be taken up to three times. (SFCC)

MUSC 182 – Guitar Class I (1 cr)

Students learn the fundamentals of note reading, basic theory and technical skills for both hands using a fingerstyle approach. Students are required to furnish their own instrument. (SFCC)

MUSC 204 – Arranging I (5 cr)

The study of harmony and arranging techniques in the contemporary jazz ensemble. This includes voicings, progressions, styles, forms and contrapuntal ideas. Prerequisite: MUSC 114 and MUSC 166, or MUSC& 141. (SFCC)

MUSC 210 – Improvisation III (5 cr)

Students learn advanced improvisation skills with an emphasis on the current trends of working professionals. Students analyze recorded solos and gain transcription experience. Prerequisite: MUSC 112. (SFCC)

MUSC 211 – Improvisation IV (5 cr)

Students learn advanced concepts of improvisation including altered chords, altered scales, substitutions and analysis of recorded professionals. Prerequisite: MUSC 210. (SFCC)

MUSC 212 – Improvisation V (3 cr)

Students study advanced concepts of improvisation including altered chord scales and progressions. Students will analyze and perform contemporary jazz styles. Prerequisite: MUSC 211. (SFCC)

MUSC 214 – Contemporary Harmony II/Songwriting (5 cr)

This is a study of major pop/rock, folk/country, and adult contemporary musical styles and the writers, producers, and artists who shape the music. Learn about many musical styles while striving to define your own. Develop instrumental and lyric songwriting techniques. Prerequisite: MUSC 114, 167 and concurrent enrollment in AUDIO 217, 218 and 213 or 255. (SFCC)

MUSC 215 – Symphony Orchestra (1-3 cr)

Students perform an extensive repertoire of quality orchestral music from the Baroque era to the present. Each course may be taken up to three times. Prerequisite: MUSC 115. (SFCC)

MUSC 227 – Chamber Singers (1-3 cr)

A select performing ensemble whose purpose is to study, practice and perform representative chamber music from the 16th through the 20th centuries. Each course may be taken up to three times. Prerequisite: Permission of instructor. (SFCC)

MUSC 234 – Jazz Combo (1 cr)

Jazz combos offer students an opportunity to play jazz in a small group format, concentrating on improvisation in many different styles. The combos perform regularly, including tours, jazz festivals and professional engagements. Each course may be taken up to three times. Prerequisite: MUSC 134 or permission of instructor. (SFCC)

MUSC 235 – History of Western Music I (4 cr)

Development of music in Western culture from classical antiquity through the Italian Renaissance. (SCC)

MUSC 236 – History of Western Music II (4 cr)

Development of music in Western culture from the advent of the Baroque style through late 18th century Viennese period. (SCC)

MUSC 237 – History of Western Music III (4 cr)

Development of music in Western culture from early 19th century romanticism to the present. (SCC)

MUSC 239 – All College Chorus (1-2 cr)

Elementary work in mixed chorus ensemble singing together with study of appropriate choral literature. Each course may be taken up to three times. (SFCC)

MUSC& 241 – Music Theory IV (5 cr)

This course focuses on practical writing and analytic experience in diatonic and chromatic harmony used during the 18th and 19th centuries. Students study musical forms, basics for arranging, orchestrating and composing, ear training and sight singing in solfege. Prerequisite: MUSC& 143 or permission of instructor. (SFCC)

MUSC& 242 – Music Theory V (5 cr)

Students continue to study music theory with further discussion on secondary functions, modulatory techniques, chromaticism, altered and borrowed chords, mode mixtures, augmented sixth chords and modulations, ear training and sight singing. Students compose the exposition of a piano sonata. Prerequisite: MUSC& 241. (SFCC)

MUSC& 243 – Music Theory VI (5 cr)

Students continue to study the harmonic vocabulary and elements in late romanticism and the 20th century, impressionism, scales, parallelism, pandiatonicism, set theory, 12-tone technique, serialism, electronic music, advanced sight singing and ear training. Prerequisite: MUSC& 242. (SFCC)

MUSC 244 – Commercial Music Groups (1 cr)

Students study and perform current popular music styles including rock, blues, fusion, top 40, country and standards. Each course may be taken up to three times. Prerequisite: MUSC 144 or permission of instructor. (SFCC)

MUSC 245 – Concert Band (1-3 cr)

Students perform an extensive repertoire of master works by composers from the Renaissance to the present. Each course may be taken up to three times. Prerequisite: MUSC 145. (SFCC)

MUSC 248 – Stage Band (1-3 cr)

Students study and perform modern trends and practices of jazz and related music areas. Individual music arrangements can be studied and created. Each course may be taken up to three times. Prerequisite: MUSC 148. (SFCC)

MUSC 251 – String Ensemble (1 cr)

This course is open to all students with reasonable proficiency on string instruments. Music performed surveys string repertoire for all combinations from masterworks of the baroque, classic, romantic and modern eras. Each course may be taken up to three times. (SFCC)

MUSC 276 – Advanced Piano Class I (2 cr)

Students learn advanced keyboard musicianship and proficiency within a group setting. Keyboard application skills include an introduction to basic conducting and further development of keyboard technique, harmonization, transposition, improvisation, sight-reading, solo repertoire, and group ensembles. Prerequisite: MUSC 178 or permission of instructor. (SFCC)

MUSC 277 – Advanced Piano Class II (2 cr)

Students continue to develop advanced keyboard musicianship and proficiency within a group setting. Keyboard application skills include an introduction to varied chord progressions using secondary chords and inversions. The course includes group discussions on performance anxiety and related issues, and further development of keyboard technique, harmonization, transposition, improvisation, sight-reading, solo repertoire and group ensembles. Prerequisite: MUSC 276. (SFCC)

MUSC 278 – Advanced Piano Class III (2 cr)

Students continue to develop advanced keyboard musicianship and proficiency within a group setting. Keyboard application skills include an introduction to chorale score reading, accompaniment and further development of keyboard technique, harmonization, transposition, improvisation, sight-reading, solo repertoire and group ensembles. Prerequisite: MUSC 277. (SFCC)

MUSC 280 – Private Lessons (1 cr)

Private instruction on voice or instrument. A study of the fundamentals of tone production, technical requirements and overall musicianship, with an emphasis on solo literature and performance. Each course may be taken up to three times. (SFCC)

MUSC 282 – Guitar Class II (1 cr)

Students continue to develop note reading, basic theory and technical skills for both hands using a fingerstyle approach. Students are required to furnish their own instrument. Prerequisite: MUSC 182 or permission of instructor. (SFCC)

NATURAL RESOURCE MANAGEMENT**NATRS 101 – Environmental Conservation (5 cr)**

This course is a general introductory course designed to provide students with a basic knowledge of the principles of conservation. Emphasis is on the renewable natural resources, soil, water, forest, range, wildlife and recreation. (SCC)

NATRS 110 – Forest Plant Science (5 cr)

This course is designed to give the student basic knowledge concerning the biological principles and relationship between plants and man. A basic knowledge of the plant-dependent world ecosystem that supports man is emphasized. (SCC)

NATRS 111 – Natural Resources Seminar (3 cr)

Students obtain a basic introduction to the field of natural resources. Employment opportunities, salaries and typical job duties are discussed. The organizational structure of state and federal agencies, and selected topics in natural resources are presented. Leadership skills and responsibilities are practiced by participation in the Natural Resources Association. Prerequisite: Natural resources students only or permission of instructor. (SCC)

NATRS 112 – Natural Resources Mathematical Applications (5 cr)

Students learn basic arithmetic and algebra skills necessary for application in the fields of natural and water resources. (SCC)

NATRS 120 – Basic Computer Applications in Natural Resources (2 cr)

This is a beginning course in the use of computers in natural resource management. Use of specific software in a setting similar to on-the-job computer use in natural resource management such as word processing, presentation and the Internet is emphasized. (SCC)

NATRS 121 – Natural Resources Seminar (3 cr)

This course is a continuation of the concepts presented in NATRS 111. Leadership, human relations and personnel supervision skills are emphasized. Prerequisite: Natural resources students only or permission of instructor and concurrent enrollment in the natural resources program. (SCC)

NATRS 122 – Natural Resources Trigonometric Applications (5 cr)

Students learn the fundamentals of graphing, statistics, geometry and trigonometry with emphasis on practical applications to the fields of natural and water resources. Prerequisite: NATRS 112 with a grade of 1.7 or higher or equivalent. (SCC)

NATRS 130 – Chainsaw Operation, Maintenance and Safety (3 cr)

Students learn the proper operation, care, maintenance and safety in the use of chainsaws. Practical applications and demonstrations are emphasized. (SCC)

NATRS 131, 132, 133 – Field Projects in Natural Resources (3 cr ea)

This course provides practical experience that allows students to gain additional knowledge in a special topic of interest in natural resources management. Guidance from the natural resources instructors is provided to help students maximize their projects. Prerequisite: Permission of instructor; must be a natural resources major. (SCC)

NATRS 201 – Forest Protection (5 cr)

Students learn basic principles of fire control and behavior, and the control and identification of insect and disease damage to forest trees. (SCC)

NATRS 202 – Dendrology (5 cr)

This class combines lecture, lab, field trips and a variety of laboratory plant identification exercises. The majority of the class is held at Mt. Spokane State Park and the Newman Lake area describing and identifying forest plants. (SCC)

NATRS 203 – Forest Harvesting and Products (5 cr)

This course provides an overview of the wood products industry from the harvesting of raw material through its processing into a product. Students realize the connection between product specifications and their impact on harvesting equipment and techniques. Safety procedures when working around harvesting and processing equipment are practiced and stressed. Prerequisite: NATRS 204, 205 or permission of instructor. (SCC)

NATRS 204 – Maps and Aerial Photo Interpretation (5 cr)

Students learn the basic principles of interpretation and field use of aerial photographs relating to natural resources. Field use of planimetric and topographic maps is emphasized. Prerequisite: NATRS 112 or permission of instructor. (SCC)

NATRS 205 – Surveying (5 cr)

Students learn elementary surveying, including fundamentals of forest surveying, and use and care of equipment. Emphasis is on use of staff compass, Abney level, clinometer, tapes, transit and stadia rod. Prerequisite: NATRS 122 or permission of instructor. (SCC)

NATRS 207 – Wildlife Biology (5 cr)

This is a practical course designed to provide students with the basic principles of wildlife ecology, habitat, population dynamics, behavior and management practices. (SCC)

NATRS 209 – Silviculture (5 cr)

Students learn basic principles of timber stand improvement, cutting practices and forest regeneration methods. Prerequisite: ENV5 110, NATRS 112, 209, 215 or permission of instructor. (SCC)

NATRS 210 – Environmental Soil Science (5 cr)

This is a basic course in forest soils. It is designed to give the student a basic knowledge of the properties, characteristics and functions of soils found in natural conditions. Emphasis is placed on the relationships between native vegetation and noncultivated soils. (SCC)

NATRS 215 – Forest Measurements (5 cr)

Students learn basic principles of forest and natural resources sampling and measurement. Field work emphasizes correct use of forest measurements tools and instruments. Class work emphasizes calculations using measurements taken in the field. Prerequisite: NATRS 112 or permission of instructor. (SCC)

NATRS 216 – Forest Inventory (5 cr)

This course furthers the principles of forest measurements with emphasis on cruising, forest inventory, volume calculations and forest-type mapping. Prerequisite: NATRS 112 or permission of instructor. (SCC)

NATRS 217 – Freshwater Fisheries Biology (5 cr)

Students learn to identify fish and study biology, ecology, habitat requirements and management, hatchery propagation, stream enhancement and restoration procedures, and selected aquatic insect and riparian plant identification. (SCC)

NATRS 220 – Introduction to Geographic Information Systems for Natural Resources (4 cr)

Students learn the basics of the ArcGIS suite of products and integrate spreadsheets and databases into geographic information systems (GIS) to analyze common problems in natural resources. Prerequisite: NATRS 120 or permission of instructor. (SCC)

NATRS 221 – Applications in Geographic Information Systems (5 cr)

This course builds on the basic geographic information systems (GIS) skills developed in NATRS 220 using ArcGIS software and extensions for GIS applications in natural resources management. Cartographic concepts are introduced. Prerequisite: NATRS 220 or permission of instructor. (SCC)

NATRS 225 – Natural Resources Occupational Experience (1-12 cr)

This practical course assists students in pursuing careers in natural resources. Students learn to complete specific employment applications, resumes and letters of inquiry, and employment portfolios. Students also contact employers for interviews and follow-up. Students are required to evaluate their work experience and submit comprehensive written and oral reports. Prerequisite: Natural resources students only or permission of instructor and concurrent enrollment in the natural resources program. (SCC)

NATRS 230 – Global Positioning Systems (3 cr)

This course teaches students to use global positioning systems to collect, prepare, and map static and kinematic data. Using GPS to find points in the field is practiced as well. Prerequisite: NATRS 120, 204, 122 or permission of instructor. (SCC)

NATRS 231, 232, 233 – Field Projects in Natural Resources (3 cr ea)

This course provides practical experience that allows students to gain additional knowledge in a special topic of interest in natural resources management. Guidance from the natural resources instructors is provided to help students maximize their projects. Prerequisite: Permission of instructor; must be a natural resources major. (SCC)

NATRS 235 – Advanced Surveying Applications (3 cr)

Students review skills from NATRS 220 and learn advanced skills necessary to complete surveying projects often performed by technicians in natural resources and environmental science fields. This course includes the use of transits, stadia, levels, electronic surveying instruments and field data recorders. Skill areas include taking measurements, recording field notes, evaluating data and preparing maps. Prerequisite: NATRS 204, 220. (SCC)

NATRS 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

NONINVASIVE CARDIOVASCULAR TECHNOLOGY**NCT 113 – Electrophysiology (4 cr)**

Students are introduced to the field of cardiovascular technology, basic cardiac anatomy, physiology and electrophysiology with emphasis on the performance and interpretation of the electrocardiogram. Laboratory experiences to support these concepts also are included. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 116 – Acute Coronary Syndrome (1 cr)

A study of the nations number one killer in its acute phase. Pathophysiology of atherosclerosis. The stable versus the unstable patient. Vulnerable plaque types. STEMI versus NSTEMI patient presentations. The national door to balloon initiative. 12 lead EKG recognition of the signs of ischemia/infarct patterns. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 117 – Cardiovascular Pharm 1 (1 cr)

Introduction to cardiovascular pharmacology. A review of control of heart rate, blood pressure, and cardiac output and the common drug groups employed to manipulate these parameters. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 123 – History and Physical (3 cr)

This course introduces the concepts essential to the interpretation of the cardiovascular history and physical examination. The history and physical findings are related to the basic cardiac diseases (coronary artery disease, heart valve abnormalities and ventricular function). The role of the history and physical examination are explored in the performance and interpretation of the exercise tolerance test. Prerequisite: Enrollment in one of the cardiovascular programs or respiratory care and concurrent enrollment in ICT 124. (SCC)

NCT 125 – Hemodynamics (2 cr)

Introduction to various forms of invasive monitoring. Emphasis is placed on the basics of hemodynamic monitoring and interpretation. Normal and pathologic examples are introduced. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 126 – Technical Skills/Reading Hemodynamics (1 cr)

Introduction to various forms of invasive monitoring. Emphasis is placed on the basics of hemodynamic monitoring and interpretation. Normal and pathologic examples are introduced. Supports concepts taught in ICT 125. Prerequisite: Permission of instructor. (SCC)

NCT 127 – Cardiovascular Pharm 2 (1 cr)

Continuation of ICT 117 Intro to CV Pharm. Advanced Cardiac Life Support drugs are introduced. Pharmacy math is introduced. Pharmacy law is studied. Principles of IV therapy are introduced. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 128 – Technical Skills/Pharmacology (1 cr)

Supports ICT 127 concepts. Case studies of patients during cardiac emergencies will be evaluated for appropriate drug selection. Pharmacy math calculations will be taught. IV therapy techniques will be taught. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 133 – ECHO Fundamentals (5 cr)

Introduction to the basic principles and application of the Doppler and echocardiographic procedures. The anatomy, image assessment, hemodynamics and clinical applications of cardiac ultrasound are emphasized. Laboratory experiences are provided. Prerequisite: Admission to program. (SCC)

NCT 139 – Surgical Asepsis (1 cr)

Surgical asepsis for health care providers. This class will prepare the student to create a sterile field. Gown and glove themselves and others. Procedural awareness of working in a sterile field will be developed. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 140 – Technical Skills/Surgical Asepsis (1 cr)

This class supports ICT 140. The skills of surgical asepsis and infection control are taught. Working in a sterile field and gowning and gloving are taught. Develop a surgical conscience. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 141 – Computers for the CV Technologist (3 cr)

Students explore applications in medicine and develop the ability to use the microprocessor for word processing database management and statistical analysis. Principles of statistics are reviewed and applied through database management. Prerequisite: Concurrent enrollment in NCT 143. (SCC)

NCT 142 – Noninvasive Cardiovascular Clinical (4 cr)

Students develop basic imaging skills by imaging normals within the SCC echocardiography laboratory. Clinical requirements are discussed and defined. The role and job description of the noninvasive cardiovascular technologist are evaluated. Prerequisite: Concurrent enrollment in NCT 143. (SCC)

NCT 143 – Noninvasive Cardiovascular Clinical Observation (6 cr)

Students spend four weeks in a clinical setting. Two weeks are spent in an echocardiography laboratory assisting staff in patient preparation; imaging time is provided when appropriate. Two weeks are spent in a noninvasive electrophysiology laboratory performing ECGs, exercise tolerance testing, Holter monitoring and pacemaker checks under the direction of a staff technologist. Weekly clinical seminars are conducted with SCC staff. A clinical consciousness is developed with emphasis on professionalism, clinical rapport, medical ethics and patient care. Prerequisite: Completion of NCT 133 or permission of instructor. (SCC)

NCT 251 – Echocardiography Clinical I (4 cr)

Students obtain hands-on experience in hospital and clinical environments. Development of clinical technique in the utilization of current echocardiographic instrumentation in the evaluation of acquired cardiovascular disease is emphasized. Students apply the principles of medical legal ethics and professionalism to the patient, physician and other members of the health team. Clinical case reports are required. Prerequisite: Concurrent enrollment in NCT 253. (SCC)

NCT 253 – Echocardiography I (1-11 cr)

