**VOCATIONAL (VOC)**

**VOC ADJ01 The Administrative Justice System**
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lecture: 54

History and philosophy of the justice system, subsystems, roles, relationships and theories of crime causation and correction.
Course Schedule

**VOC ADJ02 Principles and Procedures of the Justice System**
0 Units
(May be taken three times for credit)
(May be taken for Pass/No Pass only)
Lecture: 54

Due process in criminal proceedings from pre-arrest through trial and appeal using statutory law and legal precedent.
Course Schedule

**VOC AGG01 Food Production, Land use & Politics-a Global Perspective**
0 Units
(May be taken two times for credit)
Lecture: 54

Surveys the world’s food producing systems in terms of economic, political and cultural forces. Emphasizes ethical, sustainable food producing agriculture.
Course Schedule

**VOC AGL12 Exotic Animal Management**
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lecture: 54

Care and management of exotic and alternative livestock species with emphasis on identification, health maintenance, handling techniques, nutrition and reproduction. Includes analysis of industry trends and principal marketing uses of exotic animals.
Course Schedule

**VOC AGL14 Swine Production**
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lecture: 36 Lab: 54

Swine enterprises and the ways and means of entering them. Swine management, including handling, feeding, breeding, farrowing, butchering, and marketing. Practical skills are taught using the college farm.
Course Schedule

**VOC AGL16 Horse Production and Management**
0 Units
(May be taken two times for credit)
Lecture: 54 Lab: 54

Selection, utilization, and management of the light horse. Emphasis is on evaluation, health care, and handling skills.
Course Schedule

**VOC AGL17 Sheep Production**
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Survey of the sheep and goat industries; management of commercial, purebred and small farm flocks; selection, feeding, breeding, and basic care of small ruminants plus marketing of sheep, goats and their products. Laboratory and field trips required.
Course Schedule

**VOC AGL18 Horse Ranch Management**
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lecture: 54 Lab: 54

Skills and procedures used in the management of an equine business. Includes business plans and record keeping, staff and financial management, horse care and training, and farm design for a variety of horse operations.
Course Schedule

**VOC AGL19 Horse Hoof Care**
0 Units
(May be taken two times for credit)
Lecture: 18 Lab: 54

Proper horse hoof care; shoeing, trimming and disease recognition and control.
Course Schedule

**VOC AGL20 Horse Behavior and Training**
0 Units
(May be taken three times for credit)
(May be taken for Pass/No Pass only)
Lecture: 18 Lab: 54

Breaking and starting young horses. Concentrates on halter training of foals, ground work on yearlings, and green-breaking two-year-olds and up. Includes lunging techniques, driving, and breaking to a saddle. Training in collection, turning, backing, leads and trailer loading.
Course Schedule

**VOC AGL30 Beef Production**
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Purebred and commercial beef cattle production; emphasis on the importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing, and recordkeeping to ensure scientifically based management decisions and consumer product acceptance as applied to beef cattle. Laboratory required. Field trips required.
Course Schedule
VOC AGL34  Livestock Judging and Selection  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 54  
Study of form and appearance of farm animals as related to their function. Includes judging of breeding and terminal livestock as well as carcass evaluation. May require field trip.  
Course Schedule

VOC AGL96  Animal Sanitation and Disease Control  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Prevention and control of infectious diseases affecting domestic animals including basic disease concepts, transmission of infectious diseases, principles of sanitation, and fundamentals of immunology.  
Course Schedule

VOC AGL97  Artificial Insemination of Livestock  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 54  
Theory and application of artificial insemination of domestic animals, including semen evaluation and processing, heat synchronization, and pregnancy diagnosis.  
Course Schedule

VOC AGN01  Animal Science  
0 Units  
(May be taken three times for credit)  
(May be taken for Pass/No Pass only)  
Lecture: 54  
Fundamental problems and essential concepts of animal production. Types of domestic animals and their utilization by humans.  
Course Schedule

VOC AGN02  Animal Nutrition  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Composition of feeds and their utilization by domestic animals, including digestive physiology, animal assessment, feed appraisal and compiling of rations.  
Course Schedule

VOC AGN51  Animal Handling & Restraint  
0 Units  
(May be taken four times for credit)  
Lecture: 36  Lab: 54  
Methods of proper handling large and small animals, including chemical and physical techniques of restraint. Field trips Required.  
Course Schedule

VOC AGN94  Animal Breeding  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
The science of animal breeding, including fundamentals of inheritance, reproduction and breeding systems for domestic animals. Artificial insemination, embryo manipulation, and current topics in reproductive biotechnology will also be included.  
Course Schedule

VOC AGP70  Pet Shop Management  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Pet shop operations and the economic aspects of the pet industry. Organization and operation of pet shops, animal care practices, and sound business management practices.  
Course Schedule

VOC AGP71  Canine Management  
0 Units  
(May be taken two times for credit)  
Lecture: 36  Lab: 54  
Selection, feeding, housing, breeding and management of dogs, including commercial aspects of the dog as a domestic pet. Laboratory work will include practical experience in the handling and training of dogs. May include field trips.  
Course Schedule

VOC AGP72  Feline Management  
0 Units  
(May be taken three times for credit)  
Lecture: 54  
Care and management of cats including breed identification and characteristics, grooming, showing, nutrition, practical care, behavior, breeding, and housing.  
Course Schedule

VOC AGP73  Tropical and Coldwater Fish Management  
0 Units  
(May be taken three times for credit)  
Lecture: 36  
Care and keeping of marine and freshwater aquarium fishes, plants, and invertebrates. Guidance on setting up aquariums, choosing compatible species, feeding, health care, breeding, and raising fish.  
Course Schedule

VOC AGP74  Reptile Management  
0 Units  
(May be taken two times for credit)  
Lecture: 36  
Care and maintenance of reptiles and amphibians, including snakes, lizards, turtles, tortoises, newts, salamanders, and frogs. Identification and characteristics of reptiles commonly kept as pets. Housing, feeding, health maintenance, breeding, and raising of reptiles.  
Course Schedule
VOC AGP76 Aviculture - Cage and Aviary Birds
0 Units
(May be taken two times for credit)
Lecture: 54

Cage and aviary birds marketed in the wholesale and retail pet trade. Identification, nutrition, breeding, disease prevention and control, aviary construction. Psittacines, soft bills, finches, game birds, poultry, and ornamental waterfowl.
Course Schedule

VOC AGR-G Home Gardening
0 Units
(May be taken three times for credit)
Lecture: 54

Organic and traditional gardening, plants, and fruit orchards. Includes design, propagation methods, pruning, fertilizing, and pest control.
Course Schedule

VOC AGR01 Horticultural Science
0 Units
(May be taken two times for credit)
Lecture: 54

Course Schedule

VOC AGR02 Plant Propagation/Greenhouse Management
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 38

Plant Propagation and production practices with emphasis on florists' plant, woody ornamentals, and fruits. Commercial techniques include seed propagation, cuttings, grafting and budding, layering, fern sporing, and division. Stresses greenhouses and other environmental structures for plant propagation and production.
Course Schedule

VOC AGR04 Park Management
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lecture: 54

Management and operation of municipal park departments. Includes the development of budgets, purchasing, park policies, planning and scheduling.
Course Schedule

VOC AGR05 Park Facilities
0 Units
(May be taken two times for credit)
Lecture: 54

Management and operation of different types of park facilities. Includes the management of sports fields, recreation centers, campgrounds, aquatic facilities, and golf courses.
Course Schedule

VOC AGR13 Landscape Design
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Landscape design for residential and small commercial sites including the design process, drafting, graphics, site evaluation, landscaping materials, and plant usage. Field trips and off-campus assignments are required.
Course Schedule

VOC AGR15 Interior Landscaping
0 Units
(May be taken two times for credit)
Lecture: 54

Design, installation, and maintenance practices used in interior landscaping. Includes identification, culture, and care of plants suitable for interior use.
Course Schedule

VOC AGR24 Integrated Pest Management
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Common agricultural pests in Southern California and physical, biological, and chemical pest control principles and practices, including integrated pest management (IPM). Stresses use, safety, equipment, laws, and regulations of pesticides. Field trips are required.
Course Schedule

VOC AGR25 Floral Design 1
0 Units
(May be taken two times for credit)
Lecture: 24 Lab: 44

Principles of floral design: form, style, and composition. Includes designing of floral arrangements, wreaths, sprays, baskets, bouquets, wedding flowers, and corsages.
Course Schedule

VOC AGR26 Floral Design 2
0 Units
(May be taken two times for credit)
Lecture: 24 Lab: 44

Contemporary floral design theory emphasizing creativity, self-expression, and professional design situations.
Course Schedule

VOC AGR27 Floral Design 3
0 Units
(May be taken two times for credit)
Lecture: 24 Lab: 44

Advanced principles of floral design and florist operations management. Includes designs and operations related to holidays, parties, weddings, and sympathy.
Course Schedule
VOC AGR29  Ornamental Plants - Herbaceous
0 Units
(May be taken three times for credit)
Lecture: 36  Lab: 54

Identification, growth habits, culture and ornamental use of landscape
annuals, biennials, perennials, ferns, indoor plants, groundcovers and
vines adapted to climates of California. Plants emphasized will come
from the California Association of Nurseries and Garden Centers (CANGC)
and California Landscape Contractors Association (CLCA) certification
test plant lists.
Course Schedule

