# PROGRAM AND COURSE DESCRIPTIONS

catalog 2013-2014

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UNDERSTANDING THE COURSE DESCRIPTIONS

Availability of course offerings
The courses listed in our catalog may not be offered every term or every year. Check the schedule of classes for courses offered in the current semester.

Course numbering
Course descriptions with numbers below 100 are not college level (degree applicable) courses and do not apply as credit toward the associate degree. Courses with numbers between 100 and 299 are generally freshman and sophomore level college courses. Students should carefully review each specific course description to ensure that the selected courses will satisfy requirements for transfer, degree or certificate goals.

Prerequisites/co-requisites
When a course description lists a prerequisite, it means that the prerequisite must be successfully completed before the student may enroll in that course. If the course lists a co-requisite, students must have successfully completed the course in a prior term or be enrolled in the co-requisite course in the same term. Please see page 17 for more information about course prerequisites and/or co-requisites.

Recommendations
Students are advised to complete the recommended course or courses before enrolling in the selected course. Recommendations increase the student's ability to succeed.

Grade codes
The course descriptions in this catalog and in the schedule of classes use codes to identify grading, transferability, and repeatability options. These codes are defined as follows:
- **P/NP** - The course may only be taken for a pass/no pass grade.
- **LR** - The course may only be taken for a letter grade.
- **SC** - Students may choose P/NP grading before the fourth week of the term. Please see page 27 for more information about the grade policy.

CSU transferable (CSU)
Courses identified with the CSU code at the end of the description are transferable to campuses of the CSU system. However, they may only be transferable as an elective. Students should seek the advice of a counselor for complete information about the transferability of courses toward meeting general education breadth or major requirements. Lists of CSU transferable courses are available at [www.assist.org](http://www.assist.org).
PROGRAM LEVEL STUDENT LEARNING OUTCOMES

ACCOUNTING

see Business accounting - BUSAC

ADDICTION STUDIES – ADS

Associate in science degree
Addiction counseling

Students completing the program will be able to:

A. compare and contrast the efficacy of various assessment tools, motivational strategies, and substance abuse treatment approaches.

B. describe the importance of cultural competence and how it relates to becoming an effective addiction counselor.

C. demonstrate basic listening skills.

D. demonstrate an understanding of the legal and ethical issues that workers may encounter in the addiction treatment field.

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Certificate of achievement
Addiction studies

Students completing the program will be able to...
A. compare and contrast the prevalence, impact, and cost of substance use, abuse, and dependence to the individual and society.
B. demonstrate an understanding of the general terminology related to addiction and recovery.
C. analyze common family patterns of behavior and the influence addiction has within the family system.

ADMINISTRATION OF JUSTICE – ADJUS

Associate in science degree
Administration of justice

Students completing the program will be able to...
A. demonstrate an understanding of the three parts of the criminal justice system and how they interrelate.
B. demonstrate a working knowledge of the theory and practice of criminal law.
C. demonstrate an understanding of the legal procedures of the United States and California criminal justice systems.

Certificate of achievement
Administration of justice

Students completing the program will be able to...
A. demonstrate a working knowledge of the basic components of the criminal justice system.
B. demonstrate a working knowledge of the theory and practice of criminal law.
C. demonstrate an understanding of the legal procedures of the United States and California criminal justice systems.

Certificate of accomplishment
Administration of justice
Correctional specialist

Students completing the program will be able to...
A. demonstrate familiarity with the basic components of the criminal justice system with special emphasis on the correctional system.
B. demonstrate an understanding of the history, culture, organization of criminal gangs and their social and criminal impact on society.
C. demonstrate a working knowledge of the organization, functions and jurisdiction of juvenile agencies and processing and detention of juveniles.

Certificate of accomplishment
Administration of justice
Crime scene investigator

Students completing the program will be able to...
A. demonstrate an understanding of the three parts of the criminal justice system and how they interrelate.
B. identify, collect, package and analyze physical evidence from a crime scene.
C. conduct a successful criminal investigation using interviews, interrogation and case preparation.

Certificate of accomplishment
Administration of justice
Criminal law specialist

Students completing the program will be able to...
A. demonstrate an understanding of the three parts of the criminal justice system and how they interrelate.
B. demonstrate a working knowledge of the theory and practice of criminal law.
C. demonstrate an understanding of the legal procedures of the United States and California criminal justice systems.

Certificate of accomplishment
Administration of justice
Juvenile counseling

Students completing the program will be able to...
A. demonstrate an understanding of the three parts of the criminal justice system and how they interrelate.
B. demonstrate an understanding of the history, culture, organization of criminal gangs and their social and criminal impact on society.
C. demonstrate a working knowledge of the organization, functions and jurisdiction of juvenile agencies and processing and detention of juveniles.
**Certificate of accomplishment**  
Administration of justice - Patrol specialist

**Students completing the program will be able to...**
A. demonstrate an understanding of the three parts of the criminal justice system and how they interrelate.
B. gather, organize and prepare written reports for law enforcement and correctional activities.
C. demonstrate proficiency with handguns and shotguns, an understanding of personal safety and defensive tactics and their legal ramifications.

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**ARCHITECTURE – ARCHI**

**Associate in science degree**  
Architecture design

**Associate in science degree**  
Architecture technology

**Certificate of achievement**  
Architecture technology

**Students completing the program will be able to...**
A. communicate architectural concepts using graphic conventions and representational methods.
B. demonstrate an understanding of drawing methods and graphic compositional techniques.
C. construct physical models of architectural elements and spaces.
D. demonstrate an understanding of building components, structures and systems in relation to design.
E. identify notable architects, design concepts, canonical buildings and precedents in architecture.
F. identify the historical and contemporary role of architects in the profession and related design fields.

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**ART – ART**

**Associate in arts degree**  
Fine arts

**Students completing the program will be able to...**
A. demonstrate basic drawing skills, color manipulation, and design principles in selected areas of emphasis.
B. apply building techniques to create three dimensional forms in selected areas of emphasis.
C. demonstrate an understanding of the basic principles and concepts of analog and digital photography in selected areas of emphasis.
D. critically evaluate multimedia design techniques and their uses in selected areas of emphasis.
E. analyze works of art in terms of their historical circumstances and cultural values.
F. employ critical thinking skills regarding their artwork and the artwork of others.

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**Certificate of achievement**  
Ceramics

**Students completing the program will be able to...**
A. identify and apply the formal design elements of art.
B. create original works of ceramic art.
C. create a portfolio demonstrating ideas in a broad range of ceramic techniques.
D. formally compare the attributes of ceramics and other art forms.
E. employ critical thinking to analyze ceramic art works in terms of historical context and cultural values.

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**Certificate of achievement**  
Painting and drawing

**Students completing the program will be able to...**
A. create a portfolio demonstrating ideas in a broad range of painting and drawing techniques.
B. identify the elements that define two-dimensional art.
C. employ critical thinking to analyze two-dimensional art works in terms of historical context and cultural values.
D. demonstrate basic drawing skills, color manipulation, and application of design principles.
E. apply the processes necessary to create drawings in various media and/or paintings in oil, acrylic, and alternative media.

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**Certificate of achievement**  
Printmaking

**Students completing the program will be able to...**
A. create a portfolio demonstrating ideas in a broad range of printmaking techniques.
B. create and produce edition art prints from various print media.
C. employ critical thinking to analyze art prints in terms of historical content and cultural values.
D. demonstrate ability to create prints independently and to present professionally.
E. create images suitable for printing.
F. critique their own artwork and the artwork of others.
ART DIGITAL MEDIA – ARTDM

Associate in arts degree
Art digital media

Students completing the program will be able to...
A. demonstrate an understanding of basic drawing techniques.
B. produce a digital image from scanned or digital photographs.
C. utilize digital images for exports to websites, multimedia presentations, and print.
D. utilize production tools for digital audio for multimedia projects.
E. demonstrate basic techniques for video capture and editing.
F. design a multimedia project.
G. critically evaluate multimedia design techniques and their use in the development of a professional portfolio.
H. qualify for entry-level employment in the art digital media field.

Certificate of achievement
Art digital media
Character animation

Students completing the program will be able to...
A. design a character based on a written description.
B. present an animation containing the elements of a fully developed cartoon.
C. produce a storyboard utilizing the principles of sequential art.
D. develop observational skills in drawing the human figure.
E. build foundation knowledge in digital media production.
F. qualify for entry-level employment in the art digital media field.
G. gain skills in specific digital media applications.

Certificate of achievement
Art digital media
Digital audio

Students completing the program will be able to...
A. utilize production tools for digital audio for multimedia projects.
B. apply various audio file formats.
C. produce recorded music projects.
D. build foundation knowledge in digital media production.
E. qualify for entry-level employment in the art digital media field.
F. gain skills in specific digital media applications.