Students utilize the fundamentals presented in the first year of noninvasive cardiovascular technology to evaluate acquired cardiovascular disease states. This course incorporates all forms of noninvasive cardiovascular testing with emphasis on the performance and interpretation of M-mode, two-dimensional and Doppler echocardiography. Related physician lectures, clinical and laboratory experiences are presented. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

NCT 261 – Echocardiography Clinical II (4 cr)

Students utilize the skills learned in NCT 251 and obtain advanced experience in hospital and clinical environments. Development of clinical technique in the utilization of current echocardiographic instrumentation in the evaluation of acquired cardiovascular disease is emphasized. Students apply the principles of medical legal ethics and professionalism to the patient, physician and other members of the health team. Clinical case reports are required. Prerequisite: Concurrent enrollment in NCT 263. (SCC)

NCT 263 – Echocardiography II (11 cr)

Students utilize the fundamentals presented in the first year of noninvasive cardiovascular technology to evaluate congenital heart disease. This course continues with the study of cardiac noninvasive diagnostics with emphasis on specialty applications and new developments. Statistics, research and quality control methods are utilized. Related physician lectures, clinical and laboratory experiences are presented. Prerequisite: NCT 253. (SCC)

NCT 273 – Echocardiography Clinical III (13 cr)

Students practice clinical skills previously developed through active participation in a noninvasive cardiovascular laboratory. This full-time clinical internship is completed in an affiliated local or out-of-town hospital. Clinical skills necessary to the performance and evaluation of the M-mode, two-dimensional and Doppler Echocardiogram are emphasized. Written reports, review of current literature and attendance at conferences are required. Prerequisite: NCT 263. (SCC)

NCT 299 – Independent Studies in Noninvasive Cardiovascular Technology (1-13 cr)

This course is designed for students wishing to complete specialized studies in the field of noninvasive cardiovascular technology. Objectives are developed jointly by the student and instructor. Credit hours are assigned according to the length of time required to complete the objectives. Credits are agreed upon at the time of enrollment. Students complete specialized clinical internships in pediatric echocardiography, color flow mapping or vascular technology. Prerequisite: Current enrollment or graduate of NCT, or permission of instructor. (SCC)

NURSING PROGRAM (R.N., L.P.N.)**NURS 107 – Women and Health (1-2 cr)**

This course is an overview of contemporary women's health care topics and promotes the development of a critical framework for informed personal decision making in the health care system. Topics include women and cancer, women and heart disease, menopause, women and mental health, diet and exercise recommendations for women. (SCC)

NURS 116 – Nursing Foundations (9 cr)

This course introduces nursing emphasizing the life cycle, self-care concepts in the health-illness continuum, and how the nursing process is utilized when providing direct patient care. General topics include basic hygiene and safety, legal and ethical aspects, concepts of aging, and skill development for assisting with activities of daily living. Prerequisite: Admission requirements. (SCC)

NURS 121 – Cultural Diversity in Health Care (1 cr)

This course provides a foundation for applications of cultural concepts in the health care setting. Considerations are given to the impact of biopsychosocial, ethical, legal, spiritual and cultural influences on the need to promote, maintain and restore health of the client/family unit. Prerequisite: Permission of instructor and concurrent enrollment in a health care program. (SCC)

NURS 125 – Introduction to Medical/Surgical Nursing (8 cr)

This course introduces the health-illness continuum and enables students to adapt health maintenance concepts toward the restoration of dysfunctions through utilization of the nursing process. Restoration of optimal health is discussed as it relates to each state of development throughout the life cycle. General and specific nursing actions, related clinical competencies, dietary modifications, human relationships and health teaching are included. Prerequisite: Successful completion of prior quarter coursework. (SCC)

NURS 126 – Pharmacology For Nurses (2 cr)

This course is an overview of the most recent advances in clinical pharmacology for nurses. It updates drugs and nursing implications for drugs commonly used in hospitals today. This comprehensive course categorizes drugs by classes. Prerequisite: NURS 116, 131 and concurrent enrollment in NURS 125. (SCC)

NURS 131 – Intravenous Therapy Concepts (1 cr)

Students learn the physiological parameters for fluid and electrolyte therapy. In addition, students learn to assess the client/patient for fluid balance, apply the principles of infection control procedures and understand legal implications. Prerequisite: Successful completion of prior quarter coursework or permission of instructor. (SCC)

NURS 135 – Parental and Perinatal Nursing (5 cr)

This course emphasizes parents as the basic unit and child rearing as a natural experience. Normal aspects of maternal and child health is stressed; however, consideration is given to the recognition of complications. Physiological, psychological, social and cultural influences are discussed and analyzed so students understand the effect on all members of the family. Concepts of health maintenance, growth and development, and client teaching is emphasized. Students develop communication skills and nursing techniques. Prerequisite: Successful completion of prior quarter coursework. (SCC)

NURS 136 – Mental Health Nursing (5 cr)

Students apply concepts of mental health and illness to the promotion, maintenance and restoration of health for clients, families and significant to others throughout the life cycle. Using dynamic interaction between the nurse and client, concepts of communication, personality, feelings, behavior, self-awareness, group process and the process of interpersonal relationships are utilized to promote self-care and intervene in major problems related to psychotic and nonpsychotic behavior. Concepts related to ethical/legal, physiological, cultural and spiritual issues, and safety are integrated throughout the course. Application of mental health concepts are provided for acute care settings, extended care facilities and community health agencies. Prerequisite: NURS 116, 131, 125, 126. (SCC)

NURS 141 – Professional Relationships (1 cr)

This course is required for students planning to write the Licensed Practical Nurse Board Exams. Career opportunities and legal aspects of the graduate are emphasized. Prerequisite: Successful completion of prior quarter coursework. (SCC)

NURS 145 – Medical Surgical Nursing Concepts (12 cr)

This course promotes maintenance and restoration of health throughout the life cycle. The body systems approach is used to further focus on related health and illness problems. Concepts of safety, ethical/legal, physiological, cultural and spiritual care are integrated into the course. Orem's Theory of self-care plays a major role in meeting the needs of the client in the clinical setting, and the application is accomplished in an acute care setting. Students observe the growth and development of the ill child vs. the well child in a pediatric unit and/or day care center. Student competencies are identified for the nursing process, technical skills, communications, and the roles and responsibilities of client teaching. Prerequisite: Successful completion of prior quarter coursework. (SCC)

NURS 214 – Advanced Pharmacology For Nurses (2 cr)

This course is designed to build on prior pharmacologic study of actions and effects of drugs on the human system across the life span. The course will include advanced pharmacology concepts including drug actions and toxicities of botanical preparations. Drugs of choice and treatment strategies for all major diseases will be addressed. Prerequisite: NURS 116, 125, 126, 131, 135, 136, 141, 145. (SCC)

NURS 215 – Advanced Nursing Concepts I (10 cr)

This course enables students to adapt concepts of health and illness toward the promotion, maintenance and restoration of health for clients and their families throughout the life cycle. Using the nursing process, major problems related to biopsychosocial issues, motion and oxygen-carbon dioxide exchange are discussed as they relate to the client, family and significant others emphasizing self-care. Safety, ethical/legal, physiological, cultural and spiritual concepts are integrated with each major health problem. Application of these concepts is provided for in acute care and extended care facilities, and community health agencies. As the student cares for clients and their families in a clinical setting, competencies are identified for the nursing process, client education, technical skills, communication, leadership, and roles and responsibilities. Prerequisite: Satisfactory completion of prior quarter coursework. (SCC)

NURS 216 – Health Care in the Community (2-3 cr)

This course enables students to provide services to the community in the health care field. Students learn the value of contributing back to the community in which they live and work by volunteering in a community health service agency. At the end of the course, students display skills in communications, problem solving, responsibility and global awareness. Students contribute a minimum of 11 hours lecture and 33 hours clinical for 2 credits or 11 hours lecture and 66 hours clinical for 3 credits. Prerequisite: NURS 145 and concurrent enrollment in NURS 215, 225 or 235. (SCC)

NURS 225 – Advanced Nursing Concepts II (10 cr)

This course enables students to adapt concepts of health and illness toward the promotion, maintenance and restoration of health for clients, families and small groups throughout the life cycle. Using the nursing process, major problems related to genitourinary, integumentary and major sensory organs, digestion and gastrointestinal, and advanced maternal-child concepts are discussed as they relate to the client, family and significant others emphasizing self-care. Safety, ethical/legal, physiological, cultural and spiritual concepts are integrated with each major health problem. Application of these concepts is provided in acute care and extended care facilities, and community health agencies. As the student cares for clients and their families in a clinical setting, competencies are identified for the nursing process, client education, technical skills, communication, leadership, and roles and responsibilities. Prerequisite: Successful completion of prior quarter coursework. (SCC)

NURS 226 – Health Care Management (2 cr)

This course emphasizes management theories, legal issues, ethical implications and political impacts on leadership, supervision and delegation. Prerequisite: Satisfactory completion of prior quarter coursework or permission of department chair. (SCC)

NURS 231 – Advanced Intravenous Therapy Concepts (2 cr)

This course introduces advanced concepts of intravenous infusion therapy. Theory related to intravascular site selection and access, maintenance of various vascular access devices, intravenous nutritional support, administration of blood/blood products, antineoplastic agents and pain management products are presented and discussed. Special considerations related to legal implications of intravenous infusion therapy, intravascular medication administration, home intravenous support therapy and infusion therapy in pediatric and gerontological clients are addressed. Mathematical calculations related to intravenous solution and medication administration are reviewed. Prerequisite: NURS 131 or permission of instructor. (SCC)

NURS 235 – Advanced Nursing Concepts III (11 cr)

This course enables students to adapt concepts of health and illness toward the promotion, maintenance and restoration of health for clients, families and small groups throughout the life cycle. Using the nursing process, major problems related to genitourinary, integumentary and major sensory organs, digestion and gastrointestinal, and advanced maternal-child concepts are discussed as they relate to the client, family and significant others emphasizing self-care. Safety, ethical/legal, physiological, cultural and spiritual concepts are integrated with each major health problem. Application of these concepts is provided in acute care and extended care facilities, and community health agencies. As the student cares for clients and their families in a clinical setting, competencies are identified for the nursing process, client education, technical skills, communication, leadership, and roles and responsibilities. Prerequisite: Successful completion of prior quarter coursework. (SCC)

NUTRITION**NUTRI 150 – General Nutrition (3 cr)**

Fundamental concepts, theories and terminology of nutrition, including all classes of essential nutrients with respect to properties, functions, deficiencies, toxicities, dietary requirements and major food sources are covered in this class. Current controversial applied nutrition topics are included in many subject areas. (SCC, SFCC)

NUTRI 251 – Nutrition (5 cr)

The science that studies food and its relation to human health and performance. The various nutrients and their functions in human metabolism are examined. Essential nutrients are studied with respect to properties, functions, deficiencies, toxicities, dietary requirements and major food sources. Prerequisite: BIOL& 160 and CHEM& 122 or permission of instructor. (SCC, SFCC)

OCEANOGRAPHY**OCEA& 101 – Intro to Oceanography (5 cr)**

This course introduces students to the principles of Marine Science; the physical and chemical properties of Seawater; the fundamentals of Biology; the Organisms of the Sea; the structure and function of Marine Ecosystem; and the relationship of Humans to the Sea. (SCC)

ORTHOTIC-PROSTHETIC TECHNICIAN**OR-PR 111 – Prosthetic Tools and Materials (4 cr)**

Become familiar with prosthetic bench tools and equipment, acquire basic proven tool operation skills, classify the general areas of the lab and use of special prosthetic equipment in the lab. As a prosthetic technician students work with many materials such as metals, leather, wood, plastic, etc. This course introduces students to the materials commonly used in prosthetics. (SFCC)

OR-PR 112 – Related Human Anatomy (3 cr)

In order for the orthotics and prosthetics technician to correctly fabricate orthoses and prostheses, it is necessary for him/her to have a basic knowledge of muscles and bones of the human body. To properly fabricate below-the-knee prosthetic devices in accordance with the measurement chart, a basic understanding of the anatomy of the below-the-knee residual limb is essential. Prerequisite: OR-PR 111. (SFCC)

OR-PR 114 – Below Knee Prosthetics (10 cr)

The technician learns to identify lower limb prosthetic components, interpret measurement charts, prepare PVA sleeves, lay up PTB socket, fabricate PTB soft insert, laminate PTB socket utilizing vacuum, prepare SACH feet, statically align and assemble unfinished PTB, fabricate the PTB knee cuff, fabricate the PTB waist belt with suspension attachment, duplicate alignment, shape and hollow out prosthesis, lay up and laminate the PTB prosthesis, and finish and assemble the below-knee prosthesis. Prerequisite: OR-PR 111, 112. (SFCC)

OR-PR 122 – Related Anatomy of the Above Knee Amputation (3 cr)

A basic understanding of anatomy of the above-the-knee residual limb. Prerequisite: OR-PR 111, 112, 114. (SFCC)

OR-PR 124 – Advanced Below Knee Prosthetics (4 cr)

Identify endoskeletal components, fabricate model, check socket, and liner for endoskeletal prosthesis, laminate endoskeletal socket, assemble, align and shape endoskeletal prosthesis. Prepare plaster model for locking liner prosthesis, prepare shuttle lock installation, fabricate check socket, assemble and align temporary prosthesis, transfer alignment, fabricate definitive socket, complete alignment transfer. Syme and partial foot prosthetics (discussion). Prerequisite: OR-PR 111, 112, 114, 122. (SFCC)

OR-PR 126 – Above-the-Knee Prosthetics (10 cr)

Interpret A-K information and measurement charts, make a plaster of Paris model for A-K socket. Prepare and lay up the A-K socket, laminate the socket, attach socket into extension block, statically align A-K prosthesis adjustable leg, make flexible leather belt, metal band, and attach hip joint, duplicate alignment of A-K prosthesis, and finish and assemble prosthesis. Prerequisite: OR-PR 111, 112, 114, 122, 124. (SFCC)

OR-PR 132 – Related Anatomy (Upper Extremity) (2 cr)

In order for the student to fabricate upper-extremity prosthetic devices in accordance with measurement charts, a basic understanding of the anatomy of upper extremity residual limbs is essential. Prerequisite: OR-PR 111, 112, 114, 122, 124, 126. (SFCC)

OR-PR 134 – Below Elbow Prosthetics (8 cr)

Students learn to identify and know the function of currently used upper limb prosthetic components, be able to interpret prosthetic measurement charts, fabricate a below elbow prosthesis as a long residual limb, and make a prosthesis for a short below elbow residual limb. Prerequisite: OR-PR 111, 112, 114, 122, 124, 126, 132. (SFCC)

OR-PR 136 – Above Elbow Prosthetics (7 cr)

Students learn to fabricate an AE prosthesis that is functional for the above-elbow amputee, and becomes knowledgeable in the check socket fabrication used on AE fittings. Prerequisite: OR-PR 111, 112, 114, 122, 124, 126, 132, 134. (SFCC)

OR-PR 138 – Clinical Prosthetics (6 cr)

The prosthetic student practices fabrication skill in an off-campus prosthetic laboratory. Prerequisite: OR-PR 111, 112, 114, 122, 124, 126, 132, 134, 136. (SFCC)

OR-PR 141 – Orthopedic Equipment and Materials (4 cr)

In order to become proficient at fabricating orthoses a student must be able to identify the function and proven choice of orthotic tools. Learning the best choice of equipment is critical to accurate fabrication, to be able to identify basic orthotic components and demonstrate mastery of basic orthotic metal working skills. Prerequisite: OR-PR 141. (SFCC)

OR-PR 142 – Spinal Anatomy Related to Orthotics (3 cr)

In order for the orthotics and prosthetics student to correctly fabricate orthoses and prostheses, it is necessary for him/her to have basic knowledge of muscles and bones of the human body. To properly fabricate below-the-knee prosthetic devices in accordance with the measurement chart, a basic understanding of the anatomy of the below-the-knee residual limb is essential. Prerequisite: OR-PR 141 (SFCC)

OR-PR 144 – Spinal Orthotics (10 cr)

The student fabricates the metal framework of the lumbo-sacral orthosis, learn to cover a LS orthosis with leather, and fabricate a thoraco-lumbar orthosis and cover with leather. Prerequisite: OR-PR 141, 142. (SFCC)

OR-PR 152 – Foot and Ankle Skeletal Structure (3 cr)

In order to fabricate effective shoe modification and orthoses for control of the ankle and foot, a student will acquire a basic understanding of the foot-ankle skeletal structures. Prerequisite: OR-PR 141, 142, 144. (SFCC)

OR-PR 154 – Orthotic Shoe Fabrications (4 cr)

It is necessary for a student to develop skills in providing a base of support for the foot, to properly apply sole wedges as per prescription, fabricate shoe buildups of crepe or other material, and to accurately fabricate a foot orthoses (arch-support) per prescription. Prerequisite: OR-PR 141, 142, 144, 152. (SFCC)

OR-PR 156 – Ankle-Foot Orthosis (10 cr)

Interpret ankle-foot orthometry, shape stirrup to shoe and ankle, assemble an AFO without tibial torsion, with tibial torsion, fabricate leather work, and have a basic understanding of the varus and valgus corrective straps for the ankle. Prerequisite: OR-PR 141, 142, 144, 152, 154. (SFCC)

OR-PR 162 – Related Anatomy for the Above Knee Orthotics (1 cr)

A basic understanding of anatomy for the orthotics limbs. Prerequisite: OR-PR 141, 142, 144, 152, 154, 156. (SFCC)

OR-PR 164 – Above the Knee Orthotics (8 cr)

Interpret the knee-ankle-foot orthometry form and layout KAFO, construct metal work with and without tibial torsion of a KAFO, fabricate a KAFO with growth extensions, fabricate the leather work for the KAFO and fabricate knee control pads used in a KAFO. Prerequisite: OR-PR 141, 142, 144, 152, 154, 156, 162. (SFCC)

OR-PR 172 – Upper Extremity Anatomy Related to Orthotics (1 cr)

A basic understanding of upper extremity anatomy related to orthotics. Prerequisite: OR-PR 141, 142, 144, 152, 154, 156, 162, 164. (SFCC)

OR-PR 174 – Upper Extremity Orthotics (7 cr)

The student learns to identify wrist, hand and forearm anatomy; identify upper extremity components and interpret the orthometry forms; fabricate basic hand orthosis, wrist-hand orthosis (WHO), and learn vacuum forming of WHO. Prerequisite: OR-PR 141, 142, 144, 152, 154, 156, 162, 164, 172. (SFCC)