VOC AGR30  Ornamental Plants - Trees and Woody Shrubs
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Identification, growth habits, culture and ornamental use of landscape
trees and shrubs adapted to climates of California. Plants emphasized
will come from the California Association of Nurseries and Garden
Centers (CANGC) and California Landscape contractors Association
(CLCA) certification test plant lists. Off campus meetings required.
Course Schedule

VOC AGR32  Landscaping and Nursery Management
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Operation and management of wholesale and retail nurseries. Includes
site location and layout of areas; greenhouse management; soil mixes
and proper use of fertilizers, insecticides, fungicides, herbicides and
growth regulators; irrigation; mechanization; financing; personnel
management; retail displays, advertising and customer relationships;
federal, state and local laws and regulations. Field trips are required.
Course Schedule

VOC AGR39  Turf Grass Production and Management
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Introduction to cultivation, maintenance, and management of turfgrasses
utilized for athletic fields, golf courses, parks, cemeteries, and
commercial and residential lawns. Identification, installation, cultural
requirements, and maintenance practices are emphasized. Field trips
required.
Course Schedule

VOC AGR40  Sports Turf Management
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Prepares students to work in the sports turf industry. Emphasizes turf
cultural techniques used in sports turf management. Includes turf
surfaces used in baseball, football, soccer, tennis, golf courses, driving
ranges, and other sports fields in both professional and amateur sports.
Field trips required.
Course Schedule

VOC AGR50  Soil Science and Management
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Principles of soil management, including management of air, water,
nutrients, organic matter. Study of soil including physical, chemical,
and biological properties, classification, derivation, use, function, and
management including erosion, moisture, retention, structure, cultivation,
organic matter, and microbiology as they pertain to optimized plant,
growth. Laboratory topics include soil type, classification, soil reaction,
soil fertility, and physical properties of soil. Laboratory required. Field
trips are required.
Course Schedule

VOC AGR51  Tractor and Landscape Equipment Operations
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Selection, operation, repair and maintenance of power equipment used in
the agriculture and landscape industry. Include two- and four-wheel drive
tractors, skip loader, skid steer loader, backhoes, lawnmowers, edgers,
weed eaters, blower vacuums, rototillers, chainsaws, spraying equipment
and all-terrain vehicles. Laboratory includes use of this equipment.
Course Schedule

VOC AGR52  Hydraulics
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54

Operation, maintenance, and repair of hydraulic systems used on
agriculture and industrial equipment.
Course Schedule

VOC AGR53  Small Engine Repair 1
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Principles and repair of small engines used in landscape, industrial and
agricultural applications. Includes repair of lawnmowers, chainsaws, 2-
cycle engines, 4-cycle engines, spraying equipment, all-terrain vehicles,
and other related gas-powered equipment.
Course Schedule

VOC AGR55  Diesel Engine Repair
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Repair and maintenance of diesel engines used to power industrial,
landscape and agricultural equipment. Includes hands-on experience
maintaining, servicing, and repairing diesel engines.
Course Schedule
VOC AGR56 Engine Diagnostics
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Analysis and evaluation of tractor engine power failures with hands-on experience in the proper diagnostic procedures of power equipment. Includes service, maintenance and repair of tractor electrical systems: electrical wiring, voltage regulators, generators, alternators, switches, gauges, batteries, and test equipment. Field trips are required.
Course Schedule

VOC AGR57 Power Train Repair
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Service, maintenance, and repair of power trains. Includes hands-on experience with clutches, transmissions, differentials, power take-off units, and final drives used to transmit power on tractors and other outdoor power equipment. Field trips are required.
Course Schedule

VOC AGR62 Irrigation Principles and Design
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Principles of irrigation, design techniques, sprinkler system components, and hydraulic principles used in nursery management, interior design, residential, and commercial landscapes. Special emphasis is given to water conservation. Field trips are required.
Course Schedule

VOC AGR63 Irrigation Systems Management
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Systematic approach to water conservation in landscapes. Soil-plant-water relationships, evapotranspiration, irrigation schedules, salinity and drainage, and irrigation efficiency. Water measurement, soil moisture measurement, irrigation systems, and practical constraints affecting scheduling. California water supply issues. Irrigation efficiency testing will be incorporated to demonstrate proper methods of water audits and system evaluation. Field trips are required.
Course Schedule

VOC AGR64 Irrigation - Drip and Low Volume
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Conservation of water in landscapes by utilization of drip and low-flow irrigation practices. Design, installation techniques, operation, and maintenance of drip and low-flow irrigation systems, including determination of irrigation requirements, selection of emitters and low-flow devices, and uniformity of water distribution. Includes hands-on experience in design and installation techniques. Field trips are required.
Course Schedule

VOC AGR71 Construction Fundamentals
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Construction techniques and tools used in landscaping with construction projects that include surveying techniques, utilities (gas, water, and electricity), woodworking, and masonry.
Course Schedule

VOC AGR72 Landscape Hardscape Applications
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Landscape construction pertaining to hardscape featured in the landscape. Estimation and installation of fences, walks, planters, patios, lighting, barbecues, gazebos, decks, ponds, spas, fountains, and pools. Students will gain hands-on experience in the laboratory activities.
Course Schedule

VOC AGR73 Landscaping Laws, Contracting, and Estimating
0 Units
(May be taken two times for credit)
Lecture: 54-54

Landscape laws, contracting and estimating as they pertain to landscape construction. Information covered will be helpful for the Landscape Contractor’s (C-27 classification) licensing exam administered by the State of California. Off campus assignments required.
Course Schedule

VOC AGR75 Urban Arboriculture
0 Units
(May be taken two times for credit)
Lecture: 36 Lab: 54

Care and management of ornamental trees. Includes pruning techniques, fruit tree care, bracing, cabling, and pest control. Safe practices in the use of equipment including the use of ropes, chippers, boom trucks, chain saws, and identification and evaluation of common trees. Prepares students for the tree worker and arborist certification (ISA) exams.
Course Schedule

VOC ANA50 Basic Anatomy/Physiology
0 Units
(May be taken four times for credit)
Lecture: 54

Introduction to human anatomy and physiology by systems, with brief descriptions of biochemistry, cell biology and molecular biology. Upon completion, students will understand normal functions and be able to recognize pathologies.
Course Schedule
VOC AR101 Design I - Elements of Design  
0 Units  
(May be taken two times for credit)  
Lecture: 54  Lab: 54  
Design and design process including conceptualization, visualization, form making, presentation, expression, and site analysis of physical, contextual, and cultural aspects of design and the urban environment. Portfolio will be produced. Field trips are required.  
Course Schedule

VOC AR102 Design II - Architectural Design  
0 Units  
(May be taken two times for credit)  
Lecture: 54  Lab: 54  
Second level architectural design studio with a focus on site analysis, design conceptualization, form making, program development, and presentation. Emphasis is on critical thinking and problem solving integrated with the artistic design process. Investigations will stress symbolic expression, aesthetics, craftsmanship, technical skills, vocabulary, and physical object making through the design of multi-family residential, institutional, and cultural buildings. Field trips are required.  
Course Schedule

VOC AR121 CADD and Digital Design Media - Level I  
0 Units  
(May be taken two times for credit)  
Lecture: 54  Lab: 54  
CADD (Computer Aided Design and Drafting) Level 1 and computer application in architecture, engineering and related fields, including spreadsheet, CAD, and presentation application. Field trips required.  
Course Schedule

VOC AR122 Architectural Presentations  
0 Units  
(May be taken two times for credit)  
Lecture: 54  Lab: 54  
Analysis and preparation of architectural presentation projects, including schematic and final design, architectural models, oral presentation techniques, board layouts using hand-drawn and computer-aided techniques, and development of project portfolio. Field trips required.  
Course Schedule

VOC AR141 Design Drawing and Communication  
0 Units  
(May be taken two times for credit)  
Lecture: 54  Lab: 54  
Architectural drawing techniques including graphic standards, scales, orthographic, paraline, and perspective projections. Field trips required.  
Course Schedule

VOC AR147 Architectural CAD and BIM  
0 Units  
(May be taken two times for credit)  
Lecture: 36  Lab: 71  
3-D Computer Aided Design and Drafting (CAD) and Building Information Modeling (BIM) for architectural design and design development. Portfolio of 3-D building models and extracted 2-D drawings will be produced. Field trips required.  
Course Schedule

VOC AR222 Advanced Digital Design, Illustration and Animation  
0 Units  
(May be taken two times for credit)  
Lecture: 36  Lab: 71  
Architectural Computer Aided Design (CAD), 3-Dimensional (3-D) illustration, rendering and animation. Virtual walk-through and fly-through videos of interior and exterior 3-D models with photo-realistic materials and lighting will be produced.  
Course Schedule

VOC AR247 Architectural CAD Working Drawings  
0 Units  
(May be taken two times for credit)  
Lecture: 36  Lab: 71  
Architectural Computer Aided Design (CAD) for design development and working drawings. Portfolio of working drawings using Building Information Modeling (BIM) and CAD applications of integrated 3-D and 2-D BIM/CAD models will be produced. Field trips required.  
Course Schedule

VOC BA07 Principles of Accounting - Financial  
0 Units  
(May be taken two times for credit)  
(May be taken for Pass/No Pass only)  
Lecture: 90  
Financial accounting required of Business Administration and Accounting majors. Defines financial accounting and its relevance to business decision-makers, accounting concepts and techniques, analysis and recording of financial transactions, and preparation, analysis and interpretation of financial statements focusing on application of generally accepted accounting practices. Includes asset, liability, and equity valuation, revenue and expense recognition, cash flow, internal controls, ethics, and financial statement analysis. General Ledger Accounting Software program is integrated throughout and used to complete various homework assignments.  
Course Schedule