Certificate of achievement
Art digital media
Digital imaging

Students completing any program will be able to...
A. create digital images suitable for printing or multimedia applications.
B. evaluate digital images for effective design.
C. create graphic design projects.
D. build foundation knowledge in digital media production.
E. qualify for entry-level employment in the art digital media field.
F. gain skills in specific digital media applications.
Certificate of achievement
Art digital media
Motion graphics

Students completing any program will be able to...
A. create motion graphic projects.
B. utilize digital production tools for web delivery
C. demonstrate competency in various aspects of digitizing, importing, and exporting images.
D. build foundation knowledge in digital media production.
E. qualify for entry-level employment in the art digital media field.
F. gain skills in specific digital media applications.

Certificate of achievement
Art digital media
3D modeling and animation

Students completing any program will be able to...
A. create 3D animation projects.
B. critique animations.
C. demonstrate basic skills, color manipulation, and design principles unique to animation.

Certificate of achievement
Art digital media
Web design

Students completing any program will be able to...
A. construct and publish web pages.
B. use HTML code in creating web pages.
C. create a variety of websites, effectively using animation, design concepts, and interactivity.
D. build foundation knowledge in digital media production.
E. qualify for entry-level employment in the art digital media field.
F. gain skills in specific digital media applications.

Certificate of accomplishment
Art digital media
Foundation

Students completing any program will be able to...
A. demonstrate an understanding of basic drawing techniques.
B. produce a digital image from scanned or digital photographs.
C. utilize digital images for exports to websites, multimedia presentations, and print.
D. utilize production tools for digital audio for multimedia projects.
E. demonstrate basic techniques for video capture and editing.
F. design a multimedia project
G. critically evaluate multimedia design techniques and their use in the development of a professional portfolio.
H. qualify for entry-level employment in the art digital media field.

BIOLOGICAL SCIENCE – BIOSC

Associate in science degree
Allied health

Certificate of achievement
Allied health

Students completing any program will be able to...
A. illustrate and analyze chemical bonds and reactions.
B. demonstrate and understanding of the structure and growth of microbes.
C. demonstrate knowledge of the structure and function of the human body.
D. demonstrate an understanding of the relationship between diet and health.

Associate in science degree
Biology

Students completing any program will be able to...
A. apply the scientific method of inquiry.
B. illustrate and analyze chemical bonds and reactions.
C. compare and contrast organismal life structures and functions.
D. demonstrate an understanding of the mechanisms and evidence for the theory of evolution.

Associate in science degree
Life science

Students completing any program will be able to...
A. understand and apply the scientific method of inquiry.
B. explain, illustrate and analyze chemical bonds and reactions
C. discuss the mechanisms and evidence for the theory of evolution.
D. understand the molecular aspects of genetics (Cellular Biology emphasis)
E. discuss interactions of organisms in communities (Field Studies emphasis)
F. demonstrate knowledge of the structure and function of the human body (Health emphasis).

**Associate in science degree**

**Natural science**

**Students completing any program will be able to...**
A. understand and apply scientific terminology appropriate for this specific field of life or physical science.
B. understand and apply the method of scientific inquiry appropriate for this specific field of life or physical science.
C. collect and/or analyze laboratory and/or field data appropriate for the specific field of life or physical science.
D. critically evaluate scientific information in various formats.
E. understand the relationship between humans and the physical and/or life sciences.

**Certificate of achievement**

**Allied health fundamentals**

**Students completing any program will be able to...**
A. demonstrate an understanding of the structure and growth of microbes.
B. demonstrate knowledge of the structure and function of the human body.
C. demonstrate an understanding of the relationship between diet and health.

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**BROADCAST COMMUNICATION ARTS – BCA**

**Associate in arts degree**

Broadcast communication arts

**Certificate of achievement**

Broadcast communication arts

**Students completing any program will be able to...**
A. produce for broadcast and digital distribution utilizing three-camera studio format principles (except Basic Digital Field Production and Basic Writing for Digital Medium).
B. operate cameras and professional sound equipment (except Basic Writing for Digital Medium).
C. perform digital nonlinear editing (except Basic Writing for Digital Medium).
D. produce still and motion graphics (except Basic Writing for Digital Medium).
E. produce for broadcast and digital distribution utilizing field production principles (except Basic Studio Production and Basic Writing for Digital Medium).
F. write scripts for various production formats.
G. direct projects for various production formats.
H. transfer to four-year institutions majoring in broadcast communication arts.
I. qualify for entry-level employment in broadcasting.
J. apply their planning skills for project management.
K. identify major trends in the history of broadcasting.

**Certificate of accomplishment**

**Broadcast communication arts**

**Basic digital field production**

**Students completing the program will be able to...**
A. operate cameras and professional sound equipment (except Basic Writing for Digital Medium).
B. perform digital nonlinear editing (except Basic Writing for Digital Medium).
C. produce still and motion graphics (except Basic Writing for Digital Medium).
D. produce for broadcast and digital distribution utilizing field production principles (except Basic Studio Production and Basic Writing for Digital Medium).
E. write scripts for various production formats.
F. direct projects for various production formats.
G. transfer to four-year institutions majoring in broadcast communication arts.
H. qualify for entry-level employment in broadcasting.
I. apply their planning skills for project management.
J. identify major trends in the history of broadcasting.

**Broadcast communication arts**

**Basic studio production**

**Students completing the program will be able to...**
A. produce for broadcast and digital distribution utilizing three-camera studio format principles (except Basic Digital Field Production and Basic Writing for Digital Medium).
B. operate cameras and professional sound equipment (except Basic Writing for Digital Medium).
C. perform digital nonlinear editing (except Basic Writing for Digital Medium).
D. produce still and motion graphics (except Basic Writing for Digital Medium).
E. write scripts for various production formats.
F. direct projects for various production formats.
G. transfer to four-year institutions majoring in broadcast communication arts.
H. qualify for entry-level employment in broadcasting.
I. apply their planning skills for project management.
J. identify major trends in the history of broadcasting.

Certificate of accomplishment
Broadcast communication arts
Basic writing for digital medium

Students completing the program will be able to...
A. write scripts for various production formats.
B. direct projects for various production formats.
C. transfer to four-year institutions majoring in broadcast communication arts.
D. qualify for entry-level employment in broadcasting.
E. apply their planning skills for project management.
F. identify major trends in the history of broadcasting.

BUSINESS – BUS

Associate in science degree in business administration for transfer degree

Students completing the program will be able to...
A. develop business communications that present information in an organized and concise manner, using acceptable grammar and language arts.
B. explain the functions of business financial operations and apply them to business case problems.
C. compare and contrast ethical approaches and social responsibility options in business situations.
D. evaluate an existing business and identify the business organization, key business procedures relevant to a specific problem using appropriate technology.

Certificate of achievement
Advanced general business

Students completing the program will be able to...
A. develop business communications that present information in an organized and concise manner, using acceptable grammar and language arts.
B. explain the functions of business financial operations and apply them to business case problems.
C. compare and contrast ethical approaches and social responsibility options in business situations.
D. analyze and evaluate business situations in the major concentration area (i.e. real estate, wealth management, business marketing, advanced general business, management and leadership studies, and small business management/entrepreneurship), identify business problems, and develop solutions/plans of action.

Certificate of achievement
Business transfer

Students completing the program will be able to...
A. develop business communications that present information in an organized and concise manner, using acceptable grammar and language arts.
B. explain the functions of business financial operations and apply them to business case problems.
C. compare and contrast ethical approaches and social responsibility options in business situations.
D. evaluate an existing business and identify the business organization, key business procedures relevant to a specific problem using appropriate technology.
Certificate of achievement  
Business marketing  

Students completing the program will be able to...  
A. demonstrate knowledge of business operations, the business organization, and business procedures.  
B. determine the demand for products and services offered by a firm and its competitors and identify potential customers.  
C. develop pricing strategies with the goal of maximizing the firm’s profits or share of the market while ensuring the firm’s customers are satisfied.  
D. participate in product development or monitor trends that indicate the need for new products and services.  
E. identify and implement cost-effective distribution channels and promotional mixes.

Certificate of achievement  
General business  

Students completing the program will be able to...  
A. determine how a business decision maximizes the benefit and minimizes the risk for all entities involved.  
B. explain the importance of the global environment and the role it plays in the overall success of business organizations.  
C. explain group dynamics in developing and managing a team and work effectively in teams.

Certificate of achievement  
Management and leadership studies  

Students completing the program will be able to...  
A. integrate basic management theories into supervisory and management functions.  
B. investigate current management practices and problems related to human behavior in organizations.  
C. differentiate threshold issues involved in the legal, ethical, and social responsibilities of management.  
D. summarize measures that can be taken by individuals and organizations to correct organizational problems.