OR-PR 178 – Clinical Orthotics (6 cr)

In order to become proficient in fabricating orthotic devices, it is required that you practice your skills in an actual laboratory setting. Prerequisite: OR-PR 141, 142, 144, 152, 154, 156, 162, 164, 172, 174. (SFCC)

PALEONTOLOGY**PALEO 103 – Dinosaur Paleontology (5 cr)**

Provides an overview of the history of dinosaur exploration and recovery with short biographies of the great dinosaur biologists and hunters. Provides a discussion of the differences between dinosaurs and other animals. Discusses current theories of dinosaur metabolism and life style. Provides audio-visual materials on well-known dinosaur collecting sites and museums. The CCS paleontological collection includes actual dinosaur bones and teeth, as well as invertebrate and plant fossils contemporary with the dinosaurs. These provide hands-on experiences. There are opportunities for preparation of molds and casts of fossil material. Discusses various extinction theories. Prerequisite: BIOL& 160 or permission of instructor. (SFCC)

PARALEGAL**LA 100 – Legal Careers Orientation (1 cr)**

This course assists students in choosing careers in the legal field. Students acquire professional development plans. Prerequisite: 60 percentile/42 scaled score or better on the written section of the college's assessment test or receive a 2.0 grade or better in BT 109. (SCC)

LA 101 – Introduction to Paralegalism (2 cr)

Students learn the role of a paralegal in typical legal settings. Prerequisite: LA 100. (SCC)

LA 102 – Introduction to Legal Nursing (1 cr)

This course is a survey of the various roles for legal nurses across a spectrum of legal settings. Additionally, the course examines the professional demands, skills and expectations of the profession. Prerequisite: Permission of instructor/coordinator. (SCC)

LA 105 – Washington and Idaho Court Rules (3 cr)

Students learn to research Washington Court Rules for district, superior, appellate and federal court systems. Interpretation and application of rules as they relate to law office procedures are emphasized. Students also learn to distinguish procedural from substantive rules. The interrelationship of rules to the Washington Digest, Revised Code of Washington (RCW) and Appellate Court requirements is presented. Students review the Idaho Rules of Civil Procedures and Idaho rules of Criminal Procedure emphasizing how these rules differ from the Federal Rules of Civil Procedure. (SCC)

LA 110 – Legal Research and Writing (5 cr)

This course specifies practical use of legal resource tools on municipals, state and federal levels. Students learn to draft and prepare legal instruments and documents. Prerequisite: ENGL& 101. (SCC)

LA 118 – Instrument Drafting (3 cr)

This intensive course is for students who are at the end of their paralegal/legal nurse education. Frequent hands-on drafting, critiquing, editing, rewriting, and presenting representative legal instruments in litigation, domestic, criminal, real estate and commercial law are emphasized. Students can expect to experience a rapid improvement in their writing and thinking skills irrespective of their level prior to enrollment. Prerequisite: Permission of instructor. (SCC)

LA 120 – Law Office Computing (5 cr)

Students are introduced to high levels of streamlining and automating word processing functions in a law office. Macros, merging, creating, editing and formatting legal documents are emphasized. Prerequisite: Two college-level computer classes (CIS or LSEC) with a grade of 2.0 or higher; one of which must be LSEC 239 or 249. (SCC)

LA 130 – Legal Ethics (1 cr)

This course introduces the rules of professional conduct that govern the professional practice of attorneys. Topics include conflicts of interest, confidentiality, professionalism, advertising and solicitation, client funds, etc. Prerequisite: Permission of instructor/coordinator. (SCC)

LA 135 – Professional Effectiveness (1 cr)

Students learn professional effectiveness and how to become successful in the legal environment. Prerequisite: Permission of instructor/coordinator. (SCC)

LA 201 – Introduction to Probate (3 cr)

Students study wills and the necessary administration of various categories of estates. Prerequisite: LA 110. (SCC)

LA 207 – Domestic Relations and Estate Law (3 cr)

Students learn community property law characteristic of states in the western US. The law of marriage and dissolution of marriage is examined. Students study wills and the necessary administration of various categories of estates. (SCC)

LA 211 – Debtor-Creditor and Bankruptcy (3 cr)

Students study common law writs (attachments, garnishments, etc.), liquidation and reorganization bankruptcies, and the law of collection. Prerequisite: LA 110. (SCC)

LA 215 – Commercial Transaction (3 cr)

This course reviews the Uniform Commercial Code, commercial paper, bank and secure transactions, and electronic and bulk transfers. Various commercial statutes are surveyed. (SCC)

LA 217 – Business Organizations (3 cr)

Students study partnership and corporation law for incorporation and administration of business in Washington state. (SCC)

LA 218 – Employment Law (3 cr)

Students review federal and state employment statutes governing hiring, termination, discrimination, affirmative action, workers' compensations and work-place safety. (SCC)

LA 219 – Criminal Law and Procedure (3 cr)

This course is an overview of the criminal justice system emphasizing the constitutional framework of criminal procedure. Prerequisite: LA 110. (SCC)

LA 220 – Torts (3 cr)

This course is a study of law that provides redress and compensation through a civil action. Prerequisite: LA 115 or concurrent enrollment. (SCC)

LA 221 – Property and Real Estate Transactions I (3 cr)

This course surveys Real Property Law covering estates in land. Real estate transactions including fundamentals of conveyancing law and statutes of frauds are emphasized. (SCC)

LA 225 – Trial Preparation and Procedures (3 cr)

Students study civil procedures and preparation of trial materials and their application to court rules. Pretrial preparation also is covered. (SCC)

LA 230 – Insurance Law (3 cr)

This course covers basic insurance terminology and presents a working knowledge of insurance laws that are frequently encountered in today's law office. (SCC)

LA 240 – Special Issues Seminar (1-10 cr)

Students survey various areas of the law, learn skills in critical thinking, and review new and emerging issues. The substance of the course varies. Prerequisite: Permission of instructor/coordinator. (SCC)

LA 245 – Supervised Legal Work Experience (1-8 cr)

This course provides an in-depth clinical experience required for all students enrolled in the paralegal or legal nurse programs. Students are supervised in the clinic by attorneys and the legal program coordinator. Students receive thorough experience in law office practices and procedures. Progress is monitored through a combination of in-class seminars and individualized instructor contact. Grading option: Pass/fail. Prerequisite: Permission of instructor/coordinator. (SCC)

LA 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

LA 285 – Legal Office Internship (1-3 cr)

This course provides on-the-job learning experience for students while they attend classes at SCC. Students are able to apply the principles learned in the program to work in a law or law-related office under the supervision of an attorney or other legal professional. Grading option: Pass/fail. Prerequisite: Permission of instructor/coordinator. (SCC)

PHARMACY TECHNICIAN**PHARM 101 – Introduction to Pharmacy Technician (3 cr)**

This course introduces students to practice roles of pharmacy technicians. Employment opportunities, medical terminology, drug dosage forms, IV infusion, introduction to prescription interpretation and pharmacy law are emphasized. (SCC)

PHARM 115 – Mathematics for Pharmacy Technicians (5 cr)

Students are introduced to the application of basic math skills to real-life scenarios in pharmacy technician career fields. This course includes review of basic skills, followed by applications of dosage calculations for IVs, tablets, liquids and injectables. Students are also introduced to the applications of math skills determined by body surface area, chemotherapy and pediatric dosing. (SCC)

PHARM 119 – Pharmacology (3 cr)

Students learn to identify drugs normally used in hospital and retail pharmacy settings. Therapeutic drug classifications, routes of administration, codes and abbreviations, and correct drug name spelling are emphasized. Students also learn to distinguish between generic and trade (brand) names of drugs. (SCC)

PHARM 122 – Advanced Pharmacology (5 cr)

Students learn to categorize the top 200 drugs into the major therapeutic classifications; distinguish between generic and brand names of drugs; identify accepted dosage forms, routes and dosing intervals of each drug. Human medical conditions relating to anatomy and physiology are emphasized. Prerequisite: PHARM 119. (SCC)

PHARM 123 – Hospital Pharmacy Dispensing and Management (5 cr)

Students learn to assist the pharmacist with preparing and dispensing prescription drugs within the hospital setting. Verbal and written communication skills are emphasized. Students are introduced to appropriate inventory control and purchasing. Prerequisite: PHARM 101, 119 with a 2.0 grade or better. (SCC)

PHARM 124 – Community Pharmacy Dispensing and Management (3 cr)

This course prepares students to develop the knowledge and skills needed to assist the pharmacist in preparing and dispensing prescription drugs in a community pharmacy setting. Verbal and written communications skills, prescription interpretation, and third party billing are emphasized. Prerequisite: PHARM 101, 119 with a 2.0 grade or better. (SCC)

PHARM 130 – Entering the Work Environment (2 cr)

This course prepares students for success in health careers. Students learn job-readiness skills including work ethics, professionalism, resume writing, communication skills and self-esteem. (SCC)

PHARM 131 – Pharmacy Law and Ethics (3 cr)

Students learn the law relating to pharmacy, agencies that regulate pharmacy practice and quality assurance. (SCC)

PHARM 132 – Community Pharmacy (6 cr)

The course introduces students to the procedures permitted the pharmacy technician in the state of Washington regarding community pharmacy. Prerequisite: PHARM 122, 123, 124 with a 2.0 grade or better. (SCC)

PHARM 133 – Hospital Pharmacy (6 cr)

This course offers clinical practice to perfect students' competence in performing pharmacy technician functions that take place under direct supervision of the pharmacist. Students work in a hospital pharmacy assisting the pharmacist. Prerequisite: Completion of all prior required courses with a 2.0 grade or better. (SCC)

PHILOSOPHY**PHIL& 101 – Intro to Philosophy (5 cr)**

Designed to enable students to examine the fundamental problems in philosophy by reading selectively the writings of the significant philosophers and analyzing them in discussion seminars. The lectures are designed to develop a perspective and sense of continuity toward the growth of Western thought. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

PHIL& 106 – Intro to Logic (5 cr)

A basic introduction to deductive and inductive logic, the nature of formal deductive proof and its application to the traditional logical problems. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

PHIL 210 – Ethics (5 cr)

A systematic and historical analysis of some of the problems in ethics. An examination of some of the principle ethical positions and the criteria for their solutions. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

PHIL 215 – Environmental Philosophy (5 cr)

Students explore the philosophical relationship between human beings and the non-human world. The moral status of animals and ecosystems, anthropocentrism versus biocentrism, environmental economics and public policy, deep ecology, ecofeminism, and the idea of a "land ethic" are emphasized. (SCC, SFCC)

PHIL 220 – Philosophy of Religion (5 cr)

The course is designed to give the student an understanding of both classical and contemporary philosophy of religion by concentrating on the nature of religion, religious disagreements, the existence of God, the problem of evil, the relation between faith and reason, and religious language. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

PHIL 231 – Modern Philosophical Problems (5 cr)

The course includes both purely philosophical and literary manifestations of existentialism. Treatment follows a historical progression from the 19th century forerunners of existentialism (Dostoevsky, Nietzsche, Kierkegaard) to the major modern representatives (Heidegger, Jaspers, Sartre and Camus). Prerequisite: PHIL& 101 or PHIL 210 or permission of instructor. SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

PHIL 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

PHIL 267 – Cooperative Education Work Experience (1-8 cr)

For course description, see Cooperative Education. (SFCC)

PHOTOGRAPHY**PHOTO 101 – Introduction to Photography (5 cr)**

This course introduces black and white photography from a historical, artistic and experiential perspective. Students learn basic camera operation, print-making and composition while exploring the cultural impact photography has on society. (SFCC)

PHOTO 102 – Photographic Appreciation (2 cr)

Students explore current and historical trends in photography and identify career opportunities in a wide variety of visual communication fields. Students discover the work of photographers and designers who have had significant impact on the field and learn to speak the "language" of photography in a professional environment. (SFCC)

PHOTO 111 – Studio Photography I (4 cr)

Students learn to control lighting and exposure in a studio environment while exploring a variety of subjects, including still life, commercial product and people photography. Students learn to identify the characteristics of light on a subject, operate studio lighting equipment and master a variety of metering techniques to calculate proper exposure. Prerequisite: PHOTO 101. (SFCC)

PHOTO 112 – Photographic Design (4 cr)

Students in this course discover the artistic substance of photography through the application of design principles in photography. Students compose images that are balanced, exhibit depth, and explore the relationship between visual elements, emotions and ideas. Students learn to assess their work and formulate criteria for critiquing photography and design. Prerequisite: PHOTO 101 or permission of instructor. (SFCC)

PHOTO 115 – Photography Lab II (3 cr)

Students apply the skills acquired in second-quarter photography classes and develop work habits to meet employer standards when using darkroom and shooting room facilities in the photography building. Prerequisite: PHOTO 101. (SFCC)

PHOTO 120 – Photographic Arts (3 cr)

Students develop artistic interpretations of black and white images by applying alternative printing techniques. Topics include solarization, photo montages, selective toning, polaroid image transfers, and applying photographic emulsions to other media including canvas, water color paper and ceramic substrates. Prerequisite: PHOTO 101 or permission of department or division. (SFCC)

PHOTO 121 – Location Photography I (4 cr)

This course applies the principles of studio photography outside of the studio by teaching students to analyze and modify lighting conditions on location. Students identify the effects of different types of light sources and apply supplemental lighting to make dynamic exposures of people, products, interior design and architectural landscapes. Prerequisite: PHOTO 101. (SFCC)

PHOTO 125 – Photography Lab III (3 cr)

Students in this course apply the skills acquired in third-quarter photography classes and develop work habits to meet employer standards when using darkroom and shooting room facilities in the photography building. Prerequisite: PHOTO 115. (SFCC)

PHOTO 126 – Digital Photography I (5 cr)

Using the latest image-editing software, students explore the creative possibilities of digital imaging while retouching and creating multiple image composites. Students acquire knowledge of technical requirements to create photographic quality images using computers, scanners, digital printers and cameras. (SFCC)

PHOTO 131 – Introduction to Photojournalism (3 cr)

Students in this course assume the role of photojournalist while investigating the ethical issues involved with journalism in America. Students tell stories with pictures, develop an eye for alternative image perspectives, gather accurate assignment information and work with editors in a fast-paced environment. Students are provided an opportunity to visit with working professionals and to explore career opportunities in journalism. (SFCC)

PHOTO 132 – Advanced Black and White Photography (3 cr)

This course provides students an opportunity to fully explore the capabilities of black and white photography while learning the Zone system and advanced darkroom techniques. Prerequisite: PHOTO 101 or permission of instructor. (SFCC)

PHOTO 133 – Color Lab (3 cr)

Students in this course learn to make color prints and process color film and transparencies. Instruction includes working in a photo-finishing lab while mastering push and pull film processing, color printing, and mixing chemistry. Prerequisite: PHOTO 101 or permission of instructor. (SFCC)

PHOTO 200 – Photography Media (4 cr)

This course focuses on photography as a communication tool. Instead of concentrating on a single image, students script and produce a multimedia presentation that combines still-images, sounds, text and graphics. Students explore ways to market multimedia presentations to corporations and government agencies, and survey current multimedia technology. Prerequisite: PHOTO 101. (SFCC)

PHOTO 205 – Photography Lab IV (3 cr)

Students in this course apply skills acquired in their fourth-quarter photography courses and develop work habits to meet employer standards when using darkroom and shooting room facilities in the photography building. Prerequisite: PHOTO 125. (SFCC)

PHOTO 215 – Photography Lab V (3 cr)

Students in this course apply the skills acquired in their fifth-quarter photography classes and develop work habits to meet employer standards while using darkroom and shooting room facilities in the photography building. Prerequisite: PHOTO 205. (SFCC)

PHOTO 225 – Photography Lab VI (3 cr)

Students in this course apply the skills learned in their sixth-quarter photography classes and develop work habits to meet employer standards while using darkroom and shooting room facilities in the photography building. Prerequisite: PHOTO 215. (SFCC)

PHOTO 227 – Business of Photography (3 cr)

Students in this course set career goals and develop a comprehensive personal plan of action. Students gain knowledge of business practices unique to the field of photography, while taking inventory of the skills necessary to be successful. Topics include different methods for earning income, development of a step-by-step strategy to achieve success, business contracts, customer service policies, marketing, financial breakdowns of pricing strategies, sales presentations, professional associations and sources for further education. Prerequisite: PHOTO 205. (SFCC)

PHOTO 231 – Studio Photography II (4 cr)

Students expand their knowledge of a variety of lighting and metering techniques introduced in PHOTO 111 to create dynamic images of people and products for advertising layouts. Students develop problem-solving skills as they work with art directors, prepare bids and research current trends in commercial photography. Prerequisite: PHOTO 111. (SFCC)

PHOTO 232 – Portraiture (4 cr)

This class focuses on the skills necessary for working with people in the portrait photography field. Students discover lighting and posing techniques to augment an individual's appearance while exploring the variety of markets for portrait photography including high school seniors, weddings, families, executives, children and fine-art portraiture. Prerequisite: PHOTO 101 or permission of instructor. (SFCC)

PHOTO 233 – Location Photography II (4 cr)

Students in this course apply a variety of lighting, metering and color correction techniques introduced in PHOTO 121 to gain experience in the corporate and industrial segments of commercial photography. Subjects vary from architectural design, corporate communication and working with fashion models on location. Prerequisite: PHOTO 121. (SFCC)

PHOTO 234 – Digital Photography II (5 cr)

Students in this course apply skills to create imaginative photographic illustrations and prepare them for publication. An emphasis is placed on color management and preparing images for the Internet. Prerequisite: PHOTO 126. (SFCC)

PHOTO 235 – Nature and Landscape Photography (5 cr)

This course teaches students to refine their composition skills while capturing images of nature, wildlife and landscapes. Marketing of images through publishers, stock agencies and art galleries is discussed. Prerequisite: PHOTO 101 or permission of instructor. (SFCC)

PHOTO 236 – Photography Workshop (1-4 cr)

This class enables students to keep abreast of current trends and conduct research projects in various facets of photography. This course may be repeated for up to 12 credits. (SFCC)

PHOTO 237 – Introduction to Documentary DV Production (3 cr)

Students examine a variety of creative approaches to filmmaking while using current digital video technology to produce their own short films. Students explore the history of "non-fiction" filmmaking and identify the major characteristics of the documentary genre. Special emphasis is placed on identifying relevant applications of digital video technology within the photographic industry such as: Wedding and event videography, corporate communications and biographical tributes. (SFCC)