VOC BA11 Fundamentals of Accounting  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Accounting vocabulary and theory, equations to solve word problems, simple and compound interest, present value, consumer and business credit, mortgages, financial statements and ratios, inventory, depreciation, business taxes, and investments.  
Course Schedule
VOC BA68  Business Mathematics
0 Units
(May be taken two times for credit)
Lecture: 54
Addition, subtraction, multiplication, division, decimals, percentages, fractions, signed numbers, equations, and problem solving.
Course Schedule

VOC BA70  Payroll and Tax Accounting
0 Units
(May be taken two times for credit)
Lecture: 54
On-the-job payroll accounting. Surveys the various tax procedures required by the employer and employee in filing the correct forms for Social Security, federal, and state income taxes and their reconciliation. Laws related to Worker's Compensation, State Disability Benefit Laws, and Fair Employment Practices are discussed.
Course Schedule

VOC BA71  Personal Financial Planning
0 Units
(May be taken two times for credit)
Lecture: 54
Integrative approach to personal finance focusing on practical financial decision making as well as the social, psychological, and physiological contexts in which those decisions are made. Students will examine their relationships with money, set personal goals, and develop a plan to meet those goals. Topics include consumerism, debt, healthcare, investing, retirement, long-term care, disability, death, and taxes.
Course Schedule

VOC BA72  Bookkeeping - Accounting
0 Units
(May be taken two times for credit)
Lecture: 90
Bookkeeping and accounting principles including the accounting cycle for service and merchandising companies, cash management, payroll, and special journals. Computerized simulations and completion of an accounting project for a company.
Course Schedule

VOC BA75  Using Microcomputers in Financial Accounting
0 Units
(May be taken two times for credit)
Lecture: 18
Accounting concepts utilizing QuickBooks, a general-ledger software program. Hands-on use of a microcomputer to process accounting transactions, prepare statements and reports, and complete accounting cycle tasks. Completion of a computerized accounting practice set will be required.
Course Schedule

VOC BA76  Microcomputers in Managerial Accounting
0 Units
(May be taken two times for credit)
Lecture: 18
Analysis of financial data and preparation of managerial accounting reports using Excel software. Development of what-if formulas to be used as an aid in decision-making. Includes manufacturing and consolidation worksheets, financial statement analysis, and statements of cash flow.
Course Schedule

VOC BCDP  Basic Computing - Desktop Publishing
0 Units
(May be taken three times for credit)
Lecture: 12-56
Basic desktop publishing to create and produce professional-looking publications.
Course Schedule

VOC BCPP1  PowerPoint Basics 1
0 Units
(May be taken three times for credit)
Lecture: 12-56
Basic use of PowerPoint to create slide presentations.
Course Schedule

VOC BCPP2  PowerPoint Basics 2
0 Units
(May be taken three times for credit)
Lecture: 12-56
Create PowerPoint presentations using text and object animation, video, audio, and hyperlinks.
Course Schedule

VOC BM10  Principles of Continuous Quality Improvement
0 Units
(May be taken two times for credit)
Lecture: 54
History and evolution of thought in Continuous Quality Improvement (CQI), including the theories and methods of Deming, Juran, and Crosby. Practical application of quality management process and tools are presented for the continuous improvement of organizational quality. Relevant case studies are included.
Course Schedule

VOC BM20  Principles of Business
0 Units
(May be taken two times for credit)
Lecture: 54
Business and its functions, background, development, organization, and opportunities. Business terms, current trends, methods, contemporary and future problems, and current business practices are covered.
Course Schedule
VOC BM51  Principles of International Business  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
International business environment with a global perspective. Introduces global viewpoints across the full spectrum of business functions, including, but not limited to: accounting, finance, human resources, management, operations, production, purchasing, and strategic planning. Course Schedule

VOC BM52  Principles of Exporting and Importing  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Practical information needed to participate in activities related to the exporting and importing of goods and services. Includes vocabulary, acronyms, trends, regulations, regional agreements, documentation, and challenges related to the exporting and importing of goods and services. Course Schedule

VOC BM60  Human Relations in Business  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Inter-disciplinary study of how people work and relate at the individual, group, and organizational level. Topics include motivation, team work, leadership skill, and how to handle organizational change. Course Schedule

VOC BM61  Business Organization and Management  
0 Units  
(May be taken two times for credit)  
(May be taken for Pass/No Pass only)  
Lecture: 54  
Functions of management, techniques of decision making and problem solving, and methods used by managers to achieve organizational goals. Theories of management, lines of authority, functions of departments, and the importance of policies, procedures and controls. Course Schedule

VOC BM62  Human Resource Management  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Direction of people including guidance, control, supervisory problems, training, job analysis, interviewing, testing, rating, and other functions involving human resources. Designed to improve the overall understanding of the relationship between the individual and the business organization. Course Schedule

VOC BM66  Small Business Management  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Organizing, starting, and operating a small business enterprise. Emphasis on entrepreneurial applications in a small business environment. Course Schedule

VOC BM85  Special Issues in Business  
0 Units  
(May be taken four times for credit)  
Lecture: 36  
Provide business majors with a forum to gain knowledge, develop techniques, problem solve and implement an actual business plan. Special emphasis will be placed on the particular project of the actual business used as the class project. Course Schedule

VOC BO05  Business English  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Skills and techniques of English, as applied to business situations, with emphasis on effective document structure. Course Schedule

VOC BO25  Business Communication  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Written communications, including letters and memos, for a variety of situations in the business environment. Includes writing of good news, bad news, sales, claims, and persuasive correspondence; letters and resumes appropriate to job seeking and application; and practicing oral skills as applied to job interviews and business reports. Course Schedule

VOC BO26  Oral Communications for Business  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Oral communication used in business situations such as training sessions, presentations, professional discussion, and telephone interactions. Course Schedule

VOC BR52  Real Estate Practice  
0 Units  
(May be taken four times for credit)  
Lecture: 54  
Office procedures and practices in listings, advertising, prospecting, financing, exchanges, property management, salesmanship, land utilization and public relations. A course in real estate practice must be completed within 18 months of licensure. Course Schedule

VOC BS35  Professional Selling  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Principles of selling and the role of a salesperson in the marketing process. Includes characteristics and skills necessary for a successful salesperson, techniques for prospecting and/or qualifying buyers, buyer behavior, and critical steps in the selling process. Students develop and offer a sales presentation for a selected product, service or concept. Course Schedule
VOC BS36  Principles of Marketing
0 Units
(May be taken two times for credit)
Lecture: 54

Organization and function of system of distributing goods and services from the point of production to the consumer. Preparation of a marketing plan using product, distribution, promotional, and pricing strategies.
Course Schedule

VOC BS60  Retail Store Management and Merchandising
0 Units
(May be taken two times for credit)
Lecture: 54

Principles and practices used in the management and merchandising of retail stores. Includes critical buying function, merchandising, promotional techniques, sit selection, layout, staffing, market positioning, and customer service.
Course Schedule

VOC BS70  International Marketing Concepts
0 Units
(May be taken four times for credit)
Lecture: 54

Factors unique to foreign economics, cultural environments, political/legal problems, marketing intelligence procedures, international product policy, distribution and market channels, promotion and pricing decisions.
Course Schedule

VOC BS85  Special Issues in Marketing
0 Units
(May be taken four times for credit)
Lecture: 36

Provides marketing majors with a forum to gain knowledge, develop techniques, problem-solve and implement an actual business marketing plan. Special emphasis will be placed on the particular project of the actual business used as the class project.
Course Schedule

VOC CNT50  PC Servicing
0 Units
(May be taken two times for credit)
Lecture: 54  Lab: 54

PC and peripheral servicing techniques, preventative maintenance, hardware configurations, software configurations, software diagnostics, and the use of test equipment.
Course Schedule

VOC CNT54  PC Troubleshooting
0 Units
(May be taken two times for credit)
Lecture: 54  Lab: 54

Personal computer (PC) servicing. Includes isolating, identifying, and repairing specific problems in the computer environment at the hardware level. Prepares students for the A+ Certification Exam.
Course Schedule

VOC CNT60  A+ Certification Preparation
0 Units
(May be taken two times for credit)
Lecture: 36

Prepares the student and qualified computer technician for the A+ Certification Examination. All aspects of the A+ Essentials and A+ Practical Application test modules will be stressed through both lecture review and test simulation software.
Course Schedule

VOC CNT62  Network+ Certification Preparation
0 Units
(May be taken two times for credit)
Lecture: 36

Prepares the student or A+ certified technician for the Network+ Certification Examination. Includes Open System Interconnection (OSI) model, Transmission Control Protocol/Internet Protocol (TCP/IP), and implementing, installing, maintaining, and supporting networks.
Course Schedule

VOC CPBC1  Basic Computing - Level 1
0 Units
(May be taken three times for credit)
Lecture: 54

Introduction to the personal computer, including terminology and basic computer operations in a Windows environment.
Course Schedule

VOC CPBC2  Basic Computing - Level 2
0 Units
(May be taken three times for credit)
Lecture: 18

Create documents in applications such as Microsoft Word; includes basic computer maintenance and problem-solving techniques.
Course Schedule

VOC CPBC3  Basic Computing - Level 3
0 Units
(May be taken three times for credit)
Lecture: 54