Certificate of achievement  
Real estate  

Students completing the program will be able to...  
A. explain the functions of real estate markets, real estate practices, and real estate institutions, and recommend choices for common real estate situations.  
B. demonstrate how to calculate the time value of money and evaluate various financing alternatives for real estate investment strategies.  
C. evaluate real estate development opportunities in the commercial real estate markets for residential, warehouse, retail, and industrial properties.  
D. research and analyze specific case problems related to real estate investment and present solutions.

Certificate of achievement  
Small business management/entrepreneurship  

Students completing the program will be able to...  
A. describe the nature and characteristics of successful small business persons.  
B. summarize the responsibilities of small business owners in selecting, motivating, training, and supervising employees.  
C. define and give concrete examples of the “Competitive Advantage” concept that a small business must achieve in order to succeed.  
D. construct a business plan and essential financial documents for a small business.

Certificate of achievement  
Wealth management  

Students completing the program will be able to...  
A. demonstrate knowledge of business operations, the business organization, and business procedures.  
B. interview clients to determine clients’ assets, liabilities, cash flow, insurance coverage, tax status, and financial objectives.  
C. develop financial plans based on analyses of clients’ financial status, and discuss financial options with clients.
Certificate of accomplishment
Business essentials

Students completing the program will be able to...
A. apply standard business English to oral and written communication, including grammar, punctuation, mechanics, vocabulary, style and usage.
B. complete business-related mathematical problems with reasonable speed and accuracy, both manually and using calculators and business software.
C. analyze basic business documents and financial statements to detect business problems.
D. interpret a research need, determine the type and scope of information needed, and implement effective research strategies including the Internet.

BUSINESS ACCOUNTING – BUSAC

Associate in science degree
Accounting

Students completing the program will be able to...
A. construct basic accounting documents and solve case problems related to the accounting cycle utilizing appropriate technology.
B. analyze existing documents by verifying the accuracy of information for a company and performing necessary reconciliation.
C. take and pass the first Certified Public Accounting exam.

Certificate of achievement
Advanced accounting

Students completing the program will be able to...
A. produce accurate financial statements for a company and communicate a company’s financial position.
B. construct basic accounting documents and solve case problems related to the accounting cycle utilizing appropriate technology.
C. analyze existing documents by verifying the accuracy of information for a company and performing necessary reconciliation.
D. compare and contrast the financial information prepared for different types of business entity.

BUSINESS INFORMATION MANAGEMENT – BUSIM

Certificate of achievement
Office professional

Students completing the program will be able to...
A. apply standard business English to oral and written communication, including grammar, punctuation, mechanics, vocabulary, style and usage.
B. complete business-related mathematical problems with reasonable speed and accuracy, using calculators and business software.
C. interpret an information technology need, determine the type and scope of solution needed, and implement an effective strategy to address the need.
D. identify appropriate information compilation, reporting, storage and retrieval systems for common business situations, using manual and technological approaches.
Certificate of accomplishment  
Office professional essentials

Students completing the program will be able to...
A. apply standard business English to oral and written communication, including grammar, punctuation, mechanics, vocabulary, style and usage.
B. complete business-related mathematical problems with reasonable speed and accuracy, both manually and using calculators and business software.
C. analyze common business documents and financial statements to detect business problems.
D. interpret an information technology need, determine the type and scope of application needed, and implement an effective strategy to meet the need.

BUSINESS MANAGEMENT – BUSMG

Certificate of achievement  
Management studies see Business - BUS
Certificate of achievement  
Small business management/entrepreneurship see Business - BUS

BUSINESS MARKETING – BUSMK

Certificate of achievement  
Business marketing see Business - BUS

BUSINESS REAL ESTATE – RE

Certificate of achievement  
Real estate see Business - BUS

CHINESE – CHIN

Associate in arts degree  
Mandarin Chinese
Certificate of achievement  
Mandarin Chinese

Students completing the program will be able to...
A. comprehend a spoken dialogue in the target language.
B. identify the present, past and future tenses in a written paragraph.
C. interpret cultural behavior.

COMMUNICATION STUDIES – COMM

Certificate of achievement  
Communication studies

Students completing the program will be able to...
A. recognize the cultural, ethical, political, psychological and practical aspects of communication systems and models.
B. develop and present effective informative and persuasive presentations, becoming more capable, responsible speakers.
C. demonstrate an understanding of the role critical thinking plays in the effective analysis and development of informative and persuasive messages.
D. demonstrate an understanding of interpersonal communication theory and practice the skills necessary for effective interpersonal interactions.
E. demonstrate an understanding of a personal empowerment and responsibility.

Certificate of achievement  
Communication studies

Students completing the program will be able to...
A. create and present a well structured persuasive presentation.
B. create and present a well structured informative presentation.
C. be aware of and able to apply interpersonal conflict resolution methods.
COMPUTER INFORMATION SYSTEMS – CIS

Associate in science degree
Computer information systems

Students completing the program will be able to...
A. perform the duties of information technologies and management workers as identified by the Bureau of Labor Statistics.
B. provide technical assistance and training to computer system users.
C. investigate and resolve computer software and hardware problems of users.
D. perform the professional duties demanded in any modern office environment.
E. design and maintain static and dynamic websites.
F. integrate elements such as graphics, animation and streaming media on websites.
G. develop and implement database systems for stand alone or internet based deployment.
H. use technology to manage multi-faceted projects.
I. demonstrate basic graphical user interface operations in a computer environment.
J. produce spreadsheets, documents and presentations by using basic to advanced software operations.

Certificate of achievement
Computer information systems
Project management

Students completing the program will be able to...
A. demonstrate basic graphical user interface operations in a computer environment.
B. produce spreadsheets, documents and presentations by using basic to advanced software operations.
C. apply the principles of the Project Management Institute (PMI) processes of project management.

Certificate of achievement
Computer information systems
Web graphics

Students completing the program will be able to...
A. demonstrate basic graphical user interface operations in a computer environment.
B. produce spreadsheets, documents and presentations by using basic to advanced software operations.
C. perform the duties demanded in any modern office environment.
D. able to prepare images for sharing and distribution.

Certificate of achievement
Computer information systems
Web technology

Students completing the program will be able to...
A. demonstrate basic graphical user interface operations in a computer environment.
B. produce spreadsheets, documents and presentations by using basic to advanced software operations.
C. plan and design web pages.

Certificate of accomplishment
Computer information systems
Database management

Students completing the program will be able to...
A. demonstrate basic graphical user interface operations in a computer environment.
B. apply database syntax, properties, operators, and functions.
Certificate of accomplishment
Computer information systems
Project management

Students completing the program will be able to...
A. demonstrate basic graphical user interface operations in a computer environment.
B. apply the principles of the Project Management Institute’s (PMI) processes of project management.

Certificate of accomplishment
Computer information systems
Web graphics

Students completing the program will be able to...
A. demonstrate basic graphical user interface operations in a computer environment.
B. able to prepare images for sharing and distribution.

Certificate of accomplishment
Computer information systems
Web technology

Students completing the program will be able to...
A. demonstrate basic graphical user interface operations in a computer environment.
B. plan and design web pages.

Certificate of achievement
Computer science
Advanced C++ programming

Students completing the program will be able to...
A. create computer programming solutions using C++ and OOP.
B. effectively apply inheritance and polymorphism in C++ class design.
C. overload common C++ operators for objects.

Certificate of achievement
Computer science
Advanced Java programming

Students completing the program will be able to...
A. create computer programming solutions using Java and GUI.
B. write multithreaded Java programs.

Certificate of achievement
Computer science
Computer architecture

Students completing the program will be able to...
A. create computer programming solutions using C++.
B. read and write programs written in x86 assembly language, and interface them with C++ programs.
Certificate of achievement  
Computer science  
Mobile and enterprise java programming  

Students completing the program will be able to...  
A. create networked computer programming solutions using Java.  
B. write Java programs involving sockets for TCP/IP network communications.  
C. write Java programs involving Enterprise Java Beans.

Certificate of achievement  
Computer science  
Program design  

Students completing the program will be able to...  
A. create computer programming solutions using C++ and the STL.  
B. write custom C++ template classes to create and manage data structures.  
C. evaluate algorithmic efficiency by “big oh”

Certificate of achievement  
Computer user support  

Students completing the program will be able to...  
A. apply the basic vocabulary of computer technology and information systems.  
B. use word processing, spreadsheet, presentation, and database software to communicate effectively and professionally.  
C. demonstrate basic mathematical skills in problem solving  
D. write instructions for using applications.