PHOTO 238 – Fashion Photography (4 cr)

Students explore historical origins, the role of photography in shaping fashion trends, major historical movements and photographic masters and trendsetters of fashion photography. This class focuses on the knowledge and skills necessary for producing effective fashion, beauty, glamour, and product imagery for advertising and editorial purposes. Advanced lighting and posing techniques, in studio and on location, are stressed. Photographic assignments explore preproduction, pose, wardrobe, propping and environment while creating conceptually stylized imagery. Post-production techniques include digital retouching and preparing images for publication. Prerequisite: PHOTO 101, 126 or permission of instructor. (SFCC)

PHOTO 240 – Large Format Photography (4 cr)

Students explore the photographic techniques and the mechanics of the large format view camera. Focus is on building a technical knowledge while developing skills in large format camera use. Topics covered include a historical overview of the view camera, view camera design, optical principals, camera movements and operations. Assignment work stresses practical applications in still-life, architecture, portraiture, and landscape and macro photography. Prerequisite: PHOTO 101 or permission of instructor. (SFCC)

PHOTO 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SFCC)

PHOTO 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SFCC)

PHYSICAL EDUCATION**PE 100 – Fitness for Life (1 cr)**

This course is designed to acquaint students with proper methods and techniques for establishing an individualized personal wellness and fitness program. It is conducted in the campus Fitness Center and includes personalized inventory and appraisal of current fitness level and explores options available to improve cardiovascular endurance, weight control, strength and flexibility. (SCC, SFCC)

PE 101 – Beginning Volleyball (1 cr)

Fundamental skills, rules, etiquette and strategy; development of skills through drills and competitive play. (SCC, SFCC)

PE 102 – Archery (1 cr)

Course is designed to develop basic archery skills and appreciation of target archery. Students learn proper use of equipment, fundamental skills, terminology and scoring. (SCC, SFCC)

PE 105 – Beginning Badminton (1 cr)

Fundamental skills, rules of the game, court etiquette, techniques, and strategy of singles and doubles play. (SCC)

PE 106 – Yoga Fitness (1 cr)

This course promotes individual fitness and total mind-body health. Strength and stretching movements, flexibility and breathing exercises, and relaxation techniques are presented. (SCC, SFCC)

PE 107 – Jogging (1 cr)

Course designed to improve the student's level of physical fitness and wellness, teach proper methods of running/jogging, encourage proper body weight and body fat levels, and establish a permanent habit of exercise. (SCC, SFCC)

PE 108 – Beginning Tennis (1 cr)

Basic skills and techniques needed for singles and doubles play. Court etiquette, rules, strategy, scoring and terminology. (SCC, SFCC)

PE 112 – Beginning Flag Football (1 cr)

Techniques of offensive and defensive team play. Rules, mechanics and skills. (SFCC)

PE 114 – Beginning Karate (1 cr)

Fundamental skills, philosophy, rules and strategy of karate. Emphasizes a combination of skill, power and discipline. (SCC, SFCC)

PE 115 – Beginning Soccer (1 cr)

Basic skills, strategy and team play involved in the game of soccer. (SCC, SFCC)

PE 116 – Beginning Basketball (1 cr)

Fundamentals of ball handling, shooting, passing, and techniques of offensive and defensive play. Competitive play situations provided. (SCC, SFCC)

PE 117 – Kickboxing (1 cr)

Students learn the basic skills, techniques and safety procedures of kickboxing. Sport specific activities to improve individual balance, strength, endurance and cardiovascular conditioning are emphasized. (SCC, SFCC)

PE 118 – Beginning Bowling (1 cr)

This course is designed to teach fundamental skills, rules, techniques, scoring and etiquette of bowling. (SCC, SFCC)

PE 120 – Beginning Softball (1 cr)

Fundamentals of team play, rules and game strategies. Emphasis placed on participation by all. (SCC, SFCC)

PE 122 – Beginning Skiing (1 cr)

Instruction at all levels of competency in the skills and techniques of skiing. Classes are held at Mt. Spokane. (SCC, SFCC)

PE 126 – Beginning Golf (1 cr)

Practice and development of fundamental skills, rules and etiquette of golf. (SCC, SFCC)

PE 127 – Beginning Jazz Dance (1 cr)

Course includes jazz dance oriented stretching and warm-ups. Class will learn jazz combinations, walks and steps incorporated in a variety of dance routines. (SFCC)

PE 130 – Pickleball (1 cr)

Fundamental skills, rules of the game, court etiquette, techniques, and strategy of singles and doubles play. (SFCC)

PE 133 – Beginning Cycling (1 cr)

This is an introductory course covering the basic techniques and applications of a fixed gear stationary bike. Students perform an exercise routine on the stationary Schwinn Spinner to increase their cardiovascular and pulmonary efficiency, musculoskeletal strength and endurance, and coordination and balance while riding in a group setting. (SCC, SFCC)

PE 135 – Gymnastics (1 cr)

Gymnastics basics covering beginning, intermediate and advanced levels in the areas of tumbling, flexibility, vaulting, bars and balance beam. (SCC)

PE 139 – Weight Training (1 cr)

This course covers modern weight training techniques, including strength and endurance training, and flexibility and coordination. Students learn proper techniques of both Olympic freebar weights and machine circuit training programs. (SCC, SFCC)

PE 140 – Beginning Ski Conditioning (1 cr)

Ski conditioning class is an intense concentration of exercises that complement the basic movements of skiing. The emphasis is on improving the general level of body conditioning, flexibility and improvement of cardiovascular functions as they relate to skiing. (SCC, SFCC)

PE 141 – Theory and Conditioning of Soccer (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 143 – Theory and Conditioning of Basketball (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular function. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 144 – Theory and Conditioning of Softball (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 145 – Theory and Conditioning of Baseball (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 146 – Theory and Conditioning of Cross Country (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 147 – Theory and Conditioning of Track (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 149 – Theory and Conditioning of Golf (2 cr)

This is a complete offering of skill development, playing strategies, course management, and concepts and rules mastery as they relate to the game of golf. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 151 – Theory and Conditioning of Tennis (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 154 – Theory and Conditioning of Volleyball (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 156 – Techniques of Soccer (3 cr)

This course is a study of the rules, team organization, techniques and strategy of soccer. (SCC, SFCC)

PE 157 – Track Techniques (3 cr)

This course is a study of the rules, techniques, and strategy of track and field events. (SCC, SFCC)

PE 158 – Techniques of Tennis (3 cr)

This course presents intense techniques of tennis designed for students interested in competitive play in either singles or doubles. Advanced drills, footwork, agility and conditioning for competitive play are emphasized. (SCC, SFCC)

PE 159 – Techniques of Golf (3 cr)

This course is a study of the rules, techniques, fundamentals and skills of golf. It is designed for students interested in individual and team competition. (SCC, SFCC)

PE 160 – Techniques of Volleyball (3 cr)

This course is a study of the rules, team organization, techniques and strategies of volleyball. (SCC, SFCC)

PE 164 – Techniques of Basketball (3 cr)

This course presents an intense study of proper basketball techniques, fundamentals and skills. Individual and team offensive and defensive strategies and philosophies also are presented. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 165 – Techniques of Baseball (3 cr)

This course is designed to develop knowledge and physical skills of baseball in a laboratory setting. Students learn rules and strategies of baseball, and basic fundamentals of hitting, throwing and catching as applied to the individual's position or positions. (SCC, SFCC)

PE 169 – Techniques of Softball (3 cr)

This course is designed for students interested in competitive fast pitch softball. Advanced drills, skills, techniques and conditioning for competitive play are emphasized. (SCC, SFCC)

PE 170 – Introduction to Physical Education and Recreation (3 cr)

This course is designed to develop introductory skills and increase knowledge in the occupational areas of health, physical education, recreation and coaching. Students learn historical factors that have shaped the profession, current trends, philosophies and objectives of physical education. (SCC, SFCC)

PE 177 – Beginning Body Conditioning (1 cr)

A variety of activities that lead to overall improvement of body conditioning, weight training, walking, jogging, calisthenics and organized physical activities will be employed to increase efficiency of cardiovascular functions. (SCC, SFCC)

PE 182 – Beginning Ballet (1 cr)

Introduction and explanation of ballet from fundamental to more complex techniques. (SFCC)

PE 184 – Professional Technical Physical Education (2 cr)

This course is designed for professional/technical students who wish to improve their personal fitness level specific to their industry requirements. The 11 lecture hours focus on the components of improving a healthy lifestyle. Topics covered include heart disease, controllable and noncontrollable risk factors, nutrition, stress management, and exercise methods. The 22 hours of lab are designed to implement the methods and techniques studied in the lecture. Students also perform physical assessments to determine their current level of fitness. Following the assessment, a personal exercise program is developed for them to carry out during the quarter. (SCC, SFCC)

PE 185 – Beginning Aerobic Fitness (1 cr)

A program of stretching and aerobic conditioning set to music. Course designed to improve and appraise flexibility, strength and cardiovascular fitness through a variety of aerobic techniques. (SCC, SFCC)

PE 186 – Fast Fitness, Beginning (1 cr)

Comprehensive physical fitness course designed to develop strength, flexibility, muscular endurance and cardiovascular efficiency in an effective and timely manner through the use of circuits. (SCC, SFCC)

PE 187 – Cross Training (2 cr)

The term cross training is the involvement of a variety of different activities into a single coordinated program. The objective is to achieve high levels of strength, endurance and flexibility while at the same time preventing injuries. It is necessary to include different types of activities into a weekly routine. The cross training class focuses on the following: Development of a comprehensive, personalized fitness program utilizing the state-of-the-art equipment in the Fitness Center. The course will require a basic knowledge of the fast fitness circuit concept and an understanding of the cardiovascular equipment. Individual programs will incorporate the use of all exercise equipment in the Fitness Center. In addition, individuals need to include other activities such as running, rowing, cycling, stair climbing, cross-country skiing, free weight training, in-line skating and walking. Monthly goals are predetermined and a daily training record will be kept to evaluate the individual's progress toward his/her goals. (SCC, SFCC)

PE 188 – Basic Fitness I (2 cr)

This initial fitness course includes one lecture session per week covering the basic "how to's" of exercise and nutrition, starting a fitness program, eating for maximum energy and weight management. Students participate in two activity sessions per week of low-level, nonimpact and nonintimidating activities. Students take a personalized inventory and appraisal of their current fitness level and explore options available to improve cardiovascular endurance, weight control, strength and flexibility. (SCC, SFCC)

PE 200 – Fitness for Life (1 cr)

This course is designed to acquaint students with proper methods and techniques for establishing an individualized personal wellness and fitness program. It is conducted in the campus Fitness Center and includes personalized inventory and appraisal of current fitness level and explores options available to improve cardiovascular endurance, weight control, strength and flexibility. (SCC, SFCC)

PE 201 – Advanced Volleyball (1 cr)

Fundamental skills, rules, etiquette and strategy; development of skills through drills and competitive play. (SCC, SFCC)

PE 202 – Archery (1 cr)

Course is designed to develop basic archery skills and appreciation of target archery. Students learn proper use of equipment, fundamental skills, terminology and scoring. (SCC, SFCC)

PE 205 – Advanced Badminton (1 cr)

Fundamental skills, rules of the game, court etiquette, techniques, and strategy of singles and doubles play. (SCC)

PE 206 – Yoga Fitness (1 cr)

This course promotes individual fitness and total mind-body health. Strength and stretching movements, flexibility and breathing exercises, and relaxation techniques are presented. (SCC, SFCC)

PE 207 – Jogging (1 cr)

Course designed to improve the student's level of physical fitness and wellness, teach proper methods of running/jogging, encourage proper body weight and body fat levels, and establish a permanent habit of exercise. (SCC, SFCC)

PE 208 – Advanced Tennis (1 cr)

Basic skills and techniques needed for singles and doubles play. Court etiquette, rules, strategy, scoring and terminology. (SCC, SFCC)

PE 212 – Advanced Flag Football (1 cr)

Techniques of offensive and defensive team play. Rules, mechanics and skills. (SFCC)

PE 214 – Advanced Karate (1 cr)

Fundamental skills, philosophy, rules and strategy of karate. Emphasizes a combination of skill, power and discipline. (SCC, SFCC)

PE 215 – Advanced Soccer (1 cr)

Basic skills, strategy and team play involved in the game of soccer. (SCC, SFCC)

PE 216 – Advanced Basketball (1 cr)

Fundamentals of ball handling, shooting, passing, and techniques of offensive and defensive play. Competitive play situations provided. (SCC, SFCC)

PE 217 – Kickboxing (1 cr)

Students learn the basic skills, techniques and safety procedures of kickboxing. Sport specific activities to improve individual balance, strength, endurance and cardiovascular conditioning are emphasized. (SCC, SFCC)

PE 218 – Advanced Bowling (1 cr)

This course is designed to teach fundamental skills, rules, techniques, scoring and etiquette of bowling. (SCC, SFCC)

PE 220 – Advanced Softball (1 cr)

Fundamentals of team play, rules and game strategies. Emphasis placed on participation by all. (SCC, SFCC)

PE 222 – Advanced Skiing (1 cr)

Instruction at all levels of competency in the skills and techniques of skiing. Classes are held at Mt. Spokane. (SCC, SFCC)

PE 226 – Advanced Golf (1 cr)

Practice and development of fundamental skills, rules and etiquette of golf. (SCC, SFCC)

PE 227 – Advanced Jazz Dance (1 cr)

Course includes jazz dance oriented stretching and warm-ups. Class will learn jazz combinations, walks and steps incorporated in a variety of dance routines. (SFCC)

PE 230 – Pickleball (1 cr)

Fundamental skills, rules of the game, court etiquette, techniques, and strategy of singles and doubles play. (SFCC)

PE 233 – Advanced Cycling (1 cr)

This advanced-level course continues development of techniques and applications presented in PE 133. Students perform a variety of advanced exercise routines on stationary Schwinn Spinner bicycles to increase cardiovascular and pulmonary efficiency, musculoskeletal strength and endurance, and coordination and balance while riding in a group setting. Prerequisite: PE 133. (SCC, SFCC)

PE 235 – Gymnastics (1 cr)

Gymnastics basics covering beginning, intermediate and advanced levels in the areas of tumbling, flexibility, vaulting, bars and balance beam. (SCC)

PE 239 – Weight Training (1 cr)

This course covers modern weight training techniques, including strength and endurance training, and flexibility and coordination. Students learn proper techniques of both Olympic freebar weights and machine circuit training programs. (SCC, SFCC)

PE 240 – Advanced Ski Conditioning (1 cr)

Ski conditioning class is an intense concentration of exercises that complement the basic movements of skiing. The emphasis is on improving the general level of body conditioning, flexibility and improvement of cardiovascular functions as they relate to skiing. (SCC, SFCC)

PE 241 – Theory and Conditioning of Soccer (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 243 – Theory and Conditioning of Basketball (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular function. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 244 – Theory and Conditioning of Softball (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 245 – Theory and Conditioning of Baseball (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 246 – Theory and Conditioning of Cross Country (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 247 – Theory and Conditioning of Track (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 249 – Theory and Conditioning of Golf (2 cr)

This is a complete offering of skill development, playing strategies, course management, and concepts and rules mastery as they relate to the game of golf. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 251 – Theory and Conditioning of Tennis (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 254 – Theory and Conditioning of Volleyball (2 cr)

This is an intense program of physical activity to enhance flexibility, strength, endurance and cardiovascular functions. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 256 – Techniques of Soccer (3 cr)

This course is a study of the rules, team organization, techniques and strategy of soccer. (SCC, SFCC)

PE 257 – Track Techniques (3 cr)

This course is a study of the rules, techniques, and strategy of track and field events. (SCC, SFCC)

PE 258 – Techniques of Tennis (3 cr)

This course presents intense techniques of tennis designed for students interested in competitive play in either singles or doubles. Advanced drills, footwork, agility and conditioning for competitive play are emphasized. (SCC, SFCC)

PE 259 – Techniques of Golf (3 cr)

This course is a study of the rules, techniques, fundamentals and skills of golf. It is designed for students interested in individual and team competition. (SCC, SFCC)

PE 260 – Techniques of Volleyball (3 cr)

This course is a study of the rules, team organization, techniques and strategies of volleyball. (SCC, SFCC)

PE 264 – Techniques of Basketball (3 cr)

This course presents an intense study of proper basketball techniques, fundamentals and skills. Individual and team offensive and defensive strategies and philosophies also are presented. The course is designed for students interested in individual and team competition. (SCC, SFCC)

PE 265 – Techniques of Baseball (3 cr)

This course is designed to develop knowledge and physical skills of baseball in a laboratory setting. Students learn rules and strategies of baseball, and basic fundamentals of hitting, throwing and catching as applied to the individual's position or positions. (SCC, SFCC)

PE 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

PE 267 – Cooperative Education Work Experience (1-3 cr)

For course description, see Cooperative Education. (SCC, SFCC)

PE 269 – Techniques of Softball (3 cr)

This course is designed for students interested in competitive fast pitch softball. Advanced drills, skills, techniques and conditioning for competitive play are emphasized. (SCC, SFCC)

PE 270 – Nutrition for Fitness (3 cr)

This course provides students with a working knowledge of prudent nutritional practices and focuses on issues of concern to individuals who are active in physical fitness programs. In addition to basic nutritional information, the course covers topics with special applications to the fitness field, such as the nutritional requirements of different activities, planning training diets and pregame meals. The effects of ergogenic foods on performance, fluid and electrolyte balance also are covered. (SCC, SFCC)

PE 272 – Psychology of Athletic Achievement (3 cr)

This course provides the student with the principles and practices of personal achievement as applied to athletics and academic endeavors. Techniques of developing a positive self-image through understanding and application of basic philosophies relating to goal setting, motivation and personal discipline are introduced. (SCC, SFCC)

PE 277 – Advanced Body Conditioning (1 cr)

A variety of activities that lead to overall improvement of body conditioning, weight training, walking, jogging, calisthenics and organized physical activities will be employed to increase efficiency of cardiovascular functions. (SCC, SFCC)

PE 282 – Advanced Ballet (1 cr)

Introduction and explanation of ballet from fundamental to more complex techniques. (SFCC)

PE 284 – Professional Technical Physical Education II (2 cr)