Software application skills including creative projects which introduce computer graphics.
Course Schedule
VOC CPBE1 Basic Excel - Level 1
0 Units
(May be taken three times for credit)
Lecture: 12-56
Introduction to Excel, including terminology, and working with data in a spreadsheet application.
Course Schedule

VOC CPBE2 Basic Excel 2
0 Units
(May be taken three times for credit)
Lecture: 12-56
Basic functions in Excel including formulas, sorting, filtering data, and formatting tables.
Course Schedule

VOC CPBE3 Basic Excel 3
0 Units
(May be taken three times for credit)
Lecture: 12-56
Basic Excel including storing, manipulating and analyzing data in spreadsheets, and displaying data graphically using charts.
Course Schedule

VOC CPCC Creative Computing
0 Units
(May be taken three times for credit)
Lecture: 54
Creative skills in utilizing graphic designs for projects such as business cards, letterhead, labels, flyers, posters, greeting cards, and computer-generated fabric designs.
Course Schedule

VOC CPCL Computer Laboratory
0 Units
Lab: 1-320
A laboratory study program designed to complement the lecture materials presented in computer program instructional courses.
Course Schedule

VOC CPDI Digital Photography for the Beginner
0 Units
(May be taken three times for credit)
Lecture: 54
Digital camera operations, image management, composition, and use of graphics software.
Course Schedule

VOC CPNET Internet Research - an Introduction
0 Units
(May be taken three times for credit)
Lecture: 18
Fundamental Internet functions including terminology, email, search engines and research tools.
Course Schedule

VOC CS11 Computer Keyboarding
0 Units
(May be taken four times for credit)
Lecture: 54
Formerly VOC CP01 Develops alpha and numeric keyboarding skills on a personal computer at a straight-copy rate of 25 to 40 gross words a minute, with a predetermined error limit. Includes keyboarding of letters, tables and manuscripts.
Course Schedule

VOC CS12 Intermediate Computer Keyboarding
0 Units
(May be taken four times for credit)
Lecture: 54
Develops computer keyboarding speed and accuracy with a proficiency standard upon completion of 35-55 gross words a minute with a predetermined error limit. Uses word processing software to format letters, memos, reports, tables and other related business documents. (Formerly VOC CP02)
Course Schedule

VOC CS41 Office Management Skills
0 Units
(May be taken three times for credit)
Lecture: 75
Training and skill building in filing systems and procedures, proofreading, telephone techniques, faxing, emailing, electronic calendaring of events, appointments, meetings, memos, and business letters.
Course Schedule

VOC CSB10 Office Skills
0 Units
(May be taken two times for credit)
Lecture: 54
Skills necessary to work in an office setting including: alpha and numeric keyboarding, email etiquette and standards, electronic calendaring, ten-key, composing, formatting and storing business documents, telephone techniques.
Course Schedule

VOC CSB11 Computer Information Systems
0 Units
(May be taken two times for credit)
Lecture: 54  Lab: 27
Overview of computer information systems including computer hardware, software, networking, programming, databases, Internet, security, systems analysis, ethics, and problem solving using business applications.
Course Schedule
VOC CSB15  Microcomputer Applications
0 Units
(May be taken two times for credit)
Lecture: 54  Lab: 27

Windows operating system (OS) and applications, simple business examples using up-to-date browser, word processing, spreadsheet, database management and presentation software, and integration of software applications.

Course Schedule

VOC CSB16  Macintosh Applications
0 Units
(May be taken two times for credit)
Lecture: 27  Lab: 27

Macintosh operating system and related tools; creating files using office applications; storing and sharing files using iCloud.

Course Schedule

VOC CSB31  Microsoft Word
0 Units
(May be taken two times for credit)
Lecture: 54

Word processing with Microsoft Word and its editing, formatting, and language tools to create, edit, and format business and publication documents. Includes creating flyers, newsletters, and other publication documents using advanced formatting techniques and tools.

Course Schedule

VOC CSB51  Microsoft PowerPoint
0 Units
(May be taken two times for credit)
Lecture: 54

Using PowerPoint to plan, design, and produce effective presentations. Includes creating charts, diagrams and storyboards; developing appropriate text content; adding sound, animation, and movies.

Course Schedule

VOC CSB61  Desktop Publishing Software
0 Units
(May be taken four times for credit)
Lecture: 54

Formerly VOC CP60 Using desktop publishing software to integrate text and various graphic objects, design, edit and produce a variety of high-quality business publications.

Course Schedule

VOC CSW15  Web Site Development
0 Units
(May be taken four times for credit)
Lecture: 54  Lab: 27

Use of professional visual Web-authoring application to plan, develop, implement publish and maintain Web sites.

Course Schedule

VOC EDT16  Basic CAD and Computer Applications
0 Units
(May be taken four times for credit)
Lecture: 54  Lab: 54

Basic CD (Computer Aided Design and Drafting) and computer application in engineering and related fields (including basic word processing, spreadsheet, CAD and presentation applications.

Course Schedule

VOC EDT18  Engineering CAD Applications
0 Units
(May be taken four times for credit)
Lecture: 54  Lab: 54

Intermediate CAD for engineering, explores the 2-D and 3-D environments, 3-D parametric solid modeling.

Course Schedule

VOC EL10  Introduction to Mechatronics
0 Units
(May be taken two times for credit)
Lecture: 18  Lab: 54

An introduction to the field of mechatronics, a combination of conventional electronic technology with mechanical and computer technology. Special emphasis is on robotics. Hands-on activities include the building of a robot.

Course Schedule

VOC EL11  Technical Applications in Microcomputers
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Personal computer (PC) applications used in electronics technology. Includes word processing, spreadsheets, database, computer presentation methods, and internet research specifically designed for electronics technology.

Course Schedule

VOC EL12  Computer Simulation and Troubleshooting
0 Units
(May be taken two times for credit)
Lecture: 18  Lab: 54

Use of the personal computer for simulation and troubleshooting of analog and digital circuits. National Instruments Multisim software will be used for circuit analysis, value substitution, and fault diagnostics.

Course Schedule

VOC EL50A  Electronic Circuits - Direct Current (DC)
0 Units
(May be taken two times for credit)
Lecture: 54  Lab: 54

Direct Current (DC) electrical circuits and their applications. Covers DC sources, analysis, test equipment, measurements, and troubleshooting of resistive devices and other basic components. Includes Ohm's Law, Kirchoff's law, and network theorems (Students seeking a survey course in electronics should take VOC EL10, Introduction to Mechatronics, rather than VOC EL50A or 50B.)

Course Schedule
**VOC EL50B  Electronic Circuits (AC)**  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Lab: 54  

Alternating Current (AC) electrical circuits and their applications. Covers AC sources, analysis (using complex numbers), test equipment, measurements, and troubleshooting of basic circuits with capacitors, inductors, and resistors. Includes impedance, resonance, filters, and decibels.  
Course Schedule

**VOC EL51  Semiconductor Devices & Circuits**  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Lab: 54  

Solid-state devices and circuits, including bipolar-junction and field-effect transistors, rectifier diodes, operational amplifiers, and thyristors. Analog circuits studied include discrete and integrated circuit amplifiers, voltage regulators, oscillators and timers. Emphasizes configurations, classes, load lines, characteristic curves, gain, troubleshooting, measurements, and frequency response.  
Course Schedule

**VOC EL53  Communications Systems**  
0 Units  
(May be taken four times for credit)  
Lecture: 54  
Lab: 54  

Analog and digital communications circuits. Emphasizes analog and digital modulation principles, fiber optics, multiplexing and telecommunications circuits.  
Course Schedule

**VOC EL54A  Industrial Electronics**  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Lab: 54  

Industrial electronic components and basic control circuits. Includes time delay controls, thyristor controls, relays, optoelectronic devices, DC and AC motor control, transducers, silicon controlled rectifier (SCR), and unijunction transistor (UJT) devices.  
Course Schedule

**VOC EL54B  Industrial Electronic Systems**  
0 Units  
(May be taken two times for credit)  
Lecture: 36  
Lab: 54  

Systems application of industrial electronics including industrial production and processes, automation, and programmable and motor controllers. Emphasis is on programmable logic controllers (PLCs).  
Course Schedule

**VOC EL55  Microwave Communications**  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Lab: 54  

Microwave components and circuits. Stresses transmission lines, Smith Charts, impedance matching, antenna characteristics, wave propagation, frequency analysis, and measurement techniques.  
Course Schedule

**VOC EL56  Digital Electronics**  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Lab: 54  

Combinational and sequential logic circuits emphasizing number systems, binary math, basic gates, Boolean algebra, Karnaugh maps, flip-flops, counters, and registers. Stresses design and troubleshooting techniques.  
Course Schedule

**VOC EL61  Electronic Assembly and Fabrication**  
0 Units  
(May be taken two times for credit)  
Lecture: 36  
Lab: 54  

Manufacturing and fabrication processes associated with the electronics industry. Printed circuit board (PCB) design from conception to completion. Emphasizes electrical schematics, bill of material (BOM), component selection, layout design, manufacturability, assembly, soldering, de-soldering, and surface-mount technology.  
Course Schedule

**VOC EL62  Advanced Surface Mount Assembly and Rework**  
0 Units  
(May be taken two times for credit)  
Lecture: 18  
Lab: 54  

Advanced course in assembly and repair (soldering) on surface mount assemblies (SMT). Prepares for the Institute for Printed Circuits (IPC) surface mount assembly and rework certifications.  
Course Schedule