CONSTRUCTION – CONST  

Associate in science degree  
Construction  
Construction management specialization  

Certificate of achievement  
Construction Management  

Students completing the program will be able to...  
A. estimate materials cost (quantity survey).  
B. apply construction terminology.  
C. schedule sequences of construction projects.  
D. identify the effects of various governmental agencies involved in the construction industry on a construction project.  
E. interpret blueprints and specifications.

Associate in science degree  
Construction  
Construction and building inspection specialization  

Certificate of achievement  
Construction and building inspection  

Students completing the program will be able to...  
A. interpret the codes related to the construction industry.  
B. identify code-compliant construction in buildings.  
C. identify types of zoning used in a jurisdiction.  
D. write knowledgeable correction notices.  
E. apply construction terminology.  
F. identify the effects of various governmental agencies involved in the construction industry on a construction project.  
G. interpret blueprints and specifications.

Associate in science degree  
Construction  
Construction and supervision and superintendency specialization  

Certificate of achievement  
Construction and supervision and superintendency specialization  

Students completing the program will be able to...  
A. estimate materials cost (quantity survey).  
B. apply construction terminology.  
C. schedule sequences of construction projects.  
D. identify the effects of various governmental agencies involved in the construction industry on a construction project.  
E. interpret blueprints and specifications.  
F. utilize instruments used in surveying.
Certificate of achievement
Construction supervision and superintendency

Students completing the program will be able to...

A. estimate materials cost (quantity survey).
B. apply construction terminology.
C. schedule sequences of construction projects.
D. identify the effects of various governmental agencies involved in the construction industry on a construction project.
E. interpret blueprints and specifications.
F. utilize instruments used in surveying.
G. use oral and written communication skills in managing and supervising construction projects.

CULINARY ARTS – CULN

Associate in science degree
Hospitality studies
Baking and pastry

Students completing the program will be able to...

A. identify equipment and utensils used in baking and discuss proper use and care.
B. demonstrate an understanding of the properties and functions of various ingredients, and demonstrate proper scaling and measurement techniques.
C. evaluate quality standards in baking and pastry products in written and oral form.

Associate in science degree
Hospitality studies
Culinary arts

Students completing the program will be able to...

A. demonstrate an understanding of the criteria for proper service techniques used in the culinary industry.
B. demonstrate teamwork, planning, purchasing, production and service.
C. pursue opportunities available in California’s hospitality and culinary industry.

Certificate of achievement
Baking and pastry

Students completing the program will be able to...

A. explain and apply baking/pastry terms and procedures appropriately.
B. select, organize, and analyze ingredients used in baking and pastry production.
C. select, recognize, and utilize equipment and tools used in baking and pastry production.
D. scale and measure ingredients properly.
E. produce an array of bakery and pastry products.
F. evaluate quality standards in bakery and pastry products in written and oral form.

Certificate of achievement
Culinary arts

Students completing the program will be able to...

A. demonstrate the proper application of dry, moist, and combination cooking methods to a variety of food products.
B. demonstrate current Food Service sanitation procedures.
C. serve food according to professional industry standards.
D. calculate costs and apply procedures in order to run a cost effective food service establishment.
E. create menus that incorporate menu planning principles that maximize sales and profits.
F. produce a variety of bakery products using standard baking procedures and evaluate the products based on method, timing, appearance, texture, cell structure and overall eating quality.
G. demonstrate the ability to work as an effective member of a production team.
Certificate of achievement
Restaurant management

Students completing the program will be able to...
A. explain factors that determine quality food.
B. explain the theory of yield management as it relates to lodging operations.
C. present ideas and concepts in written and oral form.
D. calculate cost and apply procedures in order to run a cost effective food service establishment.

DANCE - DANCE

Associate in arts degree
Dance

Students completing the program will be able to...
A. demonstrate intermediate/advanced mastery of a variety of dance techniques utilizing proper alignment, axial and loco motor skills, and the ability to execute intermediate/advanced performance technique.
B. analyze the evolution of dance through the twentieth century, including the history of dance and other art forms.
C. demonstrate the ability to design a dance composition incorporating principles of technique, choreography, music, performance, staging, and aesthetic design.
D. describe the career and advanced educational opportunities available to them.

DENTAL ASSISTING – DENTL

Associate in science degree
Dental assisting

Certificate of achievement
Dental assisting

Students completing the program will be able to...
A. demonstrate the techniques used to take dental x-rays.
B. demonstrate the techniques used in infection control.
C. demonstrate the techniques used in applying pit and fissure sealants.

DENTAL HYGIENE – DENHY

Associate in science degree
Dental hygiene

Certificate of achievement
Dental hygiene

Students completing the program will be able to...
A. synthesize knowledge from all branches of learning to provide preventative, educational, collaborative, and therapeutic dental hygiene care for individuals and groups in a variety of settings.
B. develop a desire and ability to provide dental hygiene care applying the highest moral, ethical and legal principals including those outlined by the American Dental Hygienists’ Association and the American Dental Association.
C. function in the professional dental hygiene roles of the clinician, health promoter/educator and change agent.
D. develop and maintain professional competence founded in evidence based decision-making and continued education while promoting personal and professional growth.
E. promote client and community satisfaction with the quality of the dental hygiene education and care process provided by the program.

DENTAL LABORATORY TECHNOLOGY – DENTE

Associate in science degree
Dental laboratory technology

Students completing the program will be able to...
A. be employed as dental technicians in the commercial lab industry, as well as serve as in-house dental technicians in a dentist’s office.
B. demonstrate knowledge in the fabrication of a variety of dental inlays, onlays, and ceramic restorations.
C. comprehend and interpret dental terminology as well as the dentist’s prescriptions.
D. demonstrate skills in the development prostodontic appliances and perform denture relines and a variety of dental repairs.
E. demonstrate knowledge in cusp-to-fossae relationships and concepts of occlusions and malocclusions.
F. demonstrate knowledge in the manipulation of a variety of gypsum products such as plaster, die stone, yellow stone, and investment products such as high heat and low heat.
Certificate of achievement
Dental laboratory technology

Students completing the program will be able to...
A. seek positions as dental technicians in the commercial lab industry as well as in dentists offices as in-house dental technicians.
B. demonstrate knowledge in the fabrication of a variety of dental inlays, onlays and ceramic restorations.
C. comprehend and interpret dental terminology as well as the dentist prescriptions.
D. demonstrate skills in the development of prostodontic appliances and perform denture relines and a variety of denture repairs.
E. demonstrate knowledge in cusp-to-fossae relationships and concepts of occlusion and malocclusions.
F. demonstrate knowledge in the manipulation of a variety of gypsum products such as plaster, die stone, yellow stone and investment products (high heat) and (low heat).

Drama – Drama

Associate in arts degree
Technical theater

Certificate of achievement
Technical theater

Students completing the program will be able to...
A. exhibit the unique collaborative skills necessary to participate in a theater community.
B. develop the basic skills required in the craft of theater.
C. demonstrate the ability to articulate the creative process of theatrical tasks.

Early Childhood Education – ECE

Associate in science degree
Early childhood education

Students completing this program will be able to...
A. students completing the program will be able to identify developmentally appropriate activities for infants, toddlers and preschool age children.
B. students completing the program will be able to analyze the psychological, physical and cognitive influences on child development.
C. students completing the program will be able to apply the professional code of ethics.
D. students completing the program will be able to evaluate strategies to maximize the health, safety and nutrition of children in early childhood education programs.
E. students completing the program will be able to create a developmentally appropriate integrated curriculum.
F. students completing the program will be able to assess how socializing agents impact the lives of children and families.
G. students completing the program will be able to develop techniques which will create sensitivity for various biases.
H. students completing the program will be able to apply observation and assessments to create appropriate environments.
I. students completing the program will be able to apply positive guidance skills with young children.
J. demonstrate techniques for guiding adults working with young children.
K. demonstration of knowledge in a specialization area.
Certificate of achievement
Early childhood education
Site supervisor

Students completing the program will be able to...
A. identify developmentally appropriate activities for infants, toddlers and preschool age children.
B. analyze the psychological, physical and cognitive influences on child development.
C. apply the professional code of ethics.
D. evaluate strategies to maximize the health, safety and nutrition of children in early childhood education programs.
E. create a developmentally appropriate integrated curriculum.
F. assess how socializing agents impact the lives of children and families.
G. develop techniques which will create sensitivity for various biases.
H. apply observation and assessments to create appropriate environments.
I. apply positive guidance skills with young children.
J. identify current state licensing requirements.
K. analyze personal supervisory style.
L. apply ethical codes and licensing standards to practices and policies.
M. examine theory and methodology for effective supervision.