This advanced course is designed for professional/technical students who have completed PE 184. The 11 lecture hours will involve analyzing current industry requirements, such as type of job, tools used, length of time standing, variety of positions utilized, physical demands and injury statistics. The 22 hours of lab focuses on developing an exercise program that meets the needs of specific vocational requirements. Students also perform physical tests required by the industry. An example would be the police science student performing the obstacle course within current police academy standards. Prerequisite: PE 184. (SCC, SFCC)

PE 285 – Advanced Aerobic Fitness (1 cr)

A program of stretching and aerobic conditioning set to music. Course designed to improve and appraise flexibility, strength and cardiovascular fitness through a variety of aerobic techniques. (SCC, SFCC)

PE 286 – Fast Fitness, Advanced (1 cr)

Comprehensive physical fitness course designed to develop strength, flexibility, muscular endurance and cardiovascular efficiency in an effective and timely manner through the use of circuits. (SCC, SFCC)

PE 287 – Cross Training (2 cr)

The term cross training is the involvement of a variety of different activities into a single coordinated program. The objective is to achieve high levels of strength, endurance and flexibility while at the same time preventing injuries. It is necessary to include different types of activities into a weekly routine. The cross training class focuses on the following: Development of a comprehensive, personalized fitness program utilizing the state-of-the-art equipment in the Fitness Center. The course will require a basic knowledge of the fast fitness circuit concept and an understanding of the cardiovascular equipment. Individual programs will incorporate the use of all exercise equipment in the Fitness Center. In addition, individuals need to include other activities such as running, rowing, cycling, stair climbing, cross-country skiing, free weight training, in-line skating and walking. Monthly goals are predetermined and a daily training record will be kept to evaluate the individual's progress toward his/her goals. (SCC, SFCC)

PE 288 – Basic Fitness II (2 cr)

Students utilize advanced concepts of fitness and exercise developed in PE 188. Knowledge of wellness and fitness is enhanced through completion of 10 self-motivated independent study modules. Prerequisite: PE 188. (SCC, SFCC)

PHYSICAL THERAPIST ASSISTANT

PTA 101 – Introduction to Physical Therapy (3 cr)

This course is an introduction to the practice of physical therapy emphasizing the role of the physical therapist assistant as a member of the health care team. Investigation of the law pertaining to the practice of physical therapy and ethical conduct are covered. Issues of teamwork, interpersonal communication skills and patient motivation will be explored. Prerequisite: Acceptance into PTA program. (SFCC)

PTA 102 – Physical Therapy Terminology (1 cr)

This course is a supervised self-study of medical terminology and abbreviations used to describe the anatomy, physiology and pathology of the body systems used in relationship to the practice of physical therapy. Terms associated with diagnostics, surgery, laboratory tests, pharmacology and patient care are included. Prerequisite: Acceptance into PTA program. (SFCC)

PTA 103 – Applied Anatomy (6 cr)

Course offering includes instruction in human anatomy with an emphasis on the musculoskeletal system, external palpation and identification of structures, and relationship to function. Introduction to kinesiology. Prerequisite: Grade of 2.0 or better in PTA courses or permission of instructor. (SFCC)

PTA 104 – Survey of Pathophysiology (5 cr)

This course includes a basic overview of disease processes, including general pathological responses and the physiology of healing and repair. A description of specific diseases and conditions, and the medical and surgical forms of treatment as they relate to rehabilitation is covered and there is discussion of systemic origins of musculoskeletal pain. Prerequisite: Grade of 2.0 or better in PTA courses or permission of instructor. (SFCC)

PTA 105 – Introduction to Neuroscience (4 cr)

An introduction to the structures and basic functions of the nervous system in relationship to physical therapy treatment of patients with neurological diagnoses is offered in this course. Prerequisite: Grade of 2.0 or better in PTA courses or permission of instructor. (SFCC)

PTA 106 – Regional Human Anatomy and Physiology (5 cr)

Human body structure and function from a regional viewpoint with emphasis on the skeletal, muscular and nervous systems; the respiratory and cardiovascular systems and introduction of digestive and endocrine systems. Prerequisite: BIOL& 241. (SFCC)

PTA 110 – PTA Procedures I: Basic PT Procedures (7 cr)

Basic patient care skills including vital signs, bandaging, aseptic techniques, wound care and athletic taping are offered in this course. Preparation of patient and treatment environment, as well as theory and application of superficial heat, cold and hydrotherapy are covered. Prerequisite: Acceptance into PTA program. (SFCC)

PTA 111 – PTA Procedures II: PT Modalities (7 cr)

The focus of study is on theory and application of deep heat modalities, principles and application of basic massage techniques, and the introduction to fundamentals of traction and electrotherapy. Prerequisite: Grade of 2.0 or better in PTA 110 and all PTA courses. (SFCC)

PTA 112 – PTA Procedures III: Functional Restoration (7 cr)

Instruction addresses physical restoration techniques including bed mobility, patient transfers, postural analysis, principles of normal and abnormal ambulation, use of assistive devices, and selected functional rehabilitation activities. Prerequisite: Grade of 2.0 or better in PTA 111 and all PTA courses. (SFCC)

PTA 151 – Clinical Experience I (2 cr)

Supervised clinical observation and experience in a variety of physical therapy clinic settings affiliated with the college are provided. A clinical discussion group focuses on interpersonal communication and patient interaction, oral and written patient progress reports, and effective problem-solving skills. Prerequisite: Grade of 2.0 or better in all PTA courses or permission of instructor. (SFCC)

PTA 201 – Issues in Physical Therapy and Health Care (2 cr)

This course is a survey of medical, legal, and psychosocial issues relating to the role of the physical therapist assistant in various physical therapy facilities and in the delivery of health care. Emphasis is on the goals of physical therapy and how the PTA can influence the achievement of those goals. Prerequisite: Grade of 2.0 or better in PTA courses or permission of instructor. (SFCC)

PTA 202 – Introduction to Orthopedics (3 cr)

This course is the basic introduction to biomechanics and mechanisms of orthopedic injuries and diseases. Fundamentals of orthopedic terminology are addressed, and a survey of surgical repair with emphasis on rehabilitation is included. Prerequisite: Grade of 2.0 or better in PTA courses or permission of instructor. (SFCC)

PTA 210 – PTA Procedures IV: Therapeutic Exercise (7 cr)

Instruction addresses therapeutic exercise and selected kinesiological principles related to exercise. Also addressed are basic principles of selected physical therapy testing procedures. Specific exercise protocols and prosthetic and orthotic devices are studied. Patient motivation issues and work as a member of the health care team are covered. Prerequisite: Grade of 2.0 or better in PTA 112 and all PTA courses. (SFCC)

PTA 211 – PTA Procedures V: Rehabilitation Applications (7 cr)

Instructional focus is on application of basic physical therapy skills for the treatment of specific neurologic disabilities including spinal cord injuries, stroke, head injuries, MS and other neurologic diseases. Additional emphasis is placed on the development of treatment programs for orthopedic patients including upper and lower extremity dysfunctions, injuries to the spine, and lower extremity amputations. Students develop specific home programs, instruct in family training, and select appropriate assistive devices and equipment for neurologic, geriatric and orthopedic patients. Students apply physical therapy skills for the comprehensive treatment of the geriatric patient, vestibular and burn patients, and analyze functional assessments and testing for sensory related deficits. Prerequisite: Grade of 2.0 or better in PTA 210 and all PTA courses and concurrent enrollment in PTA 201, 252. (SFCC)

PTA 212 – PTA Procedures VI (4 cr)

Instruction is provided in normal and abnormal development, pediatric treatment philosophies and principles, pediatric assessment tools, gross motor skill development, behavior management and communication skills, and common pediatric disorders. Laboratory sessions focus on facilitation of developmental sequence, common treatment approaches including handling, positioning, range of motion, strength and mobility. Prerequisite: Grade of 2.0 or better in previous PTA courses and concurrent enrollment in PTA 202, 210, 251, 254. (SFCC)

PTA 251 – Clinical Experience II (1 cr)

Supervised clinical experience in varied physical therapy sites affiliated with the college. Students are expected to continue to develop skills in basic patient care, documentation, modalities and functional activities which have been previously evaluated in the laboratory setting. Prerequisite: Grade of 2.0 or better in all previous PTA courses and concurrent enrollment in PTA 202, 210, 212, 254. (SFCC)

PTA 252 – Clinical Experience III (3 cr)

Supervised clinical experience in varied physical therapy sites affiliated with the college. Students are expected to continue to develop skills in basic patient care, documentation, modalities and functional activities which have been previously evaluated in the laboratory setting. Prerequisite: Grade of 2.0 or better in previous PTA courses and concurrent enrollment in PTA 201, 211, 255. (SFCC)

PTA 253 – PTA Clinical Affiliation (12 cr)

This is a full-time internship of practical performance and appropriate application of physical therapy procedures and techniques under supervision in two selected clinic settings or a physical therapy department associated with the college. This affiliation is sufficient to insure the student has reached the minimum level of competency required for an entry-level physical therapist assistant in the application of physical therapy procedures and the understanding of clinic responsibilities and supervisory relationships prior to graduation. Grading option: Pass/fail. Prerequisite: Grade of 2.0 or better in all PTA courses or permission of instructor. (SFCC)

PTA 254 – Clinical Seminar II (1 cr)

Clinical lecture and discussion seminar will focus on cultural competence and verbal and written communication with clients and the health care team. Prerequisite: Grade of 2.0 or better in previous PTA courses and concurrent enrollment in PTA 202, 210, 212, 251. (SFCC)

PTA 255 – Clinical Seminar III (1 cr)

Survey of issues surrounding patient care and teamwork. Topics will focus on patient interaction, adjustment to disability and grief, ethics, and physical therapist and physical therapist assistant roles and responsibilities. Prerequisite: Grade of 2.0 or better in previous PTA courses and concurrent enrollment in PTA 201, 211, 252. (SFCC)

PHYSICS**PHYS 100 – Introductory Physics (5 cr)**

This course is intended for nonscience majors to provide exposure to the culture of physics—its history, principles, laws, recent developments and societal impacts. Math is minimal and weekly laboratory study is required. (SCC, SFCC)

PHYS 101 – General Physics (5 cr)

This course is for science and other majors not requiring calculus-level physics. There is an emphasis on mechanics, Newton's Laws of Motion, rotation motion and conservation principles. This course also requires a weekly laboratory. Prerequisite: 2.0 or better in one of the following MATH courses: MATH& 141, 142, 151, 152, 153, 254, MATH 220, 225, 274. (SCC, SFCC)

PHYS 102 – General Physics (5 cr)

For science and other majors not requiring calculus-level physics. Emphasis on wave motion optics, thermodynamics and fluids. Requires weekly laboratory. Prerequisite: PHYS 101. (SCC, SFCC)

PHYS 103 – General Physics (5 cr)

For science and other majors not requiring calculus-level physics. Emphasis on electricity, magnetism, relativity and quantum physics. Requires weekly laboratory. Prerequisite: PHYS 101. (SCC, SFCC)

PHYS 105 – Optics (5 cr)

Light phenomena with emphasis on aspects encountered in photographic studies. Geometrical, physical and wave optics, photometry, color, and light sources. (SFCC)

PHYS 108 – Acoustics (5 cr)

Nonmath approach to basic topics of physics emphasizing the application of these topics to the field of acoustics. Includes mechanics, sound, light and electricity. (SFCC)

PHYS 120 – Fundamentals of Medical Physics (5 cr)

This course emphasizes applications of physics in the health science areas for cardiopulmonary and echocardiographic instrumentation. Topics covered include mechanics, fluid statics (Archimedes' and Pascal's Principles), molecular phenomena related to biological processes, elasticity and wave motion, physics of sonographic imaging, and instruments. Prerequisite: MATH 099 or equivalent; PHYS 100 or high school physics. Enrollment is limited to invasive or noninvasive cardiovascular technology students. (SCC)

PHYS 121 – Medical Physics II (4 cr)

Advanced applications in medical physics and instrumentation are emphasized in this course. Topics include pressure and energy of flowing fluids in the circulatory system with various medical applications of Poiseuille's Law, Bernoulli Effect, Venturi Effect; AC and DC electric circuits; instrumentation, and safety issues; applications using LASERs; light, nuclear radiation; and other topics in modern physics. Other topics may include Magnetic Resonance Imaging (MRI), Near Infrared (NIR) spectroscopy, Ocular Coherence Tomography (OCT), or Positron Emission Tomography (PET). Prerequisite: PHYS 120 and enrolled in an invasive or noninvasive cardiovascular technology program. (SCC)

PHYS 200 – Introduction to Einstein's Physics (5 cr)

Einstein's physics is designed for the non physics major who desires to understand 20th century physics. The course begins with a review of the inadequacies of classical physics, then develops the ideas of relativity (both special and general) and quantum mechanics. The course includes a weekly two-hour laboratory exercise. Algebra is used extensively. Prior knowledge of classical physics is necessary. Prerequisite: MATH 099 and PHYS 100. (SFCC)

PHYS 201 – Engineering Physics I (5 cr)

Calculus-level classical physics with emphasis on mechanics. This course is for engineering and physical science majors transferring to four-year institutions. Topics include kinematics, dynamics, gravity, momentum and energy. A weekly laboratory is required. Prerequisite: PHYS 100 or one year of high school physics and MATH& 152 and concurrent enrollment in MATH& 153. (SFCC)

PHYS 202 – Engineering Physics II (5 cr)

Calculus-level classical electricity and magnetism for physical science and engineering majors. Topics include AC and DC circuits, Gauss' Law, Kirchhoff's Laws and Maxwell's equations. A weekly laboratory is required. Prerequisite: PHYS 201 and MATH& 153. (SFCC)

PHYS 203 – Engineering Physics III (5 cr)

Calculus-level classical thermodynamics and wave mechanics for physical science and engineering majors. Topics include laws of thermodynamics, thermal properties of matter, mechanical waves, sound and light. A weekly laboratory is required. Prerequisite: MATH& 153 and PHYS 201. (SFCC)

POLITICAL SCIENCE**POLS& 101 – Intro to Political Science (5 cr)**

Development of Western political theory and ideology, comparative analysis of contemporary ideologies, examination of political processes with emphasis on the individual's role. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

POLS 102 – Comparative Government (5 cr)

This is an introductory, interdisciplinary course designed to introduce students to the systematic study of comparative political systems. In an increasingly interdependent world, this course provides students with the conceptual and analytical tools to study political behavior, institutions and processes of various countries across the globe. (SCC)

POLS 125 – Introduction to Global Issues (5 cr)

This is an introductory, multidisciplinary course designed to introduce the student to pertinent global issues. A goal of this course is to foster and promote understanding, attitudes and skills that enables citizenry in local communities to function humanely in an age of global interdependence. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

POLS 201 – State and Local Government (5 cr)

Development of an understanding of the structure of state and local government in general, and Washington in particular, including a working knowledge of current issues facing the state and its political subdivisions. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

POLS& 202 – American Government (5 cr)

The basic course develops an understanding of American politics and political institutions, the philosophies and concepts of American constitutionalism, and the structure and operation of the American form of government. Emphasis is placed on the theories and practice of democracy, pluralism and elitism. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

POLS& 203 – International Relations (5 cr)

A broad survey of the relations of nations: Political, military, economic and cultural, and of the forces for order in the international world. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

POLS 204 – Political Philosophy (5 cr)

This is an introduction to the basic theories behind political philosophy. Areas of emphasis includes government, state of nature, authority and legitimacy. (SCC)

POLS 205 – Islam and the West: Theater of Cooperation and Conflict (5 cr)

This introductory, multidisciplinary course introduces students to the systematic study of Islam and the West in world politics. Conceptual and analytical tools to study Global Islam are provided. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

POLS 280 – Introduction to Modern British Government and Social Services (3 cr)

A two-week introduction to British cultural, economic and political institutions in their historical context. Prerequisite: Only for students in England for the Service Learning in England program. (SFCC)

PSYCHOLOGY**PSYC& 100 – General Psychology (5 cr)**

A general survey of the following areas of psychology: Physiology, sensation/perception, cognition/memory, motivation, learning, development, social, intelligence, personality, mental health and scientific method. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

PSYC 181 – Psychology Seminar (1-5 cr)

Seminars provide contemporary depth in a variety of areas and problems, e.g., business, education, and the helping professions. Psychology seminars provide career exploration for both intended psychology majors and those interested in specific seminar topics. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. PSYC& 100 with a 2.0 or better within the last five years or permission of instructor. (SCC, SFCC)

PSYC 182 – Psychology Seminar (1-5 cr)

Seminars provide contemporary depth in a variety of areas and problems, e.g., business, education, and the helping professions. Psychology seminars provide career exploration for both intended psychology majors and those interested in specific seminar topics. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. PSYC& 100 with a 2.0 or better within the last five years or permission of instructor. (SCC, SFCC)

PSYC& 200 – Lifespan Psychology (5 cr)

A survey of human development from conception through late adulthood. Physical, emotional, cognitive and psychosocial development will be explored. Prerequisite: Must have passed PSYC& 100 with a 2.0 or better within the last five years or permission of instructor. (SCC, SFCC)

PSYC 204 – Research Methods in Social Science (5 cr)

The study of the basic data, theory, methodology and attitudes of the social scientist independent of any special area. Prerequisite: PSYC& 100 or SOC& 101. (SCC, SFCC)

PSYC 210 – Conception through Adolescent Developmental Psychology (5 cr)

A survey of human development focusing on the physical, mental and emotional/social growth processes from conception through adolescence. Other topics include the history and principles of developmental psychology, childhood education and parenting. Prerequisite: Must have passed PSYC& 100 with a 2.0 or better within the last five years or permission of instructor. SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

PSYC& 220 – Abnormal Psychology (5 cr)

An introduction to the diagnosis, classification, research and theoretical concepts relating to abnormal and deviant behavior. Prerequisite: PSYC& 100 with a 2.0 or better within the last five years or permission of instructor. (SCC, SFCC)

PSYC 250 – Psychology of Adjustment (5 cr)

Human behavioral, mental and emotional experience are described and analyzed in the context of mental health and psychological growth, with emphasis on issues and problems of personal development and interpersonal relationships. Prerequisite: Must have passed PSYC& 100 with a 2.0 or better within the last five years or permission of instructor. (SCC, SFCC)

PSYC 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

PSYC 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

RADIOLOGY TECHNOLOGY**RAD 111 – Radiographic Positioning I (5 cr)**

This course reviews specific anatomy as it appears on x-ray images such as chest and abdomen, upper and lower limbs, shoulder and pelvic girdles, and vertebral column systems. Students learn positional techniques used to take appropriate radiographs of each body part based on the physician's request. Correct alignment of radiographic equipment is emphasized. Exposure factors, patient apprehension, safety and comfort are addressed. (SCC)