**VOC EL74  Microcontroller Systems**  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Lab: 54  

Microcontroller systems and programming methods; programmable logic devices (PLDs); serial communications; conversion of signals from analog to digital formats and the converse. Industry applications, interfacing and troubleshooting.  
Course Schedule

**VOC EL76  FCC GROL Preparation**  
0 Units  
(May be taken four times for credit)  
Lecture: 54  

Prepares qualified electronics and aviation technicians for the FCC commercial general radiotelephone operator license (GROL).  
Course Schedule
VOC EL81 Lab Studies in Electronics
0 Units
(May be taken four times for credit)
Lab: 54

Extended laboratory experience supplementary to those available in the regular program. Allows the student to pursue more advanced and complex laboratory projects and experiments.
Course Schedule

VOC EMT90 Emergency Medical Technician
0 Units
(May be taken three times for credit)
Lecture: 100-160  Lab: 45-60

Approved by the Los Angeles (LA) County Emergency Medical Services (EMS) Agency. Develops the ability to recognize the signs and symptoms of various illnesses and injuries. Teaches proper procedures of pre-hospital emergency care per local and national standards. Awards an Emergency Medical Technician (EMT) Course Completion Certificate needed to take National Registry Certifying Exam. Necessary for many jobs in emergency care and is a prerequisite for entry into a paramedic program and most fire department jobs.
Course Schedule

VOC ESD02 Production of Boutique Crafts for Retail Sales
0 Units
(May be taken three times for credit)
Lab: 54

Design and production of boutique crafts. Includes marketing, pricing, cost analysis, and use of emerging technology.
Course Schedule

VOC ESD03 Lettering Styles and Advertising Calligraphy
0 Units
(May be taken three times for credit)
Lab: 54

Styles of calligraphy as they are used in art, media, and advertising. Includes size, placement, styles, and emerging technology.
Course Schedule

VOC ESD07 Handcrafted Needlework for Retail Sales
0 Units
(May be taken three times for credit)
Lab: 54

Needlework technique including knitting, crocheting, embroidery, needlepoint for plastic canvas, and emerging technology to construct finished products for sale.
Course Schedule

VOC ESD08 Jewelry Production and Design for Retail Sales
0 Units
(May be taken three times for credit)
Lab: 54

Design and construct wire-worked jewelry using beads and stones with various methods of wire wrapping, coiling, hammering, and emerging technology.
Course Schedule

VOC ESD09 Sewing and Design
0 Units
(May be taken three times for credit)
Lab: 54

Basic sewing techniques for basic tailoring, pattern reading, cutting, and style design to construct professional looking garments.
Course Schedule

VOC ESD10 Beginning Decorative Art Production for Retail Sales
0 Units
(May be taken three times for credit)
Lab: 54

Introduction to decorative painting and associated mediums. Includes painting on a variety of surfaces using tole art brush strokes used in folk art, stenciling, and other design applications and emerging technology.
Course Schedule

VOC ESD11 Intermediate Decorative Art Production for Retail Sales
0 Units
(May be taken three times for credit)
Lab: 54

Intermediate tole art brush strokes on a variety of surfaces using acrylic paints, associated mediums, and emerging technology to create finished products.
Course Schedule

VOC ESD15 Jewelry and Lapidary Production Design
0 Units
(May be taken three times for credit)
Lab: 18

Jewelry making, stone cutting, polishing, and lapidary work, using emerging technology.
Course Schedule

VOC EST50 Electrical Fundamentals for Cable Installations
0 Units
(May be taken three times for credit)
Lecture: 54  Lab: 54

Electrical fundamentals for cable and wire installations and other low voltage systems. Includes direct current (DC) and alternating current (AC), solid-state devices, digital and microprocessor devices, and their application to cable installations. Prepares students for the California State Contractors C-7 low voltage systems license.
Course Schedule

VOC EST51 Electrical & Tool Fundamentals
0 Units
(May be taken three times for credit)
Lecture: 54  Lab: 54

Electrical and tool(hand and power) fundamentals for low voltage systems used in residential, and commercial security, networks, and audio/video systems. Topics include tool fundamentals, DC/AC sources and components, solid-state devices, digital devices, and their application to low voltage systems.
Course Schedule
VOC EST52 Fabrication Techniques for Cable Installations
0 Units
(May be taken three times for credit)
Lecture: 54  Lab: 54

Fabrication techniques used in the installation of home theater, computer networks, home automation, and other low voltage system applications. Emphasis on hand and power tools, construction methods and materials as they apply to cable and wire installations. Prepares students for the California (CA) State Contractors C-7 low voltage systems license.
Course Schedule

VOC EST53 Residential/Office System Installations
0 Units
(May be taken three times for credit)
Lecture: 54  Lab: 54

Residential/office systems and their installations. Emphasis on security, audio/video systems, wiring and cable standards and the installation techniques required for such systems.
Course Schedule

VOC EST54 Cable and Wiring Standards
0 Units
(May be taken three times for credit)
Lecture: 54  Lab: 54

Cable and wire standards of video, voice, and data wiring for home theater, computer networks, home automation, telecommunications, and other low voltage system installations. Emphasis on copper wire, coax, fiber optic, and structured cables. Prepares students for the California State Contractors C-7 low voltage systems license.
Course Schedule

VOC EST56 Home Theater, Home Integration & Home Security Systems
0 Units
(May be taken three times for credit)
Lecture: 54  Lab: 54

Home theater, home integration, home management Power Line Carriers (PLCs), security hardware and programming, and the installation and servicing of such systems. Prepares students for the California State Contractors C-7 low voltage systems license.
Course Schedule

VOC EST61 Electronic Circuits/Systems Troubleshooting
0 Units
(May be taken three times for credit)
Lecture: 54  Lab: 54

Troubleshooting basic electronic circuits and systems to component level. Circuits include power supplies, amplifiers, audio circuits, and video systems.
Course Schedule

VOC EST62 Electronic Troubleshooting 1
0 Units
(May be taken three times for credit)
Lecture: 54  Lab: 54

Troubleshooting appliances and electronic systems to the subsystem and component levels. Covers installation, troubleshooting, maintenance, and operation of a variety of small and large appliances.
Course Schedule

VOC EST64 Electronic Troubleshooting 2
0 Units
(May be taken two times for credit)
Lecture: 54  Lab: 54

Troubleshooting advanced electronic video circuits and systems to component level. Includes HDTV (plasma, LCF, DLP).
Course Schedule

VOC ET90A Introduction to EMS System
0 Units
(May be taken three times for credit)
Lecture: 15-25  Lab: 22-30

Prerequisite for VOC EMT 90. Introduces concepts of the Emergency Medical Services (EMS) System, roles, and responsibilities. Basic concepts of patient assessment and scene management taught. Stresses collaboration with other scene team members.
Course Schedule

VOC FDB1 Financial and Database Management 1
0 Units
(May be taken three times for credit)
Lecture: 4-288

Short-term introduction to small business and database software to introduce elementary computer literacy. Data entry in small business accounting management software. Create customers, vendors, and basic transactions. Design simple databases and explore database objects including simple forms, reports, and queries.
Course Schedule

VOC FDB2 Financial and Database Management 2
0 Units
(May be taken three times for credit)
Lecture: 4-288

Further instruction in basic computer literacy for small business and database software. Process sales tax, refunds, discounts, and credits using small business accounting software. Create classes and basic estimates. Modify reports, queries, and forms.
Course Schedule

VOC FSH08 Introduction to Fashion
0 Units
(May be taken two times for credit)
Lecture: 54

Fashion industry as a whole, including raw materials, manufacturing, retailing, technology, world economics, globalization, and careers. Includes apparel design, manufacturing, retail merchandising, sales, promotion, textile production, and career opportunities.
Course Schedule

VOC FSH09 History of Fashion
0 Units
(May be taken two times for credit)
Lecture: 54

Survey of Western costume and fashion from antiquity to contemporary times. Emphasis is placed on style as it relates to social, economic, and political forces, and the relationship of historic styles to current fashion.
Course Schedule
VOC FSH10  Clothing Construction 1
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Essentials of industry standard apparel construction techniques using a variety of machines and equipment. Students will be given instruction in single needle machine operation, industrial overlock operation, and garment assembly.
Course Schedule

VOC FSH12  Clothing Construction 2
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Advanced industry construction techniques using overlock and single needle machines.
Course Schedule

VOC FSH15  Aesthetic Design
0 Units
(May be taken four times for credit)
Lecture: 54

Design principles and influences in apparel selection and fashion design. Projects applying design elements and principles using CAD software.
Course Schedule

VOC FSH17  Textiles
0 Units
(May be taken two times for credit)
Lecture: 54

Manufacturing of textiles and fabrics and the factors that determine the suitability for end use. Topics include natural and synthetic fibers, yarns, fabric construction, dyes, finishes, legislation, and care. Emphasis is on selection criteria for textile product design and recent developments in the textile field.
Course Schedule

VOC FSH20  Illustration for Fashion and Costume Design
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54

Drawing techniques for fashion and theatrical costume design. Application of the basic techniques used in drawing a well-proportioned male and female figure and in rendering garment flats using texture, fabric and design detail. Students will explore a variety of mediums.
Course Schedule

VOC FSH21  Patternmaking 1
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Theory and application of basic flat patternmaking techniques to create garment designs using industry standards. By means of dart and seam manipulation, patterns will be created, constructed, and fitted.
Course Schedule