Certificate of accomplishment
Early childhood education
Associate teacher

Students completing the program will be able to...
A. identify developmentally appropriate activities for infants, toddlers and preschool age children.
B. analyze the psychological, physical and cognitive influences on child development.
C. apply the professional code of ethics.
D. create a developmentally appropriate integrated curriculum.

ELECTRICAL/ELECTRONICS TECHNOLOGY – ELECT/ELTRN

Associate in science degree
Electrical/electronics technology

Certificate of achievement
Electrical/electronics technology

Students completing the program will be able to...
A. solve electrical circuit problems using Ohm's law.
B. build and troubleshoot electrical/electronics circuits at an apprenticeship level.
C. program Programmable Logic Controllers (PLCs).

ENERGY SYSTEMS – ENSYS

Associate in science degree
Energy systems
Photovoltaic

Certificate of achievement
Energy systems
Photovoltaic

Students completing the program will be able to...
A. install a ground mount photovoltaic system.
B. install a roof mounted photovoltaic system
C. design a roof mounted photovoltaic system.

Associate in science degree
Energy systems
Solar thermal

Certificate of achievement
Energy systems
Solar thermal
Students completing the program will be able to...
A. install and configure flat panel solar thermal water systems.
B. install and configure evacuated tube solar thermal water systems.
C. troubleshoot and repair solar thermal water systems.

ENGINEERING AND ENGINEERING TECHNOLOGY – ENGIN

Associate in science degree
Civil design drafting technology

Certificate of achievement
Civil design drafting technology

Students completing the program will be able to...
A. use technical drafting principles to develop technical drawings.
B. interpret construction blueprints.
C. use geometric construction and descriptive geometry to solve geometric problems.
D. create 2-dimensional and 3-dimensional Computer Aided Drawings (CAD).
E. interpret global positioning data.
F. measure land forms using ground surveying equipment.
G. apply trigonometry to math problems.
H. apply the basic laws of physics to everyday situations.

Associate in science degree
Civil engineering

Students completing the program will be able to...
A. apply the skills and knowledge acquired to analyze issues, solve problems, and critically evaluate a proposal or a process.
B. use appropriate quantitative tools to answer scientific questions, represent data, and document scientific findings.
C. demonstrate effective communication with fellow team members, the public, and members of the scientific community, using written, oral, and visual communication methods.
D. safely and appropriately use standard laboratory or field equipment to make precise and reliable measurements.

Certificate of achievement
Civil drafting, CAD

Students completing the program will be able to...
A. apply civil drafting principles to interpret and develop civil engineering maps.
B. interpret construction blueprints.
C. create 2-dimensional and 3-dimensional Computer Aided Drawings (CAD).
D. interpret global positioning data.
E. measure land forms using ground surveying equipment.
F. use general computer software such as Microsoft Word and Excel.
G. apply trigonometry to math problems.

**Certificate of accomplishment**
Computer aided drafting and digital media for engineering and architecture

**Students completing the program will be able to...**
A. create 2-dimensional and 3-dimensional Computer Aided Drawings (CAD).
B. interpret construction blueprints and architectural plans (with Option A: civil engineering emphasis).
C. calculate data collected from land surveying (with Option A: civil engineering emphasis).
D. interpret simple technical drawings (with Option B: manufacturing emphasis).
E. construct 3-Dimensional models using parametric software (with Option C: CAD design emphasis).

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**ENGLISH – ENGL**

**Associate in arts degree**
English

**Students completing the program will be able to...**
A. demonstrate knowledge of and familiarity with the methods of interpreting literature across genres.
B. assess, evaluate, and analyze ideas expressed in text or in spoken language.
C. create (write or present) coherent arguments that evidence clear prose and synthesize diverse bodies of knowledge.
D. conceptualize, write, workshop, present for feedback, revise and edit an original text.

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**ENVIRONMENTAL SCIENCE – ENVSC**

**Associate in science degree**
Environmental science

**Students completing the program will be able to...**
A. differentiate between different biotic and abiotic components of the environment.
B. explain and analyze man-made impacts on the environment.
C. apply the scientific method for environmental analysis.
D. explain, illustrate and analyze chemical bonds and reactions.
E. apply environmental science concepts and analytical procedures in various fields.

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**FRENCH – FRNCH**

**Associate in arts degree**
French

**Certificate of achievement**
French

**Students completing the program will be able to...**
A. comprehend a spoken dialogue in the target language.
B. identify the present, past and future tenses in a written paragraph.
C. interpret cultural behavior.

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**GEOGRAPHY – GEOG**

**Associate in arts degree**
Social/cultural geography

**Students completing the program will be able to...**
A. describe the spatial organization of the world’s peoples, nations, cultural environments.
B. compare and contrast the levels of economic development and their underlying environmental and cultural factors.
C. demonstrate a global view with appreciation for diverse cultures and societies.

**Associate in science degree**
Geographic information systems/Global positioning system

**Certificate of achievement**
Geographic information systems/Global positioning system

**Certificate of accomplishment**
Geographic information systems/Global positioning system

**Students completing the program will be able to...**
A. analyze the inter-disciplinary applications of GIS, GPS, and remote sensing.
B. synthesize data from various sources and different formats for spatial analyses.
C. apply spatial tools and techniques in a research or work environment.
Associate in science degree  
Meteorology

Students completing the program will be able to...
A. describe the structure and properties of the atmosphere and atmospheric circulation systems.
B. develop and explain a forecast in the short to medium time range.
C. demonstrate the ability to apply atmospheric studies to interdisciplinary and practical applications for commercial and public needs.

Associate in science degree  
Physical geography

Students completing the program will be able to...
A. demonstrate proficiency in the use of field data collection and mapping techniques.
B. compare and contrast the interactions between the natural environment and human activities.
C. demonstrate a grounding in the modern technical skills of the discipline, including computer cartography, geographic information systems and global positioning systems.

GEOLOGY – GEOL

Associate in science degree  
Geology

Students completing the program will be able to...
A. identify, describe, and classify earth materials, formations, and structures and interpret them in terms of geologic processes.
B. synthesize information from a variety of physical science disciplines to solve geologic problems.
C. develop and demonstrate analytical and critical thinking skills required for transfer into a four-year geologic science program.

GERMAN – GRMAN

Certificate of achievement  
German

Students completing the program will be able to...
A. comprehend a spoken dialogue in the target language.
B. identify the present, past and future tenses in a written paragraph.
C. interpret cultural behavior.

HEALTH SCIENCE – HSCI

Associate in science degree  
Health education

Students completing the program will be able to...
A. apply a multi-dimensional approach to health that incorporates the study of social, behavioral and physiological sciences.
B. identify risk factors for disease and disability.
C. analyze the psychological, physical, social, sexual, and environmental influences on health and wellness.
D. demonstrate behavior-changing techniques to maximize health and wellness.
E. evaluate information and its sources by articulating and applying fundamental evaluation and selection criteria.

HORTICULTURE – HORT

Certificate of achievement  
Arboriculture

Students completing the program will be able to...
A. understand and implement safety procedures.
B. use field examinations to determine plant problems.
C. diagnose plant suitability for a given site.
D. recognize plant species and the characteristics of a given species.

Certificate of achievement  
Horticulture foundations

Students completing the program will be able to...
A. apply knowledge of plant selection and care to the landscape or nursery setting.
B. assess environmental factors such as soil and light conditions and microclimates that impact plant success.
C. recognize common plant problems and needs and apply effective remedies.
D. apply sustainability principles in the nursery and landscape settings.

Certificate of achievement  
Landscape construction and management

Students completing the program will be able to...
A. prepare, model and contour ground prior to planting.
B. stake and plant a tree.
C. plant shrubs from a design plan.
D. design and plant a winter or spring bedding scheme.
E. recognize the features and use of the following displays: annuals, perennials, and bulbs.
F. establish an effective management program.

Certificate of achievement
Landscape architecture and design I

Students completing the program will be able to...
A. develop fundamental designer and client communication techniques.
B. perform a site analysis and inventory.
C. recognize and develop a personal landscape design process.
D. create presentations through graphic sketching and drafting.
E. identify plant and non-plant material suitable for specific site design.
F. produce a portfolio and related documents necessary to enter the marketplace.

Certificate of achievement
Landscape architecture and design II

Students completing the program will be able to...
A. develop a planning sequence for a landscape site.
B. prepare and present drawings and construction documents.
C. understand the relationships between landscape designer, suppliers, contractors and city/county entities.
D. know and understand the uses and applications of design techniques and equipment.
E. apply design skills to a given landscape site.

Certificate of achievement
Nursery level I
Retail

Students completing the program will be able to...
A. develop "soft" skills required for customer interactions.
B. understand the principle of "tie-in" sales.
C. recognize the need to stage plant species.
D. develop procedures to ensure the health of plants in a nursery setting.
E. know the applications of plant species to specific landscape needs.
F. know and understand the landscape design and construction process.