RAD 112 – Medical Terminology for Radiology I (1 cr)

This course introduces medical terms and standard medical abbreviations. The language of medicine as it relates to radiology is emphasized. Logical methods for word formations, pronunciation, pluralization and spelling of medical terms are presented. (SCC)

RAD 113 – Patient Care and Ethics I (2 cr)

Students learn the necessary skills for meeting the physical and emotional needs of the patient. Patient preparation required to perform a radiographic examination is emphasized. (SCC)

RAD 114 – Radiographic Image Evaluation I (2 cr)

This course introduces essential technical factors used to evaluate radiographic quality including collimation, shielding, positioning, anatomical anomalies, density, contrast and film artifacts in the developed radiograph. Types of images being evaluated build as students' knowledge of positioning grows. (SCC)

RAD 115 – Fuch's Radiographic Principles I (3 cr)

This course introduces various forms of imaging. Students learn the basic principles of radiographic exposure, formulation of techniques and purpose, and the use of accessories such as grids, screens, collimators, filters and the x-ray tube. (SCC)

RAD 116 – Clinical Education I (8 cr)

Students learn radiographic positioning, darkroom and office procedures, patient management and critical analysis of radiographs in a clinical setting. Students develop psychomotor skills, cognitive domain and affective behavior in the science of radiographic technology. (SCC)

RAD 121 – Radiographic Positioning II (3 cr)

This course reviews the anatomy of each body part and system such as GI, Urinary, respiratory, bony thorax, and reproductive. Students learn positional techniques used to take appropriate radiographs of each body part or system based on the physician's request. Correct alignment of the image receptor and x-ray tube is emphasized. Exposure factors, patient apprehension, safety and comfort are covered. Prerequisite: RAD 111. (SCC)

RAD 122 – Medical Terminology for Radiology II (1 cr)

This course continues with the concepts introduced in RAD 112. Students' medical vocabulary is expanded to include medical vernacular pertaining to the positioning class topics. Prerequisite: RAD 112. (SCC)

RAD 123 – Patient Care and Ethics II (2 cr)

This course continues with the concepts introduced in RAD 113. Students learn the necessary skills for meeting the physical and emotional needs of the patient. Patient preparation required to perform a radiographic examination is emphasized. Potential situations that may lead to litigation are covered. Students also learn to protect themselves and the patient. Prerequisite: RAD 113. (SCC)

RAD 124 – Radiographic Image Evaluation II (2 cr)

Students build on the skills introduced in RAD 114 and develop radiographic assessment skills based on technical factors such as collimation, shielding, positioning, anatomical anomalies, density, contrast and image artifacts. Prerequisite: RAD 114. (SCC)

RAD 125 – Fuch's Radiographic Principles II (3 cr)

This course continues with the concepts introduced in RAD 115. Students learn about radiation protection and use of protective devices. Film and film holders are emphasized. Students learn about radiation processing chemicals, darkroom design and care are emphasized. Prerequisite: RAD 115. (SCC)

RAD 126 – Clinical Education II (9 cr)

Students learn radiographic positioning, darkroom and office procedures, patient management and critical analysis of radiographs in a clinical setting. Students continue to develop psychomotor skills, cognitive domain and affective behavior in the science of radiographic technology. Prerequisite: RAD 116. (SCC)

RAD 127 – Mobile/Surgical Procedures (1 cr)

This course reviews common mobile/surgical procedures using positional techniques to take appropriate radiographs of each body part based on the physician's request. Students review correct alignment of radiographic equipment, exposure factors, patient apprehension, safety and comfort. (SCC)

RAD 131 – Radiographic Positioning III (2 cr)

Students review the anatomy of the skull and facial bones and positional techniques utilized to take appropriate radiographs based on the physician's request. Correct alignment of image, anatomy and x-ray tube are emphasized. Students prepare for comprehensive tests. Prerequisite: RAD 121. (SCC)

RAD 132 – Radiation Physics (2 cr)

This course reviews principles and concepts of scientific measurement, molecular theory, matter and energy, and electricity, magnetism and circuitry. Particular emphasis is placed on imaging modalities, x-ray circuitry, and the principles and production of x-rays. (SCC)

RAD 134 – Radiographic Image Evaluation III (2 cr)

Students continue to develop radiographic assessment skills based on technical factors such as collimation, shielding, positioning, anatomical anomalies, density, contrast and image artifacts. Prerequisite: RAD 124. (SCC)

RAD 136 – Clinical Education III (9 cr)

This course continues with the development of clinical skills introduced in RAD 126. Prerequisite: RAD 126. (SCC)

RAD 141 – Radiographic Positioning IV (2 cr)

This course is a review of specific anatomy as it appears on x-ray images such as nervous, biliary arthrography and tomography systems. Students learn positional techniques used to take appropriate radiographs of each body part based on the physician's request. Correct alignment of radiographic equipment is emphasized. Exposure factors, patient apprehension, safety and comfort are addressed. Prerequisite: RAD 131. (SCC)

RAD 144 – Radiographic Image Evaluation IV (1 cr)

Students continue to develop radiographic assessment skills based on technical factors such as collimation, shielding, positioning, anatomical anomalies, density, contrast and image artifacts. Prerequisite: RAD 134. (SCC)

RAD 145 – Fuch's Radiographic Principles III (2 cr)

This course continues with the concepts introduced in RAD 125. Students learn about computerized and digital imaging, while radiation protection is emphasized. Prerequisite: RAD 125. (SCC)

RAD 146 – Clinical Education IV (8 cr)

This course continues with the development of clinical skills introduced in RAD 136. Prerequisite: RAD 136. (SCC)

RAD 156 – Clinical Education VIII (1-7 cr)

Students learn radiographic clinical cat scan procedures. (SCC)

RAD 157 – Clinical Education IX (1-7 cr)

Students learn radiographic clinical cat scan procedures. (SCC)

RAD 211 – Radiographic Positioning V (1 cr)

This course is a review of specific anatomy as it appears on x-ray images such as chest and abdomen, upper and lower limbs, shoulder and pelvic girdles, bony thorax, vertebral column and gastrointestinal systems. Students learn positional techniques used to take appropriate radiographs of each body part based on the physician's request. Correct alignment of radiographic equipment is emphasized. Exposure factors, patient apprehension, safety and comfort are addressed. Prerequisite: RAD 141. (SCC)

RAD 212 – Quality Management (1 cr)

This course introduces quality assurance programs and techniques used in film quality evaluation, processing and x-ray instrumentation. Students study the theory and practical application of quality assurance. (SCC)

RAD 213 – Various Modalities (2 cr)

This course introduces the elements of ultrasound technology principles, nuclear medicine, mammography, radiation therapy, magnetic resonance imaging (MRI) and other special procedures. Principles of interventional and angiographic procedures, angiographic equipment and visualized anatomy are addressed. History of development, application and image presentation also are presented. The scope of medical imaging techniques and their correlation is emphasized. (SCC)

RAD 214 – Radiographic Image Evaluation IV (2 cr)

This course introduces essential technical factors used to evaluate radiographic quality including collimation, shielding, positioning, anatomical anomalies and density, contrast, and film artifacts in the developed radiograph. Types of images being evaluated build as students' knowledge of positioning grows. Prerequisite: RAD 134. (SCC)

RAD 215 – Radiation Biology and Protection (2 cr)

This course introduces the effects of ionizing radiation on biologic tissue. An overview of pertinent pathological diseases is presented, and the concepts of radiation protection is discussed and emphasized. (SCC)

RAD 216 – Clinical Education V (9 cr)

This course continues with the development of clinical skills introduced in RAD 146. Prerequisite: RAD 146. (SCC)

RAD 223 – Radiation Pathology (2 cr)

A radiologist discusses disease processes, anomalies and technical factors related to properly completed radiographs. (SCC)

RAD 224 – Radiographic Image Evaluation V (2 cr)

This course introduces essential technical factors used to evaluate radiographic quality including collimation, shielding, positioning, anatomical anomalies and density, contrast, and film artifacts in the developed radiograph. Types of images being evaluated build as students' knowledge of positioning grows. Prerequisite: RAD 214. (SCC)

RAD 225 – Skull and GI Review (1 cr)

This course reviews the positional techniques utilized when taking radiographs of the skull and GI system based on the physician's request. (SCC)

RAD 226 – Clinical Education VI (9 cr)

This course continues with the development of clinical skills introduced in RAD 216. Prerequisite: RAD 216. (SCC)

RAD 235 – Pharmacology/Venipuncture (1 cr)

Students learn safe administration of pharmaceuticals including clinical experience in needle placement. Needle insertion and contrast media injection, and principles of pharmacological agents used in a radiology department are emphasized. (SCC)

RAD 236 – Clinical Education VII (9 cr)

This course continues with the development of clinical skills introduced in RAD 226. Prerequisite: RAD 226. (SCC)

RAD 237 – Review and Registration Preparation (3 cr)

Students review all the material covered in previous radiology technology courses in preparation of the ARRT examination which may be taken on or after the day of graduation from the program. (SCC)

RAD 238 – Cat Scan (1 cr)

Course content is designed to provide entry-level radiography students with principles related to computed tomography (CT) imaging. This course include instruction on the history, various components, operations and processes applied in CT. The students will also be instructed on the appropriate radiation protection that should be utilized. (SCC)

RESPIRATORY CARE**RT 110 – Physical Science for Respiratory Care (3 cr)**

This introductory course applies physical sciences to cardiopulmonary physiology, respiratory care equipment and operation, and application of physical laws to mechanical and physiological measurements. Prerequisite: Admission in program. (SCC)

RT 111 – Respiratory Care Fundamentals I (3 cr)

This is the first in a series of four-quarter courses introducing respiratory care fundamentals. Students learn the respiratory care profession, cover pulmonary anatomy and physiology, patient assessment, respiratory disease states, fundamentals of oxygen theory, and cardiopulmonary resuscitation. Prerequisite: Admission in program. (SCC)

RT 112 – Pharmacology and Medical Terminology I (1 cr)

This is first in a series of three courses on pharmacology and medical terminology. General pharmacological principles, drug classification, computations, routes of deliver and respiratory medications are emphasized. Word construction, definitions and use of terms related to medical science, hospital service and allied health specialties are covered. Prerequisite: Admission in program. (SCC)

RT 120 – Respiratory Care Fundamentals II (4 cr)

This is the second in a series of four-quarter courses introducing respiratory care fundamentals. Arterial blood gas interpretations, humidity and aerosol therapy, oxygen analyzer, pulse oximetry, airway maintenance and secretion management, patient assessment, and manual resuscitation are emphasized. Work ethics and professionalism also are covered. A CPR instructor course is included. Prerequisite: Completion of previous quarter. (SCC)

RT 130 – Fundamentals of Spirometry and Blood Gas Analysis (3 cr)

This is first in a series of three courses applying the technique of spirometry and blood gas analysis in the diagnosis of cardiopulmonary dysfunction. Prerequisite: Completion of previous quarter. (SCC)

RT 131 – Cardiopulmonary Anatomy and Physiology (1 cr)

This course introduces cardiopulmonary anatomy and physiology. The structure and function of the cardiopulmonary system are emphasized. Prerequisite: Completion of previous quarter. (SCC)

RT 132 – Respiratory Care Fundamentals III (4 cr)

This is the third in a series of four-quarter courses introducing respiratory care fundamentals. Hyperinflation therapy, chest physiotherapy, introduction to positive pressure ventilators, a seven-hour special unit on AIDS related education, as required by state law, and infection control are emphasized. Prerequisite: Completion of previous quarter. (SCC)

RT 133 – Pharmacology and Medical Terminology II (3 cr)

This course is second in a series of three on pharmacology dealing with principles of mucolytics, antiasthmatics, antimicrobials, anti-inflammatory agents, surface-active and special applications. The medical terminology portion includes laboratory assessment values associated with the cardiopulmonary system. A written report on a specific drug is required. Prerequisite: Completion of previous quarter. (SCC)

RT 134 – Respiratory Care Clinical I (1 cr)

Students observe the role of the respiratory care practitioner in the acute care environment while applying didactic and psychomotor skills at the bedside during administration of fundamental respiratory care skills. Prerequisite: Completion of previous quarter. (SCC)

RT 140 – Respiratory Care Fundamentals IV (2 cr)

This is the final course in a series of four covering the psychosocial stages of development from infant to geriatrics, a foundation describing the unique requirements of the pediatric patient and pediatric disorders, and the classification, theory and operation of adult acute care ventilators. Prerequisite: Completion of previous quarter. (SCC)

RT 141 – Medical/Surgical Respiratory Care (1 cr)

This is an overview course of the medical/surgical problems related to respiratory disease, including the etiology, course therapy and prognosis. Prerequisite: Completion of previous quarter. (SCC)

RT 142 – Computer Applications for Respiratory Care (1 cr)

This course introduces fundamental applications of microcomputers, patient management and simulated scenarios. Basic technical writing applied to report preparation, resume writing and cover letters are covered. Prerequisite: Completion of previous quarter. (SCC)

RT 143 – Respiratory Care Clinical II (5 cr)

This course continues with the concepts presented in RT 134 with emphasis on specific therapeutic techniques including oxygen, humidity and aerosol therapy, airway management, hyperinflation, and chest physiotherapy with additional exposure to pediatrics, the surgical environment and the infection control process. Prerequisite: Completion of previous quarter. (SCC)

RT 210 – Critical Care I (6 cr)

This course introduces all aspects of the adult critically ill patient in need of life support systems, including hemodynamic monitoring, cardiopulmonary assessment and ventilator management. Prerequisite: Completion of previous quarter. (SCC)

RT 211 – Advanced Cardiac Life Support (2 cr)

This is the third in a series of cardiopulmonary pharmacology and advance cardiac life support courses. Content areas include the principles and techniques of advanced emergency cardiac care. Prerequisite: Completion of previous quarter. (SCC)

RT 212 – Respiratory Care Clinical III (5 cr)

This course continues with the concepts presented in RT 143 with emphasis on the critically ill adult patient. Team management skills, maintenance and withdrawal of life support, cardiopulmonary assessment, and hemodynamic monitoring are emphasized. Prerequisite: Completion of previous quarter. (SCC)

RT 213 – Pulmonary Volumes, Diffusion and Instrumentation (3 cr)

This advanced course introduces pulmonary diagnostics relating to measurement and assessment of flow volume loops, lung volumes, distribution and diffusion. Prerequisite: Completion of previous quarter. (SCC)

RT 214 – Pulmonary Diagnostics Clinical I (1 cr)

Students assist in the evaluation of patients with pulmonary disease including pulmonary function testing and arterial blood gas analysis in hospital and private practice laboratories. Prerequisite: Completion of previous quarter. (SCC)

RT 215 – Cardiopulmonary Pathophysiology (1 cr)

The pathophysiology of cardiopulmonary diseases including obstructive, restrictive, vascular and lung injuries are presented in this course. Prerequisite: Completion of previous quarter. (SCC)

RT 220 – Critical Care II (5 cr)

This course continues with the concepts in RT 210 emphasizing advanced mechanical ventilator applications and nonconventional approaches to patient management in critical care settings with an introduction to the sub-acute, skilled nursing, home and rural areas. Interviewing skills and job market analysis are presented. Prerequisite: Completion of previous quarter. (SCC)

RT 221 – Perinatal Respiratory Care (3 cr)

This course emphasizes pediatric and neonatal respiratory care dealing with the pathophysiology, disease status and assessment of the newborn and pediatric patients including therapeutic procedures, resuscitation and mechanical ventilation. Literature review leading to written reports and oral discussion of current and advanced developments also is included. Prerequisite: Completion of previous quarter. (SCC)

RT 222 – Respiratory Care Clinical IV (4 cr)

This course continues with the concepts presented in RT 212 with the addition of pediatric and neonatal intensive care settings and an observation in an alternative site. Students observe and assist in patient assessment with pulmonologist and the program's medical director. Prerequisite: Completion of previous quarter. (SCC)

RT 223 – Advanced Pulmonary Diagnostics (4 cr)

This course introduces specialized diagnostic procedures including radiographic, bronchoscopies, polysomnography, pulmonary stress testing and exercise physiology. Prerequisite: Completion of previous quarter. (SCC)

RT 224 – Advanced Pulmonary Diagnostics Clinical II (1 cr)

This course continues with the applications introduced in RT 214. Students assist in the evaluation of patients with pulmonary disease and disorders in hospital and private practice laboratories including the sleep lab, bedside and outpatient bronchoscopy, and pulmonary stress testing. Prerequisite: Completion of previous quarter. (SCC)

RT 230 – Current Trends in Respiratory Care (2 cr)

This course explores current concepts in respiratory care and health care delivery with student presentations and discussions of cardiopulmonary patient case studies involving diagnostic and therapeutic modalities. Prerequisite: Completion of previous quarter. (SCC)

RT 231 – Patient Management and Problem Solving (3 cr)

This course introduces the application of respiratory care practices and procedures leading to patient problem solving including computer applications with clinical simulations based on entry and advanced national board exams. Prerequisite: Completion of previous quarter. (SCC)

RT 232 – Sub-Acute/Rehabilitation Respiratory Care (2 cr)

This course introduces the application of principles of respiratory care to patients being managed in sub-acute, extended and skilled nursing facilities, rural and home care. Smoking cessation and wellness concepts are shared with the local community. Prerequisite: Completion of previous quarter. (SCC)

RT 233 – Fundamentals of Management in Health Care (2 cr)

This course introduces organizational structure, job descriptions and evaluation, employee benefits, reimbursement, budgeting, scheduling, and other management skills required for employment in the health care industry. Prerequisite: Completion of previous quarter. (SCC)

RT 234 – Respiratory Care Clinical V (5 cr)

Students transition from student practice to that of a respiratory care practitioner. Added clinical practice in the sub-acute, home care and optional rural environments is offered. Prerequisite: Completion of previous quarter. (SCC)

RUSSIAN**RUSS& 121 – Russian I (5 cr)**

This course prepares students to be proficient in Russian sound and writing systems, to carry on a conversation in Russian using everyday vocabulary, and to discuss routine, daily activities. (SCC, SFCC)

RUSS& 122 – Russian II (5 cr)

This course prepares students to be proficient in Russian sound and writing systems, to carry on a conversation in Russian using everyday vocabulary, and to discuss routine, daily activities. Prerequisite: RUSS& 121 is required. (SCC, SFCC)

RUSS& 123 – Russian III (5 cr)

This course prepares students to be proficient in Russian sound and writing systems, to carry on a conversation in Russian using everyday vocabulary, and to discuss routine, daily activities. Prerequisite: RUSS& 122 is required. (SCC, SFCC)

SALISH**SAL 101 – Salish I (5 cr)**

Interior Salish Language and Culture focuses on Nselxcin language traditionally spoken by the Aboriginal people of North Central and Eastern Washington and Southern British Columbia. Students learn to speak and understand basic Salish and are introduced to the International Phonetic Alphabet. The course consists of a variety of communicative lessons, each with a core vocabulary, phrases and usage information. Course materials are supplemented with songs, traditional stories and other cultural teachings. (SCC, SFCC)

SAL 102 – Salish II (5 cr)

A continuation of Salish 101, this course, focuses on Nselxcin language traditionally spoken by the Aboriginal people of North Central and Eastern Washington and Southern British Columbia. Students learn to speak and understand basic Salish and are introduced to the International Phonetic Alphabet. The course consists of communicative lessons, each with a core vocabulary, phrases and usage information. Course materials are supplemented with songs, traditional stories and other cultural teachings. Prerequisite: SAL 101. (SCC, SFCC)

SAL 103 – Salish III (5 cr)

Students use the foundation of language acquired in Salish 101 and 102 in order to study and memorize traditional plateau stories written and recorded in the Nselxcin language. This Interior Salish Language and Culture course focuses on Nselxcin language traditionally spoken by the Aboriginal people of North Central and Eastern Washington and Southern British Columbia. In Salish 103 Students increase their proficiency in reading and writing using the International Phonetic Alphabet. The course consists of a variety of literature lessons, each with a core vocabulary and narrative phrases, as well as usage and grammatical information. Course materials are supplemented with songs and other cultural teachings. Prerequisite: SAL 101, 102. (SCC, SFCC)

SMALL BUSINESS MANAGEMENT**SBM 101 – How to Start a Small Business (5 cr)**

This course offers an interesting and realistic look at the scope and trends of small business, the role and future of small business in our economy, and the advantages and disadvantages of owning a business. The main causes for business failure and success, the importance of preparing a business plan, and resources that are available to help the small business owner succeed also are addressed. The class is based on current information and hands-on participation by the student. (SCC-telecourse only) (SCC, SFCC)

SBM 105 – Targeting Your Market (2 cr)

Introduces students to marketing by examining marketing problems facing the small business owner today. Helps the small business owner better understand how to afford marketing research, select a great location, determine methods of pricing goods and services for profit, and understand customer buying habits. (SFCC)

See program/course abbreviation key on page 143.