VOC FSH22  Fashion Design by Draping
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Three dimensional dress design through draping fabrics directly to a dress form to create original designs and patterns to interpret fashion illustrations and technical flats.
Course Schedule

VOC FSH23  Patternmaking 2
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54

Intermediate pattern drafting and flat patternmaking, with an introduction to the grading of patterns and technical packages. Development of patternmaking skills to include drafting flat patterns from measurements and creating advanced sleeves and collars. Students apply patternmaking theories to create ready-to-wear sportswear designs for misses and women's wear.
Course Schedule

VOC FSH62  Retail Store Management and Merchandising
0 Units
(May be taken four times for credit)
Lecture: 54  Lab: 18

Principles and practices used in the retail buying and merchandising environment. This course emphasizes the buyer's role in merchandising management, pricing strategies, promotion, retail formulas and costing calculations.
Course Schedule

VOC GOG10  Introduction to Geographic Information Systems (GIS)
0 Units
(May be taken four times for credit)
Lecture: 54

An introduction to the fundamentals of a geographic information system (GIS), including history of automated mapping; introduction to cartographic principles; overview of software, such as ArcView; hardware; application of GIS technology in environmental sciences, government, business, terminology, data and spatial analysis.
Course Schedule

VOC GRP10  Photoshop Imagery
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54

Adobe Photoshop software skills, techniques and digital workflow practices from digital image editing and retouching to the composited imagery commonly created for using photography, commercial design, printing and publishing, the internet and multimedia authoring production.
Course Schedule
VOC GRP12 Advanced Photo Editing with PhotoShop
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54
Adobe Photoshop Extended software skills and techniques for the creative photorealistic imagery commonly used in photography, commercial design, printing and publishing, the Internet and multimedia authoring production.
Course Schedule

VOC GRP16 Illustrator Graphics
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54
Adobe Illustrator software skills, techniques and digital workflow from essential digital drawing basics to creatively conceived illustrative imagery and renderings commonly created for use in commercial design, printing and publishing, the Internet and multimedia authoring production.
Course Schedule

VOC GRP18 Advanced Image Design - 3D Modeling Techniques
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54
3D graphics modeling software skills and production techniques from 2D orthographic drawing to the creatively conceived 3D imagery and animated environments commonly created for self-expression, entertainment, commercial design, printing and publishing, the Internet and multimedia authoring production.
Course Schedule

VOC GRP20 Applying Photos and Images in Multimedia
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54
Multimedia graphics software skills and production techniques for combining text, image, audio, video, animation and scripting media to author multimedia projects commonly created for self-expression, entertainment, commercial design, the Internet and multimedia production.
Course Schedule

VOC GRP8 Digital Media
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54
Introductory course for all disciplines interested in learning scientific concepts, terminology and basic techniques used to produce digital media content. Includes software such as Adobe Photoshop, Apple iPhoto and iMovie, and computer and other electronic hardware techniques necessary to acquire, store, edit, transfer or output digital media files.
Course Schedule

VOC HBB1 Starting a Home-Based Business
0 Units
(May be taken three times for credit)
Lecture: 24
Starting a home-based business to become self-employed. Includes basic marketing, finance and management skills.
Course Schedule

VOC HBB2 Managing and Growing Your Home-Based Business
0 Units
(May be taken three times for credit)
Lecture: 24
Managing day-to-day business activities to increase revenue and profitability to grow a home-based business.
Course Schedule

VOC HBBUS Starting a Home-Based Business
0 Units
(May be taken four times for credit)
Lecture: 24
Starting a home-based business to become self-employed. Includes basic marketing, finance and management skills.
Course Schedule

VOC HHA Home Health Aide
0 Units
(May be taken three times for credit)
Lecture: 20  Lab: 20
Preparation for certification as Home Health Aide by the State of California. Includes Federal and State regulations, client needs, quality of care, and clinical hours.
Course Schedule

VOC HTH01 Certified Nursing Assistant
0 Units
(May be taken three times for credit)
Lecture: 68  Lab: 102
Preparation to work in a skilled nursing facility and to pass the California Long-Term Care Certified Nursing Assistant (CNA) exam.
Course Schedule

VOC HTH04 Acute Care CNA
0 Units
(May be taken four times for credit)
Lecture: 32  Lab: 64
Preparation of CNA to provide basic personal care to patients in acute care facilities and hospitals.
Course Schedule

VOC HTH05 Health Careers Skills Lab (HCRC)
0 Units
(May be taken three times for credit)
Lab: 1-320
Health occupational training and experience using instructional equipment and simulators for health occupation competencies.
Course Schedule
VOC HTH12  Medical Terminology  
0 Units  
(May be taken two times for credit)  
Lecture: 54

Medical terminology used in various allied health fields.  
Course Schedule

VOC ID10  Introduction to Interior Design  
0 Units  
(May be taken two times for credit)  
Lecture: 36

Interior design and the planning of total interior environments that meet individual, functional, and environmental needs. Field trips may be required.  
Course Schedule

VOC ID10L  Introduction to Interior Design Laboratory  
0 Units  
(May be taken two times for credit)  
Lab: 54

Application of the interior design practice and the planning of total interior environments that meet individual, functional, and environmental needs. Field trips may be required.  
Course Schedule

VOC ID12  Materials and Products for Interior Design  
0 Units  
(May be taken two times for credit)  
Lecture: 36  Lab: 54

Analysis, application, and evaluation of products and materials used in interior design. Field trips required.  
Course Schedule

VOC ID14  History of Furniture and Decorative Arts  
0 Units  
(May be taken four times for credit)  
Lecture: 54

Historic development of structure, interior spaces, furniture and decorative arts throughout the world.  
Course Schedule

VOC IHSS  In-Home Support Service  
0 Units  
(May be taken four times for credit)  
Lecture: 120-150

Preparation to assist elderly, disabled and ill persons living at home. Communication skills, maintenance of a healthy environment, and procedures for emergencies. Physical, emotional and developmental characteristics of the patients served, personal hygiene, safe transfer techniques and basic nutrition.  
Course Schedule

VOC MCCR  Math for College and Career Readiness  
0 Units  
(May be taken three times for credit)  
Lecture: 4-140

Contextualized math course to prepare students for successful transition to college, apprenticeships, and employment. Topics include numeracy, fractions, decimals, unit conversion, ratios, proportions, algebra, measurement, and statistics.  
Course Schedule

VOC MF10  Mathematics & Blueprint  
0 Units  
(May be taken four times for credit)  
Lecture: 54

Applications of mathematical principles, including fractions, decimals, ratio and proportion, geometry and trigonometry to manufacturing problems and their solutions. Reading and interpreting part drawings, assembly drawings and sketches used in the manufacturing industry.  
Course Schedule

VOC MF11  Manufacturing Processes 1  
0 Units  
(May be taken four times for credit)  
Lecture: 18  Lab: 54

Course Schedule

VOC MF12  Manufacturing Processes 2  
0 Units  
(May be taken four times for credit)  
Lecture: 18  Lab: 54

The study of manufacturing equipment and manufacturing processes. Theory and practice in milling operations, tooling setup, metallurgy, heat treatment, precision grinding and basic tool design.  
Course Schedule

VOC MF38  MasterCAM 1  
0 Units  
(May be taken four times for credit)  
Lecture: 18  Lab: 54

Use MasterCAM software to create wire-frame part geometry, add tool paths and create CNC code for CNC mills and CNC lathes.  
Course Schedule

VOC MF38B  Advanced MasterCAM  
0 Units  
(May be taken four times for credit)  
Lecture: 18  Lab: 54

Use MasterCAM software to create wire-frame 3D/multi-axis part geometry, add tool paths, and create CNC code for CNC mills and CNC lathes.  
Course Schedule
VOC MF38C  MasterCAM Solids  
0 Units  
(May be taken four times for credit)  
Lecture: 18  Lab: 54

Using MasterCAM software to design wire drawings, translate to solids drawings, and generate code from a solids creation to meet industrial standards.
Course Schedule

VOC MF85  Manual CNC Operations  
0 Units  
(May be taken four times for credit)  
Lecture: 18  Lab: 54

Theory and practice in manually developing CNC programs. Methods of transmitting data to CNC machines and physical set-up and operations of CNC equipment.
Course Schedule

VOC MFES  Manufacturing and Electrical Systems  
0 Units  
(May be taken three times for credit)  
Lecture: 100  Lab: 100

The goals of the course include a basic understanding of electrical systems, troubleshooting electrical circuits, understanding and identifying what quality is, use of tools for inspection, and diagnostics investigation.
Course Schedule

VOC MFPP  Manufacturing and Production Principles  
0 Units  
(May be taken three times for credit)  
Lecture: 100  Lab: 100

The focus is on manufacturing and production principles. Concepts include torque, basic assembly techniques, use of materials, safety, use of tools, bonding and finishing, accurate measurements, high voltage safety, and reading blueprint drawings.
Course Schedule

VOC MFTH  Manufacturing Theory and Blueprint Reading  
0 Units  
(May be taken three times for credit)  
Lecture: 130

Manufacturing theory, including lean manufacturing concepts, 5S methodology housekeeping, 7 wastes, principles of what is work, including value add and non-value add, continuous improvement, pull systems, and error proofing. Software includes Takt time production. Components of blueprints and how to read blueprint drawings.
Course Schedule

VOC MR01  Medical Records  
0 Units  
(May be taken three times for credit)  
Lecture: 75  Lab: 75