Certificate of achievement
Nursery level II
Wholesale

Students completing the program will be able to...
A. recognize various plant species and the characteristics of those species.
B. understand basic and advanced plant propagation techniques.
C. apply accepted nursery procedures for the operation of a wholesale nursery.
D. understand plant biology and taxonomy and the importance of plant patents.

HUMANITIES – HUMAN

Associate in arts in letters and science degree
Area of emphasis
Humanities

Students completing the program will be able to...
A. use their critical thinking skills to analyze and evaluate both formally and contextually, a variety of creative works and literary documents.
B. compare and contrast the historic meaning and impact of works selected from the various arts, and from philosophic and religious literature.
C. recognize and explain the integration of arts and ideas in selected cultural, historical, and thematic contexts.
D. demonstrate their ability to articulate clearly in oral and written form objective analysis of major works from the various arts, and from philosophic and religious literature.

ITALIAN – ITAL

Associate in arts degree
Italian

Certificate of achievement
Italian

Students completing the program will be able to...
A. comprehend a spoken dialogue in the target language.
B. identify the present, past and future tenses in a written paragraph.
C. interpret cultural behavior.
JAPANESE – JAPAN

Associate in arts degree
Japanese
Certificate of achievement
Japanese

Students completing the program will be able to...
A. comprehend a spoken dialogue in the target language.
B. identify the present, past and future tenses in a written paragraph.
C. interpret cultural behavior.

KINESIOLOGY THEORY – KINES

Associate in science degree
Fitness instruction

Students completing the program will be able to...
A. conduct assessment of personal fitness levels.
B. develop a conditioning program to improve conditioning levels utilizing the periodization model.
C. design a conditioning program to meet the unique needs of special populations.
D. take the NASIIV, AFAA or other national certification exam.

Certificate of achievement
Coaching

Students completing the program will be able to...
A. develop practice plans, analyze strategy and teach techniques specific to a chosen sport.
B. incorporate concepts of an athlete's psychological and physical health to improve performance.
C. qualify for employment as an effective coach of youth, high school, and/or adult sports.

Certificate of achievement
Group exercise instruction

Students completing the program will be able to...
A. conduct assessments to identify static and dynamic postural distortions.
B. develop multi-level program design to improve fitness levels of various phase groups of the general population.
C. design a multi-level fitness session utilizing one or more modalities that are appropriate for a phase of the optimum performance training (OPT) model.
D. complete an AFAA or other nationally recognized certifying agency group strength training workshop.

Certificate of achievement
Personal training

Students completing the program will be able to...
A. conduct assessment of personal fitness levels.
B. develop a conditioning program to improve conditioning levels utilizing the periodization model.
C. design a conditioning program to meet the unique needs of special populations.
D. take the NASIV1, AFAA or other national certification exam.

LIBRARY STUDIES – L AND LS

Associate in science degree
Library technology
Certificate of achievement
Library technology

Students completing the program will be able to...
A. explain library fundamental principles including intellectual freedom, open access, diversity, and patron privacy and confidentiality.
B. apply knowledge and skills gained through coursework to perform library technician-level tasks.
C. describe the characteristics of libraries and the roles of libraries in a diverse, multicultural, and democratic society, and how these needs can be met.
D. apply the basic principles and standardized systems of ordering, cataloging, classifying, processing, and maintaining library materials and resources.
E. demonstrate the workplace communication skills necessary to successfully interact with users and staff in the library and other information services.
F. identify and use the technologies found in the library and other information services.
G. analyze information critically to draw conclusions and/or solve problems when working with patrons, materials, and technology.

MATHEMATICS – MATH

Associate in science in mathematics for transfer degree

Students completing the program will be able to...
A. solve problems in differential and integral calculus, both single and multivariable.
B. recognize, explain, and apply basic techniques of mathematical proof.
C. utilize skills from calculus and post-calculus mathematics to solve applied mathematical problems.

MEDICAL LABORATORY TECHNOLOGY – MLT

Associate in science degree
Medical laboratory technology
Certificate of achievement
Medical laboratory technology

Students completing the program will be able to...
A. complete of all academic and clinical requirements will enable the students to analyze and evaluate medical laboratory science theory to achieve a passing score on the American Society for Clinical Pathology (ASCP) board of certification exam.
B. demonstrate conceptual knowledge and perform basic laboratory techniques in the biomedical field; integrate patient data for evaluation of validity of laboratory test results to problem solve test discrepancy.
C. articulate professionally, ethically and competently with all stakeholders in the health care setting regarding patient care.

MUSIC – MUSIC

Associate in arts degree
Music

Students completing the program will be able to...
A. perform music with technical facility and artistry on his/her voice or choice of instrument as a soloist and as a member of an ensemble.
B. demonstrate practical musical literacy, both theoretical and historical.
C. listen to music with practical awareness-, theoretical, critical, and historical.

Associate in arts degree
Music industry studies
Certificate of achievement
Music industry studies

Students completing the program will be able to...
A. produce recorded music projects.
B. demonstrate professional behaviors required in the music industry.
C. apply vocabulary and demonstrate processes that are used in the protection of intellectual property rights.
PHILOSOPHY – PHILO

Associate in arts degree
Philosophy

Certificate of achievement
Philosophy

Students completing the program will be able to...
A. use their critical thinking skills to analyze and evaluate both formally and informally, arguments and positions taken regarding various philosophical topics.
B. compare and contrast various philosophical perspectives, both historically and in the context of larger philosophical texts.
C. recognize and explain the integration of philosophical perspectives and ideas in selected cultural, historical, and thematic contexts.
D. demonstrate their ability to articulate clearly in oral and written form an objective analysis of major works from the various philosophic and religious literatures.

PLUMBING – PLUMB

Associate in science degree
Plumbing

Certificate of achievement
Plumbing

Students completing the program will be able to...
A. discuss the role the plumber plays in a safe work site.
B. apply mathematical formulae used in plumbing.
C. demonstrate knowledge of the hazards of cross connection in the potable water system.
D. use the proper method to install medical gas piping.
E. explain the responsibilities of the many agencies, departments, and specific districts that require variances or permits for construction.
F. demonstrate advanced worksite operations including T-drilling, hot taps, and freeze pipe installation.

PSYCHOLOGY – PSYCH

Associate in arts in psychology for transfer degree

Students completing the program will be able to...
A. identify the major theoretical orientations in psychology and demonstrate knowledge of basic psychological concepts regarding behavior and mental processes.
B. demonstrate knowledge of research methods, ethical considerations in conducting research, and effective use of the American Psychological Association (APA) style in presenting information.
C. utilize critical thinking skills to analyze, evaluate, and make decisions concerning complex contemporary issues in psychology.
D. recognize the complexity of social, cultural, and international diversity.
E. apply psychological principles to the development of interpersonal, occupational, and social skills, and life-long personal growth.
F. demonstrate understanding of major theories, concepts, and research findings in selected content areas of psychology, such as lifespan development, personality and social psychology, neuroscience, and abnormal psychology.
RUSSIAN – RUSS
Certificate of achievement
Russian
Students completing the program will be able to...
A. comprehend a spoken dialogue in the target language
B. identify the present, past and future tenses in a written paragraph.
C. interpret cultural behavior.

SOCIOLOGY – SOCIO
Associate in arts in sociology for transfer
Students completing the program will be able to...
A. define and apply sociological concepts.
B. identify, explain and provide possible solutions to social problems.
C. identify and apply the major theoretical paradigms, functionalist, conflict and interactionist perspectives to analyze social and cultural issues.
D. demonstrate knowledge of research methods and ethical considerations in conducting research.
E. utilize critical thinking skills to analyze and evaluate complex social issues.
F. utilize data to study social phenomena.
G. make connections between individuals’ lives, their biographies and their social context.

SPANISH – SPAN
Associate in arts degree
Spanish
Certificate of achievement
Spanish
Students completing the program will be able to...
A. comprehend a spoken dialogue in the target language.
B. identify the present, past and future tenses in a written paragraph.
C. interpret cultural behavior.

SPECIAL EDUCATION – SPEDU
Associate in arts degree
Special education paraeducator/instructional assistant
Certificate of achievement
Special education paraeducator/instructional assistant
Students completing the program will be able to...
A. analyze state and federal legislation pertaining to general and special education.
B. use a variety of instruction strategies and materials that respect individual differences.
C. understand how culture affects relationships among children, families, and schooling.