SBM 267 – Cooperative Education Work Experience (1-18 cr)

For course description see Cooperative Education. (SFCC)

SOCIAL SERVICES**HSSOC 115 – Social Policy (5 cr)**

This is an introductory course that is policy-oriented. It attempts to instill systematic habits of analysis and inquiry that will increase students' awareness and objectivity. The focus is on current issues and problems in social work. (SFCC)

HSSOC 176 – Counseling Techniques (5 cr)

Various approaches to the treatment of chemical dependency are addressed in this course. Students are exposed to basic counseling skills, strategies employed in chemical dependency treatment, counseling techniques used in addressing treatment needs, and techniques used for removing blocks to recovery. Specific techniques are demonstrated and practiced that are appropriate for a variety of populations suffering from chemical dependency. (SFCC)

HSSOC 221 – Treatment Theories in Human Services (5 cr)

Concepts, theories and practices regarding social work treatment are covered in this course. Focus is on the constructs, underlying principles, theories, practices and desired outcomes of several contemporary treatment modalities. Prerequisite: HSSUB 176. (SFCC)

HSSOC 279 – Case Management (3 cr)

This course prepares students to function effectively as case managers in state-approved chemical dependency treatment programs. It includes detailed instruction in a systemized, uniform problem-oriented recording system approved by DASA, as well as methods and strategies employed in intervention, assessment, intake, treatment planning and case supervision in a variety of treatment settings. (SFCC)

SOCIOLOGY**SOC& 101 – Intro to Sociology (5 cr)**

Basic concepts and theories of sociology with an emphasis on the group aspects of human behavior. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

SOC& 201 – Social Problems (5 cr)

Social problems have existed in societies throughout time. We live in an increasingly connected world where the social problems experienced in one nation are influenced by events in other parts of the world. This class explores social problems in the U.S. as well as examines social problems on a global scale. Topics covered include: Globalization, world economy and world poverty, human rights, population growth and environmental destruction, race and gender, crime, war and terrorism. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

SOC 204 – Research Methods in Social Science (5 cr)

The study of the basic data, theory, methodology and attitudes of the social scientist independent of any special area. Prerequisite: PSYC& 100 or SOC& 101. (SCC, SFCC)

SOC 211 – Marriage and the Family (5 cr)

A sociological analysis of the institution of the family including historical and cross-cultural variations of the family structure and mate selection processes; the modern family institution with regard to the sexual, reproductive, economic and socialization function; newly emerging lifestyles, alternate living patterns, family disorganization, and changing definitions of family. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

SOC 221 – Race and Ethnic Relations (5 cr)

We are a society unprecedented in its diversity of color, class, and cultural origin that reflects the fundamental ethnic and racial composition as well as stratification of the United States population. This class offers a comprehensive examination of race relations that commences with an appreciation of diversity in the United States and seeks to understand these relations through a historically grounded comparative analysis of several dominant/minority global patterns. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SCC, SFCC)

SOC 230 – Sociology of Gender (5 cr)

Sociology of Gender examines the changing views of gender in modern society and explores the available research on the social and institutional pressures that shape women and men and their roles in society. This course directly confronts the myths, misconceptions and stereotypes surrounding nearly every aspect of gender, including work, education, sexuality, politics, economics, marriage, family, crime and spirituality. This course also includes a cross-cultural perspective on gender. Prerequisite: SFCC recommended minimum reading placement score: COMPASS 80, ASSET 40. (SFCC)

SOC 250 – Sociology of Religion (5 cr)

A sociological analysis of the individual forces, the cultural systems and the social structures that, in interaction, shape religion and are shaped by it. Establishes a powerful frame of reference to understanding the definition of religion, the functions of religions, aspects of religions and probable future. (SCC)

SOC 261 – Crime and Justice (5 cr)

Explores the phenomenon of crime; considers its causes, theories of prevention and the institutional means employed to combat it, including police, courts and corrections. Crime is interpreted as an American paradox; it is feared and deplored, yet persists and grows. The course examines that paradox by focusing on cultural contradiction in American society regarding crime, justice and punishment. (SCC, SFCC)

SOC 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

SOC 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

SPANISH**SPAN 105 – Spanish for Social Workers (2 cr)**

Students are provided with the basic grammar and vocabulary necessary to interpret documents, ask the most frequently asked questions in the social service profession, and to understand the answers to those questions. (SCC, SFCC)

SPAN 107 – Business Spanish (4 cr)

An introductory course designed for students preparing for a career in business. Upon completion, students are able to handle the most common situations that they encounter in Spain and be familiar with its government, economy and recent history. (SCC, SFCC)

SPAN& 121 – Spanish I (5 cr)

These courses are an introduction to the Spanish language, traditions and culture using the most modern methods of language learning with emphasis on oral communication. Students complete lab assignments outside of scheduled class times. (SCC, SFCC)

SPAN& 122 – Spanish II (5 cr)

These courses are an introduction to the Spanish language, traditions and culture using the most modern methods of language learning with emphasis on oral communication. Students complete lab assignments outside of scheduled class times. Prerequisite: SPAN& 121 or permission of instructor. (SCC, SFCC)

SPAN& 123 – Spanish III (5 cr)

These courses are an introduction to the Spanish language, traditions and culture using the most modern methods of language learning with emphasis on oral communication. Students complete lab assignments outside of scheduled class times. Prerequisite: SPAN& 122 or permission of instructor. (SCC, SFCC)

SPAN& 221 – Spanish IV (5 cr)

Intensive review plus emphasis on Spanish culture and the idiomatic usage of the language, both oral and written. Prerequisite: Two years of high school Spanish or one complete year of college Spanish or permission of instructor. (SCC, SFCC)

SPAN& 222 – Spanish V (5 cr)

This course places emphasis on the composition and discussion of contemporary and cultural issues, with increasingly difficult idioms and structural concepts. Prerequisite: SPAN& 221 or permission of instructor. (SCC, SFCC)

SPAN& 223 – Spanish VI (5 cr)

This course places continued emphasis on the composition and discussion of contemporary issues as well as Hispanic and Latin American culture, with increasingly difficult vocabulary and structural concepts. Prerequisite: SPAN& 221, 222 or permission of instructor. (SCC, SFCC)

SPAN 241 – Spanish Conversation and Culture (2 cr)

Students increase their vocabulary, improve their speaking ability, and gain more confidence in using previously studied grammatical concepts. Conducted in Spanish. Prerequisite: Two years of college-level Spanish (SPAN& 223) or equivalent. (SCC, SFCC)

SPAN 242 – Spanish Conversation and Culture (2 cr)

Students continue to develop their fluency in Spanish by participating in small group discussions that focus on a wide variety of topics in Hispanic culture. Conducted in Spanish. May be taken without SPAN 241 as a prerequisite. Prerequisite: Two years of college-level Spanish (SPAN& 223) or equivalent. (SCC, SFCC)

SPAN 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC, SFCC)

SPAN 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC, SFCC)

SURGICAL TECHNOLOGY**SURG 100 – Introduction to Surgical Technology (2 cr)**

This course introduces the roles of the surgical technologist emphasizing the surgical environmental and procedural safety concerns. (SCC)

SURG 101 – Surgical Procedures (5 cr)

This course is an introduction to the knowledge and techniques essential to the surgical technologist in preparation of the patient for major or minor surgical procedures. Expertise in preparation/utilization of equipment and supplies, sterilization/disinfection, aseptic techniques, robotics, and duties of the surgical technologist and assistant circulator are emphasized. Health care provider CPR is included. Prerequisite: SURG 100, 120, 125. (SCC)

SURG 104 – Central Service Clinical (1 cr)

This clinical rotation allows students the opportunity to develop performance competencies appropriate to central service units. (SCC)

SURG 105 – Blood-borne Pathogens and HIV/AIDS (1 cr)

Students are introduced to current information on blood-borne pathogens with an emphasis on HIV/AIDS education utilizing the 7-hour Washington State curriculum. This course is offered online only. (SCC)

SURG 107 – Surgical Environment (3 cr)

Students learn the skills required for the physical environment (working condition) of the operating room. Understanding the basic patient and staff safety issues are emphasized. Prerequisite: Successful completion of first quarter coursework and concurrent enrollment in SURG 100, 125. (SCC)

SURG 111 – Technical Skills I (4 cr)

This course provides practical applications for performing the duties of a circulating assistant and scrub technician in a simulated operating room. Duties include patient preparation, equipment and supplies preparation, instrumentation, sterilization/disinfection practices, and aseptic techniques. Prerequisite: Concurrent enrollment in SURG 101. (SCC)

SURG 120 – Disease Transmission and Control (3 cr)

This course introduces students to basic microbiology theory including discussion of pathogenic microorganisms. Methods of transmission, identification of microorganisms in the operating room, and growth control and practices in the operating room are emphasized. (SCC)

SURG 125 – Medical Terminology (5 cr)

This course introduces the structure of medical terms associated with all bodily functions emphasizing the study of root, prefixes, suffixes and eponyms. Abbreviations and correct spelling of all terms are covered. (SCC)

SURG 202 – Surgical Procedures (6 cr)

This course continues with the concepts introduced in SURG 101 with emphasis on advanced preparation and utilization of electrical equipment and lasers. Supplies necessary for specific specialties and various surgical procedures are included. Prerequisite: SURG 101 and concurrent enrollment in SURG 212, 254. (SCC)

SURG 203 – Surgical Procedures (4 cr)

This course continues with the concepts introduced in SURG 202 with emphasis on advanced preparation and utilization of equipment. Supplies necessary for specific advanced specialties and various surgical procedures are included. An introduction of physics is presented. Prerequisite: SURG 202, 212 and concurrent enrollment in SURG 206, 255. (SCC)

SURG 206 – Perioperative Care of the Patient (4 cr)

Students learn the skills required for preoperative, intraoperative and postoperative phases of the surgical patient. Understanding the patient's pharmacologic, ethical, anesthetic, wound healing and other related nursing needs are emphasized. Prerequisite: Successful completion of fourth-quarter coursework and concurrent enrollment in SURG 203, 255. (SCC)

SURG 212 – Technical Skills II (4 cr)

This course continues with the applications introduced in SURG 111. Duties include patient preparation, equipment and supplies preparation, sterilizing practices, and disinfection and aseptic techniques. Prerequisite: Successful completion of SURG 101, 111 and concurrent enrollment in SURG 202. (SCC)

SURG 250 – Surgical Seminar (3 cr)

This weekly conference is based on discussion from the students' operating room experience in the form of case studies. Students also review for preparation for the national certification test. Prerequisite: SURG 255. (SCC)

SURG 254 – Operating Room Practicum (2 cr)

This course provides surgical technology students with actual experience in the operating room. In this pre-arranged practicum, students learn teamwork, flexibility, organization, and economy in time, motion and materials. Preparation of all supplies and equipment used for surgical procedures in the operation room is included. Prerequisite: SURG 101, 104, 111 and concurrent enrollment in SURG 202, 212. (SCC)

SURG 255 – Operating Room Practicum (5 cr)

This course provides surgical technology students with actual experience in the operating room. In this pre-arranged practicum, students learn teamwork, flexibility, organization, and economy in time, motion and materials. Preparation of all supplies and equipment used for surgical procedures in the operation room is included. First and second scrubbing procedures under the supervision of operating room personnel or instructor are emphasized. Prerequisite: SURG 202, 212, 254 and concurrent enrollment in SURG 203, 206. (SCC)

SURG 256 – Operating Room Practicum (10 cr)

Students gain clinical experience in affiliated hospital operating rooms assisting the circulator, and shadowing anesthesia and maternity technicians. Prerequisite: SURG 203, 206, 255 and concurrent enrollment in SURG 250. (SCC)

VASCULAR TECHNOLOGY**VASC 100 – Introduction to Echo and Vascular (2 cr)**

Introduction to the field of Echocardiography and Vascular Technology with emphasis on the role of these career pathways. Stresses the importance of professionalism, ethical behavior, and communications. Career opportunities, Credentialing, Program and Health Science student handbooks will be reviewed. Prerequisite: Admission to the program and concurrent enrollment in VASC 112, 125. (SCC)

VASC 112 – Vascular Fundamentals (4 cr)

This course is an introduction to basic vascular anatomy of the lower and upper extremities, abdomen, visceral organs and cerebral vasculature with emphasis on the physiology of these systems. An introduction to the concepts essential for the performance and interpretation of vascular exams is also included. Laboratory experience is required. (SCC)

VASC 122 – Vascular Procedures I (4 cr)

This course introduces students to the basic vascular procedures used to assess the lower and upper extremities, abdomen, visceral organs and cerebral vasculature with emphasis on the ultrasonic examinations of these systems. Instrumentation commonly used in the vascular laboratory is also presented. Laboratory experience is required. Prerequisite: Admission to the program and concurrent enrollment in VASC 135. (SCC)

VASC 123 – Hemodynamics (2 cr)

Introduction to various forms of invasive monitoring. Emphasis is placed on the basics of hemodynamic monitoring and interpretation. Normal and pathologic examples are introduced. (SCC)

VASC 125 – Ultrasound Physics and Instrumentation I (5 cr)

This course emphasizes ultrasound physics, the physics of waves, sound transmission, attenuation, pulse wave principles, transducer and ultrasound systems operations. Prerequisite: Admission to the program and concurrent enrollment in VASC 100, 112. (SCC)

VASC 126 – Technical Skills/Reading Hemodynamics (1 cr)

Introduction to various forms of invasive monitoring. Emphasis is placed on the basics of hemodynamic monitoring and interpretation. Normal and pathologic examples are introduced. Supports concepts taught in ICT 125. Prerequisite: Permission of instructor. (SCC)

VASC 131 – Core Concepts in Vasc (2 cr)

The core concepts in cardiac and vascular imaging will be explored. Applications of blood flow and hemodynamic analysis using Doppler and imaging technologies. Review of current literature and standards documents will be conducted. Prerequisite: Admission to the program and concurrent enrollment in VASC 132, 133, 138. (SCC)

VASC 132 – Vascular Procedures II (5 cr)

This course is an advanced study of normal cardiovascular physiology and the effects of pathology. It is presented in a series of physician lecture and lab demonstrations with applications in vascular, invasive and noninvasive cardiology. Prerequisite: Admission to the program and concurrent enrollment in VASC 131, 133, 138. (SCC)

VASC 133 – ECHO Fundamentals (5 cr)

Introduction to the basic principles and application of the Doppler and echocardiographic procedures. The anatomy, image assessment, hemodynamics and clinical applications of cardiac ultrasound are emphasized. Laboratory experiences are provided. Prerequisite: Admission to the program and concurrent enrollment in VASC 131, 132, 138. (SCC)

VASC 135 – Ultrasound Physics and Instrumentation II (5 cr)

This course is a continuation of the concepts introduced in VASC 125. Ultrasound physics emphasizes the Doppler techniques, artifacts, bio utilizing instrumentation to investigate the principles of Doppler techniques and artifacts. Prerequisite: Admission to the program and concurrent enrollment in VASC 122. (SCC)

VASC 138 – Cardiovascular Physiology (4 cr)

This course is an advanced study of normal cardiovascular physiology presented in a series of physician lectures and lab demonstrations with applications in invasive and noninvasive cardiology. Prerequisite: BIOL& 241, 242. Admission to the program and concurrent enrollment in VASC 131, 132, 133. (SCC)

VASC 139 – Surgical Asepsis (1 cr)

Surgical asepsis for health care providers. This class will prepare the student to create a sterile field. Gown and glove themselves and others. Procedural awareness of working in a sterile field will be developed. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

VASC 140 – Technical Skills/Surgical Asepsis (1 cr)

This class supports ICT 140. The skills of surgical asepsis and infection control are taught. Working in a sterile field and gowning and gloving are taught. Develop a surgical conscience. Prerequisite: Enrollment in ICT program or permission of instructor. (SCC)