Basics of health information management and medical office skills. Topics include the content, structure, management, analysis, and processing of health information, and issues surrounding quality, confidentiality, and compliance. Special emphasis is placed on electronic information processing. Prepare students for the Electronic Health Records Specialist Certification exam from the National Healthcareer Association, with the potential to earn the Certified Electronic Health Records Specialist (CEHRS™) credential.
Course Schedule

VOC NF81  Cooking for Health and Wellness  
0 Units  
(May be taken three times for credit)  
Lecture: 12  Lab: 20

Principles and techniques of healthful food preparation, investigation of chronic disease prevention through dietary means, and recipe modification. Includes laboratory experience in preparation of healthful foods and meals. Off-campus meetings may be required.
Course Schedule

VOC NF82  Vegetarian Cuisine  
0 Units  
(May be taken three times for credit)  
Lecture: 12  Lab: 20

Principles and techniques of vegetarian food preparation and investigation of issues related to vegetarian eating practices. Includes laboratory experience in preparation of vegetarian foods and meals. Off-campus meetings may be required.
Course Schedule

VOC PH11A  Intermediate Photography  
0 Units  
(May be taken two times for credit)  
Lecture: 36  Lab: 54

Professional photography techniques and studio lighting. Includes studio and field assignments related to problems encountered while professionally photographing people and products. Topics include medium and large format film, continuous and strobe lighting.
Course Schedule

VOC PH11B  Digital Capture Workflow  
0 Units  
(May be taken two times for credit)  
Lecture: 36  Lab: 54

Advanced application of digital capture and workflow using digital single-lens reflex (DSLR) medium and large format digital camera systems and software to produce high-quality digital photographs. Field trips may be required.
Course Schedule
VOC PHO01  Laboratory Studies: Black and White Photography
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lab: 54
Extended black and white laboratory experiences to supplement those available in the regular program. Provides students the opportunity to pursue and improve advanced projects and experiments.
Course Schedule

VOC PHO02  Laboratory Studies - Color Photography
0 Units
(May be taken four times for credit)
Lab: 54
Extended color laboratory experiences to supplement those available in the regular program. Provides students the opportunity to pursue more advanced projects and experiments.
Course Schedule

VOC PHO04  Digital Cameras and Composition
0 Units
(May be taken four times for credit)
Lecture: 18
Use of digital cameras, lenses, filters and exposure to compose quality photographs. Shooting assignments are given for analysis in class. Camera will be required after the second week.
Course Schedule

VOC PHO09  Digital Image Edit/Photographe
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54
Software and techniques including digital workflow practices, digital image editing, enhancing and retouching methods commonly used in photography.
Course Schedule

VOC PHO10  Basic Digital and Film Photography
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54
Basic mechanical, optical and chemical principles of photography, including digital image systems. Laboratory experience involves problems related to camera and image output techniques.
Course Schedule

VOC PHO11  Advanced Professional Photography
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 108
Current professional techniques and studio lighting. Includes studio and field assignments related to problems encountered while professionally photographing people and products. Topics include medium and large format film and digital cameras, computer basics for professional photographers and studio lighting. Students must furnish a digital single lens reflex (DSLR) camera. Field trips may be required.
Course Schedule

VOC PHO12  Photographic Alternatives
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54
Alternative photographic processes. Instant films: lifts and transfers, specialized lighting, stain toning, emulsion coating, and scenography will be applied to produce images not considered common to making photographic prints.
Course Schedule

VOC PHO14  Commercial Lighting
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lecture: 36  Lab: 54
Use of studio equipment, and studio and location lighting techniques used in all aspects of commercial photographic applications. Field trips may be required.
Course Schedule

VOC PHO15  History of Photography
0 Units
(May be taken two times for credit)
Lecture: 54
Survey of history of photography from early 1800's to the present, introducing various concepts of photo representation and their impact on society. Field trip required.
Course Schedule

VOC PHO16  Fashion and Editorial Portrait Photography
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54
Fashion and editorial portrait photography with studio and location lighting techniques, creative concepts, styling, and working with models.
Course Schedule

VOC PHO17  Photocommunication
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54
Enhancing visual communication of commercial, documentary, and fine art imagery. Includes using camera tools (lens, aperture, shutter) lighting, color, and design to create images that clearly communicate messages.
Course Schedule

VOC PHO18  Portraiture and Wedding Photography
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54
Professional studio and field techniques for portrait and wedding photography. Off-camera assignment or field trips may be required.
Course Schedule
VOC PHO19  Digital Color Management
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lecture: 36  Lab: 54
Digital color management software and hardware skills, techniques and
digital workflow practices commonly used in photography.
Course Schedule

VOC PHO1A  Laboratory Studies: Beginning Black and White
Photography
0 Units
(May be taken four times for credit)
(May be taken for Pass/No Pass only)
Lab: 54
Extended black-and-white laboratory experiences to improve skills
through further instruction and practice, as well as pursue more
advanced projects and experiments.
Course Schedule

VOC PHO1B  Laboratory Studies: Advanced Black and White Photography
0 Units
(May be taken four times for credit)
(May be taken for Pass/No Pass only)
Lab: 54
Extended advanced black and white laboratory experiences with medium
and large format cameras to improve skills and pursue more advanced
photographic printing, processing, and enlarging techniques.
Course Schedule

VOC PHO1C  Laboratory Studies: Studio Photography
0 Units
(May be taken four times for credit)
(May be taken for Pass/No Pass only)
Lab: 54
Extended studio photography experiences to supplement those available
through the regular program. Provides students the opportunity to
improve skills through further instruction and practice, as well as pursue
more advanced projects and experiments.
Course Schedule

VOC PHO1D  Laboratory Studies: Computer Applications in Photography
0 Units
(May be taken four times for credit)
(May be taken for Pass/No Pass only)
Lab: 54
Extended computer laboratory experiences to supplement those available
in the regular program. Provides students the opportunity to improve
skills through further instruction and practice, as well as pursue more
advanced projects and experiments.
Course Schedule

VOC PHO20  Color Photography
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54
Use of color principles as they relate to commercial and artistic styles.
This includes lighting, color theory, color management, exaggerated and
unique color schemes applied color psychology principles.
Course Schedule

VOC PHO21  Exploring Color Photography
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54
Use of color principles as they relate to commercial and artistic styles
and innovative use of color applications. Includes lighting and unusual
techniques, exaggerated and unique color schemes, light-painting,
lighting effects, high dynamic range effects and oversize output.
Course Schedule

VOC PHO24  Advanced Digital Image Editing for Photographers
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lecture: 36  Lab: 54
Advanced software and techniques for digital image editing, archiving,
and retouching used in commercial photography.
Course Schedule

VOC PHO28  Photography Portfolio Development
0 Units
(May be taken two times for credit)
Lecture: 36  Lab: 54
Development of a photography portfolio for use in job application or
gallery exhibition purposes. Field trips may be required.
Course Schedule

VOC PHO29  Studio Business Practices for Commercial Artists
0 Units
(May be taken two times for credit)
Lecture: 54
Studio business practices for commercial artists. Small business
operations, pricing services based on the Licensing Business Model,
copyright basics, project production, and estimating and invoicing. Field
trips may be required.
Course Schedule

VOC PHO30  Commercial and Illustrative Photography
0 Units
(May be taken four times for credit)
Lecture: 36  Lab: 54
Overview of the commercial photographic industry. Exploration of the
various commercial photography specialties including studio product
and people photography, lifestyle, fashion and industrial/location
photography with an emphasis on the development of a personal creative
style. Field trips may be required.
Course Schedule
VOC PT81  Physical Therapy Aide  
0 Units  
(May be taken two times for credit)  
Lecture: 54  Lab: 54  
Role and skills of physical therapy aide. Includes terminology, procedures and interpersonal skills.  
Course Schedule

VOC RDTEC  IV Therapy for Radiology Technology  
0 Units  
Lecture: 10  Lab: 10  
Principles and techniques of venipuncture. Includes anatomy and physiology of sites, instruments, intravenous (IV) solutions, equipment, puncture techniques, hazards and complications, emergency care, post-puncture care.  
Course Schedule

VOC RWCCR  Reading and Writing for College and Career Readiness  
0 Units  
(May be taken three times for credit)  
Lecture: 1-80  
Contextualized reading and writing course to prepare students for successful transition to apprenticeships, college, and career. Skimming and scanning, annotation, reading for main idea, reading strategies, sentence structure, summarizing versus responding, paragraph structure, paragraph types, reading charts and graphs, and vocabulary.  
Course Schedule

VOC SPT  Solar Panel Technology  
0 Units  
(May be taken three times for credit)  
Lecture: 48  Lab: 12  
Entry-level solar panel installation training for technician from project planning to final inspection and trouble shooting. Safe working practices, conditions where the most power can be captured from sunlight, and the physics of solar panel operation are covered. Additionally, the student will learn the mechanical aspects of installation such as tools, mounting hardware, and maintaining roof integrity. Electrical instruction will include the different configurations of circuitry and types of grid connections. Hands-on practical labs are designed to emphasize and support the lecture curriculum.  
Course Schedule

VOC ST1  Sewing and Tailoring 1  
0 Units  
(May be taken three times for credit)  
Lab: 4-48  
Patternmaking and garment fitting with flat pattern and draping methods, learned through process of creating a personal fitting form.  
Course Schedule