STEAMFITTING – STMFT
Associate in science degree
Steamfitting
Students completing the program will be able to...
A. discuss safety harness practices during rigging.
B. apply mathematical formulas for calculating travel on a spool.
C. demonstrate knowledge of using a band saw.
D. use proper method in fabricating a copper spool.
E. explain the responsibilities of a journey person with regards to training an apprentice on the job.
F. demonstrate use of tubing benders.
Certificate of achievement
Steamfitting
Students completing the program will be able to...
A. demonstrate proper isometric drawing technique.
B. apply mathematical formula for calculating load weight on pipe.
C. use the proper method to cut a steel plate, using an OXY/ACT torch.
D. explain proper brazing technique for copper.
E. demonstrate proper knot tying.
F. demonstrate proper preparation for a beveled coupon.
# PROGRAM AND COURSE DESCRIPTIONS

## ACCOUNTING

See Business Accounting - BUSAC

## ADDICTION STUDIES – ADS

Diablo Valley College is approved by the California Board of Registered Nurses for continuing education credits. All ADS courses can be used. (Provider # CEP 7992).

Tish Young, dean  
Biological and Health Sciences Division  
Physical Sciences Building, Room 263

### Possible career opportunities

Addiction studies students develop an in-depth understanding of the addiction process and how to motivate someone towards positive change. The addiction counseling certificate prepares students for a career as a substance abuse counselor, community services worker, or an addiction/prevention/intervention educator.

### Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this chapter of this catalog prior to the course and program descriptions and on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

### Associate in science degrees

Addiction counseling  
Addiction studies

### Certificates of achievement

Addiction counseling  
Addiction studies

### Associate in science degree - Addiction counseling

The associate degree program in addiction counseling provides students with the academic preparation needed for employment in the addiction counseling field. Earning this degree may also facilitate the student's transfer to a four-year college or university. Students who wish to transfer must consult with program faculty and college counselors to insure that the requirements for transfer to appropriate institutions are met. To earn an associate in science degree, students must complete each course used to meet a major requirement with a “C” grade or higher. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

Upon completing this degree, a student may apply for any of the state recognized professional credentials offered by the following organizations: California Association of Alcoholism and Drug Abuse Counselors (CAADAC), California Association of Alcohol and Drug Educators (CAADE), and the California Association of Addiction Recovery Resources (CAARR). Each of these credentials has additional testing and/or field practicum hours required, but all of the educational coursework is completed when you finish the addiction counseling program at DVC.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS-102</td>
<td>3</td>
</tr>
<tr>
<td>ADS-151*</td>
<td>1.5</td>
</tr>
<tr>
<td>ADS-152*</td>
<td>3</td>
</tr>
<tr>
<td>ADS-154*</td>
<td>3</td>
</tr>
<tr>
<td>ADS-155</td>
<td>3</td>
</tr>
<tr>
<td>ADS-168*</td>
<td>3</td>
</tr>
<tr>
<td>ADS-170</td>
<td>3</td>
</tr>
<tr>
<td>ADS-171*</td>
<td>3</td>
</tr>
<tr>
<td>ADS-172*</td>
<td>5.5</td>
</tr>
<tr>
<td>HSCI-127</td>
<td>3</td>
</tr>
</tbody>
</table>

`*The above courses have specific prerequisites. See course descriptions for details.`

### Associate in science degree - Addiction studies

The associate degree program in addiction studies provides students with a broad general education while integrating an in-depth exploration of the skills and knowledge to work with people who have addiction problems. Earning this degree will contribute significantly to those who want to work in occupational fields such as social services, criminal justice, youth services, education, clergy, nursing, and human resources. Earning this degree may also facilitate the student’s transfer to a four-year college or university. Students who wish to transfer must consult with program faculty and college counselors to insure that the requirements for transfer to appropriate institutions are met. Certain courses may satisfy..."
both major and general education requirements; however, the units are only counted once. To earn an associate in science degree, students must complete each course used to meet a major requirement with a “C” grade or higher.

**major requirements**

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<thead>
<tr>
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<tbody>
<tr>
<td>ADS-102 Introduction to Motivational Interviewing Skills</td>
<td>3</td>
</tr>
<tr>
<td>ADS-152* Relapse Prevention</td>
<td>3</td>
</tr>
<tr>
<td>ADS-154* Dual Disorders</td>
<td>3</td>
</tr>
<tr>
<td>ADS-155 Diverse Communities and Social Services</td>
<td>3</td>
</tr>
<tr>
<td>ADS-170 Introduction to Codependency and Family Issues</td>
<td>3</td>
</tr>
<tr>
<td>HSCI-127 Drugs, Health and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 18

*The above courses have specific prerequisites. See course descriptions for details.

**Certificate of achievement - Addiction counseling**

The addiction counseling certificate provides students with the academic preparation needed for employment in the addiction counseling field. Upon completing this certificate, a student may apply for any of the state recognized professional credentials offered by the following organizations: California Association of Alcoholism and Drug Abuse Counselors (CAADAC), California Association of Alcohol and Drug Educators (CAADE), and the California Association of Addiction Recovery Resources (CAARR).

Each of these certificates has additional testing and/or field practicum hours required, but all of the educational coursework is completed when you finish the addiction counseling certificate at DVC.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are primarily available in the evening and late afternoon. Although students may start during any term and progress at their own pace, completion of the certificate will take approximately four terms.

**required courses**

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</tr>
<tr>
<td>ADS-155 Diverse Communities and Social Services</td>
<td>3</td>
</tr>
<tr>
<td>ADS-170 Introduction to Codependency and Family Issues</td>
<td>3</td>
</tr>
<tr>
<td>HSCI-127 Drugs, Health and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 33.5

*The above courses have specific prerequisites. See course description for details.

**Certificate of achievement - Addiction studies**

The addiction studies certificate is for students who want a specialized focus in addiction, treatment and recovery but are not preparing to become an addiction counselor. This certificate may be useful for teachers, human services personnel, or community service personnel who want to have a deeper understanding of the addiction process.

Important note: Once this certificate is completed, if you choose to continue in the addiction studies program, you may apply these units towards the more in-depth addiction counseling certificate. When a student has enough units to earn either certificate, they need to fill out an “application for a certificate” form during the term in which they will complete the units. This form must be picked up and turned in to the Admissions and Records Office. If the form is not filled out, a student will not receive the certificate from the college even if they have completed all the units.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are primarily available in the evening and late afternoon. Although students may start during any term and progress at their own pace, completion of the certificate requirements will take a minimum of two terms.

**required courses**

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<td>3</td>
</tr>
<tr>
<td>ADS-155 Diverse Communities and Social Services</td>
<td>3</td>
</tr>
<tr>
<td>ADS-170 Introduction to Codependency and Family Issues</td>
<td>3</td>
</tr>
<tr>
<td>HSCI-127 Drugs, Health and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 18

*The above courses have specific prerequisites. See course description for details.

**ADS-102 Introduction to Motivational Interviewing Skills**

3 units SC

* 54 hours lecture per term
* Recommended: Eligibility for ENGL-122 or equivalent

This course provides an overview of motivational interviewing and the stages of change. Essential communication and charting skills needed for working in the substance abuse and chemical dependency field will be explored. CSU
 ADS-150  Topics in Addiction Studies  
  .3-4 units SC  
  • Variable hours  
  A supplemental course in addiction studies to provide a study of current concepts and problems in addiction studies and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

 ADS-151  Ethical and Legal Concerns for ADS Paraprofessionals  
  1.5 units SC  
  • 27 hours lecture per term  
  • Prerequisite: ADS-102 (may be taken concurrently) and HSCI-127 or equivalents  
  • Recommended: Eligibility for ENGL-122 or equivalent  
  This course is designed to familiarize ADS paraprofessionals with the legal and ethical issues involved in alcohol/drug counseling. CSU

 ADS-152  Relapse Prevention  
  3 units SC  
  • 54 hours lecture per term  
  • Prerequisite: HSCI-127 or equivalent  
  This course examines the research that describes the progressive and predictable warning signs of relapse in addicts and alcoholics. Students will study and practice the skills and techniques used to develop a relapse prevention program. CSU

 ADS-154  Dual Disorders  
  3 units SC  
  • 54 hours lecture per term  
  • Prerequisite: HSCI-127 or equivalent  
  This course addresses the common preexistent or concurrent psychiatric disorders that may surface in the area of substance abuse. The relationships between mental health and substance abuse facilities will be examined. CSU

 ADS-155  Diverse Communities and Social Services  
  3 units SC  
  • 54 hours lecture per term  
  • Recommended: Eligibility for ENGL-122 or equivalent  
  • Note: Meets the State Department of Social Services licensing requirement for DDS III, Program and Curriculum Development  
  This course investigates the impact of health status, lifestyle/behavior patterns and personal and cultural beliefs, on individual and group access to social services. Groups studied will include Asian Americans, African Americans, Hispanic/Latino Americans, Native Americans, and Pacific Rim cultures, among others. The course will examine in detail effective strategies for cross and intercultural work in social services, with particular emphasis on addiction prevention, intervention, and treatment services. CSU