VASC 141 – Data Collection and Presentation (3 cr)

Students explore applications in medicine and develop the ability to use the microprocessor for word processing database management and statistical analysis. Principles of statistics are reviewed and applied through database management. Prerequisite: Admission to the program and concurrent enrollment in VASC 143, 144. (SCC)

VASC 142 – Survey of Diagnostic Medical Sonography (3 cr)

A survey of basic diagnostic medical sonography with an emphasis on normal abdominal and superficial structures anatomy and abnormal disease states. Standard sonographic imaging techniques of abdomen and superficial structures, instrumentation and examination protocols will be reviewed. Laboratory experience is required. Prerequisite: Admission to the program. (SCC)

VASC 143 – Vascular Screening Simulation (4 cr)

Students are introduced to the clinical environment by spending four weeks in the clinical setting under the direction of a staff technologist. Weekly clinical seminars are conducted with SCC staff. A clinical consciousness is developed that emphasizes professionalism, clinical rapport, medical ethics and patient care. Prerequisite: Admission to the program and concurrent enrollment in VASC 141, 144. (SCC)

VASC 144 – Vascular Screening Seminar (2 cr)

Vascular screening seminar will be conducted weekly to discuss cases presented during the vascular screening procedures performed. A clinical consciousness will be developed with emphasis on professionalism, clinical rapport, medical ethics and patient care. Prerequisite: Admission to the program and concurrent enrollment in VASC 141, 143. (SCC)

VASC 251 – Vascular Technical Skills (4 cr)

The student will develop intermediate to advanced skills in performing all vascular technology examinations, including cerebrovascular, peripheral arterial, peripheral venous and visceral/abdominal vascular examinations, in a clinical simulation format. Emphasis is placed on new developments and specialty applications as well as development of the essential skills in the performance of all vascular technology imaging techniques. All procedures are performed under the supervision of credentialed vascular technologists. Prerequisite: Admission to the program. (SCC)

VASC 252 – Advanced Vascular Techniques (7 cr)

This course uses the fundamentals presented in the first year of vascular technology to evaluate acquired vascular disease states. The incorporation of all forms of vascular testing performance and interpretation of ultrasonic, Doppler and plethysmographic examinations is presented. Related physician lectures and laboratory experiences are provided. (SCC)

VASC 253 – Vascular Clinical I (2 cr)

Students obtain advanced hands-on experience in hospital and clinical environments. Development of clinical technique in the utilization of current echocardiographic instrumentation in the evaluation of acquired cardiovascular disease is emphasized. Students apply the principles of medical legal ethics and professionalism to the patient, physician and other members of the health team. Clinical case reports are required. Prerequisite: Admission to the program and concurrent enrollment in VASC 252. (SCC)

VASC 254 – Vascular Clinical Preparation (2 cr)

Students review all course materials in the first year with application on the clinical setting. Students develop skill at identification of both normal and abnormal images. Course is aligned with technical skills laboratory experience to allow students to develop clinical skills prior to assignment in a clinical setting. Prerequisite: Admission to the program. (SCC)

VASC 262 – Vascular Clinical II (14 cr)

Students practice clinical skills previously developed through active participation in a vascular laboratory. This course is a full-time clinical internship and is completed in an affiliated local or out-of-town hospital, clinic, or physician's office. Emphasis of this course is on the clinical skills necessary for the performance and evaluation of the vascular procedures. Written reports, review of current literature and attendance at conferences are required. Prerequisite: Admission to the program. (SCC)

VASC 272 – Vascular Clinical III (14 cr)

This course is a continuation of VASC 262 and includes a full-time clinical internship and is completed in an affiliated local or out-of-town hospital, clinic, or physician's office. Emphasis of this course is on the clinical skills necessary for the performance and evaluation of the vascular procedures. Written reports, review of the current literature and attendance at conferences are required. Prerequisite: Admission to the program. (SCC)

VASC 299 – Independent Studies in Vascular Technology (1-13 cr)

This course is designed for students wishing to complete specialized studies in the field of vascular technology. Objectives are developed jointly by the student and instructor. Credit hours are assigned according to the length of time required to complete the objectives. Credits are agreed upon at the time of enrollment. Students complete specialized clinical internships in pediatric echocardiography, color flow mapping or vascular technology. Prerequisite: Current enrollment or graduate of Vascular Technology, or permission of instructor. (SCC)

VISION CARE**VCT 110 – Ophthalmic Optics (5 cr)**

This course introduces the study of light and its properties emphasizing refraction of prisms, characteristics of ophthalmic lenses, correction of refractive errors, and practical verification and manufacturing of ophthalmic lens prescriptions. Students learn necessary skills for the setup and manufacturing of optical prescriptions. Prerequisite: ASSET math-passing score. (SCC)

VCT 111 – Ocular Anatomy and Physiology (5 cr)

This course introduces structure and function of the human eye, binocular vision as it relates to orthoptics, and ocular pharmacology. Students review symptoms relating to common ocular disorders. (SCC)

VCT 112 – Introduction to Pretesting (4 cr)

Students learn to perform professional techniques of setting up, administering and recording specialized visual tests: Instrumentation of ocular mobility, external ocular examination, color testing, peripheral and central visual field testing stereo depth perception, visual acuities and glaucoma. (SCC)

VCT 123 – Ophthalmic Dispensing (5 cr)

This course introduces the selection of eyewear with emphasis on fashion, consideration of facial shapes and types of frames. Students learn to adjust eyewear for comfort and repair ophthalmic frames. Prerequisite: VCT 110. (SCC)

VCT 124 – Ocular Pharmacology (2 cr)

Students learn to use pharmaceutical agents prescribed in the treatment of certain ocular conditions. (SCC)

VCT 125 – Advanced Pretesting (6 cr)

This course continues with the concepts introduced in VCT 112 with emphasis on advanced theory and procedures involved in setting up, administering and recording a variety of specialized visual tests. Prerequisite: VCT 112. (SCC)

VCT 126 – Contact Lenses (5 cr)

This course introduces the basic theory of contact lenses including verification, instrumentation and modification, and removal and hygiene-related usage. Prerequisite: VCT 110 or permission of instructor. (SCC)

VCT 130 – Mechanical Optics (3 cr)

This course presents practical applications in filling optical prescriptions with emphasis on cutting and edging ophthalmic lenses to ANSI standards. Prerequisite: VCT 110, 123. (SCC)

VCT 137 – Vision Care Specialties (2 cr)

This course introduces various specialties offered by many eye care professionals with emphasis on the background and theory in fundus photography, computerized vision testing, in-office surgical assistance, new research areas, sports vision, nutritional vision, vision therapy or orthoptics training, low vision, occupational and safety dispensing, and office management. One area of expanded learning is selected by the student and approved in conjunction with his/her on-site clinical supervisor and program director. Prerequisite: VCT 125. (SCC)

VCT 138 – Vision Care Practicum (6 cr)

This course offers practical applications in various office procedures at worksites such as ophthalmology and optometry offices, optical shops or the SCC clinic. Prerequisite: Successful completion of first and second quarter VCT courses. (SCC)

VCT 139 – Ophthalmic Business Management (4 cr)

Students learn public relations duties, patient handling and control, appointment scheduling, telephone and mail procedures, professional grooming, and optometric financial systems. (SCC)

WATER RESOURCES TECHNOLOGY**WATER 109 – Introduction to Water Resources (5 cr)**

This course introduces the fundamentals of field hydrology and the various components of the hydrologic cycle with an emphasis on runoff and hydrologic measurements, basic computational techniques, and water rights doctrines. (SCC)

WATER 110 – Hydrogeology (5 cr)

Students study the basic geologic framework and hydrology of aquifers. Geologic factors such rock type, structure, geomorphology and geologic environments are introduced. Groundwater terminology, basic principles of groundwater flow, practical application of geologic maps and aerial photos, and basic computational skills are emphasized. (SCC)

WATER 111 – Groundwater Systems (5 cr)

Students review the principles of groundwater flow. Hydrologic parameters associated with confined and unconfined aquifers are introduced. Interpretation of well log data as a tool for understanding aquifers is presented. Quantitative and qualitative groundwater resource problems are discussed. Practical applications and basic computational skills are emphasized. (SCC)

WATER 120 – Hydrologic Technical and Field Reports (5 cr)

This course introduces the fundamental techniques of gathering, organizing and presenting technical hydrologic information in written and verbal form. Research of employment opportunities and various job descriptions particular to the water resources career field is conducted. Students learn to complete job application forms and resumes. (SCC)

WATER 128 – Occupational Preparation and Experience (1-10 cr)

This practical course assists students in pursuing careers in water resources. Students learn to complete employment applications, resumes and employment portfolios. Faculty assist students in making employer contacts, interviewing and follow-up. Students are required to evaluate their work experiences and submit comprehensive written and oral reports. (SCC)

WATER 129 – Occupational Preparation and Experience (1-10 cr)

This practical course assists students in pursuing careers in water resources. Students learn to complete employment applications, resumes and employment portfolios. Faculty assist students in making employer contacts, interviewing and follow-up. Students are required to evaluate their work experiences and submit comprehensive written and oral reports. (SCC)

WATER 131, 132, 133, 231, 232, 233 – Hydrologic Field Projects (1-3 cr ea)

This course provides practical experience that allows students to gain additional knowledge in a special topic of interest in water resource management. Guidance from the water resource instructors is provided to help students maximize their projects. (SCC)

WATER 205 – Surveying (5 cr)

This course introduces principles of operation of levels, transits, theodolites and electronic measuring devices. Computational techniques are emphasized. Prerequisite: NATRS 122. (SCC)

WATER 207 – Weather and Climate (5 cr)

This course introduces the descriptive treatment of meteorological and climatological phenomena including winds, weather fronts, air masses, clouds, temperature and precipitation. Basic computations, weather map analysis, forecasting and instrumentation techniques are emphasized. (SCC)

WATER 208 – Water Data and Records Analysis (5 cr)

Students learn basic computation and tabulation techniques, diagrammatic presentation and interpretation of hydrologic data. Analyzing water level recorder charts and state-discharge relationships are emphasized. Students learn basic computer processing of records. (SCC)

WATER 209 – Water Quality (5 cr)

This course introduces geologic and drainage basin characteristics. Students learn how man's influence through management activities impact water quality, timing and quantity of flow. Students study ecologic characteristics from a limnological viewpoint combining aspects of water quality and biology. Water quality field sampling and laboratory procedures are practiced. (SCC)

WATER 210 – Hydrologic Measurement (5 cr)

This course offers practical experience in the fundamentals of streamflow measurement with emphasis on discharge and stage monitoring. The use, care and maintenance of various instruments and equipment are stressed. (SCC)

WATER 212 – Water Rights and Laws (5 cr)

Students to gain a basic understanding of the water rights doctrines and learn practical applications in water management. Water quality regulations that govern the use of water in the western states is emphasized such as the Clean Water Act, Washington State Forest Protection Act and Spokane County regulations. (SCC)

WATER 213 – Advanced Water Quality (5 cr)

This course emphasizes basic techniques of field water quality monitoring and sampling. Laboratory analyses of field samples are conducted with a follow-up of data interpretation and recommendations. (SCC)

WATER 214 – Advanced Hydrologic Records (5 cr)

Students gain practical experience and develop skills in streamflow measurements, records management and surveying. Instrument and equipment maintenance are emphasized. Various standard computational techniques such as data processing and spread sheets are introduced. (SCC)

WATER 216 – Watershed Restoration (5 cr)

Students are given the opportunity to analyze stream corridor processes and characteristics and then apply this knowledge in a final restoration project. (SCC)

WATER 218 – Hazardous Materials (3 cr)

Students study hazardous materials regulations, terminology, identification systems, shipping and storage containers, incident command systems and basic analysis, information resources, chemical protective clothing, and decontamination. This course meets the requirements for the 40-hour certificate. (SCC)

WATER 219 – Hazardous Materials Educational Refresher (1 cr)

This is an annual refresher course that meets the requirements for the EPA hazardous materials certification. Prerequisite: WATER 218 or possess a hazardous materials 40-hour certificate. (SCC)

WATER 228 – Occupational Preparation and Experience (1-10 cr)

This practical course assists students in pursuing careers in water resources. Students learn to complete employment applications, resumes and employment portfolios. Faculty assist students in making employer contacts, interviewing and follow-up. Students are required to evaluate their work experiences and submit comprehensive written and oral reports. (SCC)

WATER 229 – Occupational Preparation and Experience (1-10 cr)

This practical course assists students in pursuing careers in water resources. Students learn to complete employment applications, resumes and employment portfolios. Faculty assist students in making employer contacts, interviewing and follow-up. Students are required to evaluate their work experiences and submit comprehensive written and oral reports. (SCC)

WATER 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

WATER 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

WATER 288 – Cooperative Education Work Experience (No Seminar) (1-18 cr)

For course description, see Cooperative Education. (SCC)

WELDING AND FABRICATION

WELD 113 – Welding Math (2 cr)

This course introduces theory and practical application utilizing formulas to solve problems encountered in the fabrication industry. Prerequisite: Concurrent enrollment in WELD 114, 115, 116, 117 or permission of instructor. (SCC)

WELD 114 – Introduction to Blueprint Reading (3 cr)

This course introduces students to blueprint reading. Structural shapes, conventional and auxiliary views, sections, and welding joints are emphasized. Prerequisite: Concurrent enrollment in WELD 113, 115, 116, 117 or permission of instructor. (SCC)

WELD 115 – Introduction to Fabrication (2 cr)

This course introduces tools, equipment and materials used in the layout and fabrication of a variety of welding projects with emphasis on their functions and proper use. Welding shop safety procedures are stressed. Prerequisite: Concurrent enrollment in WELD 113, 114, 116, 117 or permission of instructor. (SCC)

WELD 116 – Shielded Metal Arc Welding Theory (2 cr)

This course introduces shielded metal arc welding theory. Welding safety and positions, equipment setup, striking an arc, and cutting operations are emphasized. Prerequisite: Concurrent enrollment in WELD 113, 114, 115, 117 or permission of instructor. (SCC)

WELD 117 – Shielded Metal Arc Welding Applications (1-7 cr)

This course offers practical lab experience utilizing the concepts introduced in WELD 116. The selection and application of welding electrodes to specific weld joints are emphasized. Prerequisite: Concurrent enrollment in WELD 113, 114, 115, 116 or permission of instructor. (SCC)

WELD 123 – Intermediate Blueprint Reading (2 cr)

This course continues the concepts introduced in WELD 114. The interpretation of blueprints and corresponding welding symbols are emphasized. Prerequisite: Concurrent enrollment in WELD 124, 125, 126 or permission of instructor. (SCC)

WELD 124 – Advanced Shielded Metal Arc Welding Theory (2 cr)

This course continues the concepts introduced in WELD 116. Welding metallurgy, electrode classifications, and the uses of carbon and alloy steels are introduced. Prerequisite: Concurrent enrollment in WELD 123, 125, 126 or permission of instructor. (SCC)

WELD 125 – Advanced Shielded Metal Arc Welding Applications (6 cr)

This course provides advanced lab experience of the theory introduced in WELD 124. Welding practices used when working with carbon and alloy steels are emphasized. Prerequisite: Concurrent enrollment in WELD 123, 124, 126 or permission of instructor. (SCC)

WELD 126 – Intermediate Fabrication (5 cr)

This course offers practical lab experience using the skills acquired in the first quarter theory and lab courses. Layout and fabrication of a variety of welding projects are emphasized. Prerequisite: Concurrent enrollment in WELD 123, 124, 125 or permission of instructor. (SCC)

WELD 133 – Advanced Blueprint Reading (2 cr)

This course continues the concepts introduced in WELD 114 and 123 with emphasis on the interpretation of complex working drawings applying design, layout and sequence of fabrication factors. Prerequisite: Concurrent enrollment in WELD 134, 135, 136 or permission of instructor. (SCC)

WELD 134 – Specialty Welding Theory (4 cr)

This course introduces metallurgy and other welding processes such as gas tungsten arc welding, gas metal arc welding and flux core arc welding. Prerequisite: Concurrent enrollment in WELD 133, 135, 136 or permission of instructor. (SCC)

WELD 135 – Specialty Welding Applications (8 cr)

This course offers practical applications in equipment setup and operational procedures used in a variety of welding processes. Safety considerations and X-ray quality welding are emphasized. Prerequisite: Concurrent enrollment in WELD 133, 134, 136 or permission of instructor. (SCC)

WELD 136 – Advanced Fabrication (2 cr)

This course offers practical applications in the layout and fabrication of metal projects utilizing the appropriate welding processes and fabrication equipment. Prerequisite: Concurrent enrollment in WELD 133, 134, 135 or permission of instructor. (SCC)

WELD 165 – Oxy-Acetylene Welding (1 cr)

Students are trained in the selection and use of oxy-acetylene welding and cutting equipment and supplies to perform basic maintenance, repair and construction jobs encountered in various mechanical fields. Prerequisite: Permission of instructor. (SCC)

WELD 168 – Arc Welding (1 cr)

Students are trained in the selection and use of arc welding equipment and supplies to perform basic maintenance, repair and construction jobs encountered in various mechanical fields. Prerequisite: Permission of instructor. (SCC)

WELD 266 – Cooperative Education Seminar (1-2 cr)

For course description, see Cooperative Education. (SCC)

WELD 267 – Cooperative Education Work Experience (1-18 cr)

For course description, see Cooperative Education. (SCC)

WOMENS STUDIES

WS 201 – Women of Our World (5 cr)

This course embarks on a global journey that seeks awareness of how women from around the world live and work. Students explore the differences and similarities in the social expectations of American women and women from around the world. Topics include but are not limited to the work of women in other cultures, reproductive rights and realities of women in other cultures, motherhood and homemaking in other cultures, and equality between women and men in other cultures. (SCC)

ZOOLOGY

ZOOL 121 – Invertebrate Zoology (5 cr)

Basic structure of animals, comprehensive survey of invertebrate phyla, anatomy and ecological relationships. Meets A.A. degree lab science requirement. Prerequisite: BIOL& 160. (SCC, SFCC)

ZOOL 122 – Vertebrate Zoology (5 cr)

Anatomy, physiology, evolution and ecology of fish, amphibians, reptiles, birds and mammals. Meets A.A. degree lab science requirement. Prerequisite: BIOL& 160. (SCC, SFCC)