VOC ST2  Sewing and Tailoring 2  
0 Units  
(May be taken three times for credit)  
Lab: 18  
Haute couture garment construction, including couture tailoring techniques for inner structure, finishing, and achieving superior overall appearance.  
Course Schedule

VOC TCH60  Customer Relations for the Technician  
0 Units  
(May be taken two times for credit)  
(May be taken for Pass/No Pass only)  
Lecture: 36  
Customer relations (soft skills) for the technician including benefits for knowing and using effective customer contact tools, proper customer interactions, ethics and maintaining customer satisfaction.  
Course Schedule

VOC THR14  Stagecraft  
0 Units  
(May be taken four times for credit)  
Lecture: 36  Lab: 54  
Theory and practice of scenery construction and stage lighting. Practical work in scene design and construction and lighting layouts, with the opportunity to perform these tasks in actual theatre situations. By virtue of the wide range of productions staged by the department, students who repeat this course will increase their skills and proficiency.  
Course Schedule

VOC THR15  Play Rehearsal/Performance  
0 Units  
(May be taken four times for credit)  
Lab: 54-162  
Planning, preparation, and presentation of college-sponsored dramatic presentations. Emphasis on acting. Attendance at performances is required.  
Course Schedule

VOC THR16  Theatrical Make-Up  
0 Units  
(May be taken four times for credit)  
Lecture: 36  Lab: 36  
An introduction to the theory and practice of make-up for the stage. The student will gain practice in the design and application of straight, stylized character and other make-up techniques.  
Course Schedule
VOC THR18  Technical Theater Practicum  
0 Units  
(May be taken four times for credit)  
Lab: 54

Participation in the technical preparation and operation of productions presented to the community. The student will be involved in one or more of the following areas: stage scenery construction, stage lighting set-up, property construction, stage sound set-up, costume construction and makeup. Crew assignments will be given to the student upon enrollment. The availability of assignments is contingent upon the requirements of the production.
Course Schedule

VOC THR19  Theatrical Costuming  
0 Units  
(May be taken four times for credit)  
Lecture: 36  Lab: 54

The study of costume history, principles of costume design, fibers and textiles, basic costume construction and design rendering techniques.  
Costume crew assignments for major productions will provide practical instruction in actual performance demands on costumes and their proper maintenance. Class is suitable for people interested in costuming for theater, dance, film, television and reenactments.
Course Schedule

VOC THR60  Children's Theater  
0 Units  
(May be taken four times for credit)  
Lecture: 36  Lab: 72

A comprehensive study of theatre for the child audience in theory and practice. Specifically seeks to evaluate play production techniques and literature with an eye to the needs of an audience of children. Includes history of children's theatre, analysis of plays for children and actual experience in acting, directing and producing children's plays for public presentation.
Course Schedule

VOC TR10A  Introduction to Tutoring  
0 Units  
Lecture: 18

Introduction to tutoring, with an emphasis on tutoring strategies, problem solving and working with a diverse student population.
Course Schedule

VOC TR10B  Tutoring in English Language  
0 Units  
Lecture: 18

Tutoring in the English language with an emphasis on approaches to working with students on written drafts and addressing the needs of non-native speakers.
Course Schedule

VOC TR10C  Tutoring/Supplemental Instructor  
0 Units  
Lecture: 18

Tutoring as a Supplemental Instructor with an emphasis on tutoring in the classroom and in small groups under the supervision of a designated instructor.
Course Schedule

VOC TR10D  Tutoring in Mathematics  
0 Units  
Lecture: 18

Tutoring in mathematics with an emphasis on strategies to promote active learning and dealing with specific obstacles in developmental algebra.
Course Schedule

VOC TR10R  Tutoring in Reading  
0 Units  
(May be taken two times for credit)  
(May be taken for Pass/No Pass only)  
Lecture: 18

Application of strategic reading processes and approaches to reading tutoring. Prepares students to become tutors for reading.
Course Schedule

VOC TRAD1  Introduction to Construction Trades 1  
0 Units  
(May be taken three times for credit)  
Lecture: 100

An introduction to the various building and construction trades. Overview and history of the trades and unions, and preparation for entrance into the apprenticeship programs and construction industry.
Course Schedule

VOC TRAD2  Introduction to Construction Trades 2  
0 Units  
(May be taken three times for credit)  
Lecture: 100

Second module introducing essential topics related to various building and construction trades. Construction health and safety, basic components of a blueprint, green construction, and financial literacy.
Course Schedule

VOC WL30  Metal Sculpture  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 54

Welding processes used in the metal sculpting industry to create three-dimensional art forms. Covers design, pre-construction analysis, and cost estimates for projects. Includes use of equipment for oxyfuel welding, gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), shielded metal arc welding (SMAW), and flux-cored arc welding (FCAW). Includes demonstrations and exercises in welding as it relates to the art industry.
Course Schedule
VOC WL40  Introduction to Welding  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 54  
Fundamentals of welding processes related to the areas of fabrication, construction, machine tool, aerospace and the transportation industries. Course Schedule  

VOC WL50  Oxyacetylene Welding  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 54  
Oxyacetylene fusion welding, non-fusion welding and cutting. Develops understanding of and fundamental skills in modern welding practices. Course Schedule  

VOC WL51  Basic Electric Arc Welding  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 54  
Electric arc welding, weld symbols, standard electrode and alloy electrode selection, American Welding Society (AWS) procedure for certification. Course Schedule  

VOC WL53A  Welding Metallurgy  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Designed for students seeking a career in welding and welding inspection. Covers structure of matter, chemical, physical and mechanical properties of metals, principles of alloying, solid state diffusion, plastic deformation and heat treatment. Course Schedule  

VOC WL60  Print Reading and Computations for Welders  
0 Units  
(May be taken two times for credit)  
Lecture: 54  
Reading prints and performing computations for welding fabrication operations. Interpreting and visualizing prints, title blocks, welding symbols, specifications, notes and bills of materials. Computations necessary to calculate materials, costs, sizes, and fractional, decimal and metric conversions. Course Schedule  

VOC WL70A  Beginning Arc Welding  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 108  
Develops manipulative skills and techniques for Shielded Metal Arc (SMAW) and Flux Cored Arc (FCAW) welding processes in the flat and horizontal positions using AC and DC welding currents on carbon steel. Course Schedule  

VOC WL70B  Intermediate Arc Welding  
0 Units  
(May be taken two times for credit)  
(Lecture: 18  Lab: 108  
Welding high alloy steel with both Shielded Metal Arc (SMAW) and Flux Core Arc (FCAW) welding processes in the vertical and overhead positions with an introduction to Gas Metal Arc (GMAW) and gas Tungsten (GTAW) welding. Course Schedule  

VOC WL70C  Certification for Welders  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 108  
Building construction for the advanced arc welding student. Special emphasis will be placed on welding symbols and the American Welding society’s (AWS) D1.1 and D1.3. Course Schedule  

VOC WL80  Construction Fabrication and Welding  
0 Units  
(May be taken three times for credit)  
Lecture: 18  Lab: 108  
Theory and practical applications of welding used in industry and construction. Designed to adapt and upgrade skills to industry standards and develop fabrication skills to supplement and augment welding skills. Includes project models such as ornamental iron gates and fences and material storage components. Course Schedule  

VOC WL81  Pipe and Tube Welding  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 108  
Welding in all positions as applied to the pipe industry. Welding processes include shielded metal arc welding (SMAW), gas tungsten arc welding (GTAW), gas metal arc welding (GMAW), flux cored arc welding (FCAW) using a variety of materials and configurations on subcritical and critical piping and tubing. Course Schedule  

VOC WL90A  Gas Tungsten Arc Welding  
0 Units  
(May be taken two times for credit)  
Lecture: 18  Lab: 108  
Advanced Gas Tungsten Arc Welding (GTAW) or tungsten inert gas (TIG) of steel, aluminum, corrosion resisting steel (CRES), and exotic metals. All position welds with many surfaces and transitions. Course Schedule
VOC WL90B  Semi Automatic Arc Welding Process
0 Units
(May be taken two times for credit)
Lecture: 18  Lab: 108

Semiautomatic Welding Processes including Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Submerged Arc Welding (SAW) with solid and tubular wires with and without gas shielding. All position welds with many varying thicknesses will be covered.
Course Schedule

VOC WL91  Automotive Weldingm, Cutting and Modification
0 Units
(May be taken two times for credit)
Lecture: 18

Welding and cutting metals used in the automotive industry. Gas Metal Arc (GMAW/MIG), Gas Tungsten Arc (GTAW/TIG), Plasma Arc Butting (PAC) and Oxy-fuel Cutting (OFC) welding will be covered.
Course Schedule

VOC WL91L  Automotive Welding, Cutting and Modification Lab
0 Units
(May be taken two times for credit)
(May be taken for Pass/No Pass only)
Lab: 108

Practical lab applications for sheet metal forming, metal inert gas (MIG), tungsten inert gas (TIG), resistance spot (RSW), Oxy-fuel welding, Plasma arc cutting (PAC) and Oxy-fuel cutting. Includes design, fabrication and assembly of automotive suspension and chassis components.
Course Schedule

VOC WLD01  Welding Basics
0 Units
(May be taken three times for credit)
Lecture: 60  Lab: 60

Fundamentals of welding processes including Oxyfuel, Shielded Metal Arc, and Gas Metal Arc welding. Welding processes related to the areas of fabrication, construction, machine tool, aerospace, and the transportation industries. Focus on use of welding tools and safety in the industry.
Course Schedule