 ADS-158  Group Process and Leadership  
  3 units SC  
  • 54 hours lecture per term  
  • Prerequisite: ADS-102 and HSCI-127 or equivalents  
  • Recommended: ADS-151 and 170 or equivalents  
  This course explores the theory and practice of group process, group dynamics, and group facilitation. Students will study and develop the basic observation and communication skills needed for leading support groups for people with histories of substance abuse, codependence, and other addictive behaviors. Administrative tasks related to group leadership responsibilities will also be examined. CSU

 ADS-170  Introduction to Codependency and Family Issues  
  3 units SC  
  • 54 hours lecture per term  
  • Recommended: ADS-101 and eligibility for ENGL-122 or equivalents  
  This course is an examination of biological, psychological, and sociological issues relevant to family functioning, with a focus on chemically dependent families. Included in this is a close examination of codependency and family system variables, such as family structure, communication, and emotional closeness. CSU

 ADS-171  ADS-Field Work I  
  5.5 units SC  
  • 54 hours lecture/144 hours laboratory per term  
  • Prerequisite: ADS-102, HSCI-127 and eligibility for ENGL-122 or equivalents  
  • Note: Formerly a seven unit block consisting of ADS-169, CARER-130, and COOP-170A. It is highly recommended that a student have at least 10 units completed in the addiction studies program before entering the field work class.  
  This is the first clinical course required for the addiction counseling certificate. Students will have the opportunity to work in community clinical settings that serve clients with substance abuse problems. They will gain first-hand experience and develop clinical competency in assessment, treatment planning, group facilitation, record-keeping, and general agency procedures. The course will consist of seminar and clinical experiences. Students will have supervision on-site, and then debrief their experiences with fellow students, sharing the learning as well as the challenges of providing substance abuse services in a community clinic setting. Additionally students will explore possible locations for employment and interviewing skills. They will also develop skills in treatment planning and understanding all the necessary requirements for state and other professional certification. CSU
ADS-172  ADS-Field Work II
5.5 units  SC
• 54 hours lecture/144 hours laboratory per term
• Prerequisite: ADS-171 or equivalent
• Co-requisite: ADS-151 or equivalent (may be taken previously)
• Note: Formerly a seven unit block consisting of ADS-169, CARER-130, and COOP-170A

This is the second clinical course required for the addiction counseling certificate of achievement. Students will have the opportunity to work in community clinical settings that serve clients with substance abuse problems. They will gain first-hand experience and develop clinical competency in group facilitation, case-management, and system approaches to addiction treatment in a community setting. This course will consist of seminar and clinical experiences. Students will have supervision on-site, and then debrief their experiences in class, sharing both the learning and the challenges. Students will also prepare for state certification and employment. CSU

ADS-299  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ADMINISTRATION OF JUSTICE – ADJUS

Obed Vazquez, interim dean
Social Sciences Division
Faculty Office Building, Room 136

Possible career opportunities
Law enforcement study prepares students for a career as a police officer, sheriff’s deputy, California Highway Patrol Officer (CHP), Federal Bureau of Investigation Agent (FBI), Drug Enforcement Administration Agent (DEA), Secret Service Agent, U.S. Border Patrol Agent, Fish and Game Warden, or Customs Agent. Corrections study prepares students for a career as a correctional officer, parole officer, probation officer, youth counselor, prison warden, or criminologist. A pre-law specialization prepares students for further study towards the advanced degree required to become a lawyer, district attorney, public defender, defense lawyer, judge or bailiff.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this chapter of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Administration of justice

Certificate of achievement
Administration of justice

Certificates of accomplishment
Administration of justice - Community relations specialist
Administration of justice - Correctional specialist
Administration of justice - Crime scene investigator
Administration of justice - Criminal law specialist
Administration of justice - Juvenile counseling
Administration of justice - Patrol specialist

Associate in science degree - Administration of justice

Students wishing to pursue a career in the field of law enforcement, crime scene investigation, probation, parole, corrections, private security, law, criminal behavior studies, rehabilitation programs or the like should consider this two-year program. All students planning to seek employment with a government or private agency after they graduate should speak with a faculty member of the department in order to review the special requirements of the various agencies.

To earn an associate in science degree, students must complete each required course with a “C” grade or higher. Degree requirements can be completed by attending classes in the day, the evening, or both. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

major requirements units
ADJUS-120 Introduction to the Administration of Justice ...................................................... 3
ADJUS-121 Criminal Law .................................................................................. 3
ADJUS-122 Criminal Procedure ......................................................................... 3
ADJUS-124 Elements of Corrections ................................................................. 3
ADJUS-130 Cultural Diversity in Criminal Justice .................................... 3
ADJUS-221 Criminal Evidence ............................................................................... 3
ADJUS-284 Interviewing and Counseling ............................................................. 3
Certificate of achievement - Administration of justice

Students wishing to pursue a career in the field of law enforcement, crime scene investigation, probation, parole, corrections, private security, law, criminal behavior studies, rehabilitation programs or the like should consider this two-year program. All students planning to seek employment with a government or private agency after they graduate should speak with a faculty member of the department in order to review the special requirements of the various agencies.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Certificate requirements can be completed by attending classes in the day, the evening, or both.

required courses
ADJUS-120 Introduction to the Administration of Justice........................................... 3
ADJUS-121 Criminal Law.......................................................... 3
ADJUS-122 Criminal Procedure...................................................... 3
ADJUS-124 Elements of Corrections.................................................. 3
ADJUS-130 Cultural Diversity in Criminal Justice................................. 3
ADJUS-221 Criminal Evidence ..................................................... 3
ADJUS-284 Interviewing and Counseling............................................ 3
ADJUS-285 Gangs and Threat Groups in America................................. 3
ADJUS-298 Physical Evidence and the Crime Laboratory.......................... 4
ADJUS-298 Independent Study...................................................... 0.5-3

plus at least 7-9 units from:
ADJUS-129 Gangs and Threat Groups in America......................... 3
ADJUS-203 Physical Evidence and the Crime Laboratory.................. 4
ADJUS-222 Criminal Investigation.................................................. 3
ADJUS-230 Juvenile Procedures..................................................... 3
ADJUS-260 Patrol Procedures........................................................ 3
ADJUS-270 Personal Self-Defense and Firearms............................... 2
ADJUS-280 Probation and Parole................................................... 3
ADJUS-285 Information Systems.................................................... 3
ADJUS-298 Independent Study ...................................................... 0.5-3

total minimum required units 28

Certificate of accomplishment - Administration of justice - Community relations specialist

This certificate prepares students for entry-level careers either as law enforcement or civilian positions that require a better than average understanding of multicultural issues as they impact the community and the criminal justice system. Anyone contemplating a career in the criminal justice field should consider taking these courses. Citizens active in their community such as teachers, activists, political and social leaders, and members of cultural organizations will find this series of courses an excellent resource in better understanding the issues that impact their communities.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may be completed by a combination of day, evening or weekend courses listed in the Administration of Justice (AJ) Program. Successful completion of the certificate of accomplishment requirements also counts towards the completion of the AJ certificate of achievement.

required courses
ADJUS-120 Introduction to the Administration of Justice...................... 3
ADJUS-130 Cultural Diversity in Criminal Justice............................. 3
ADJUS-139 Gangs and Threat Groups in America.............................. 3
ADJUS-280 Probation and Parole................................................... 3
ADJUS-284 Interviewing and Counseling............................................ 3

plus at least 3 units from:
ADJUS-285 Gangs and Threat Groups in America................................. 3
ADJUS-287 Administrative Procedures.............................................. 3
ADJUS-298 Independent Study ...................................................... 0.5-3

total minimum required units 12

Certificate of accomplishment - Administration of justice - Correctional specialist

This certificate prepares students for entry-level careers in corrections such as working in prisons, jails, probation officers, parole agent, and counselors working with adult offenders. Completion of this certificate will greatly improve the opportunity for employment in these fields.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may be completed by a combination of day, evening or weekend courses listed in the Administration of Justice (AJ) Program. Successful completion of the certificate of accomplishment requirements also counts towards the completion of the AJ certificate of achievement.
Certificate of accomplishment - Administration of justice - Crime scene investigator
This certificate prepares students for entry-level careers as crime scene investigators, criminal analysts, and fingerprint examiners, criminalists in limited areas of expertise, crime scene photographers, private security investigators, and criminal investigators. It also is a foundation for those students who wish to pursue advanced careers as criminal profilers or advanced criminalists. Completion of this certificate will greatly improve the opportunity for employment.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may be completed by a combination of day, evening or weekend courses listed in the Administration of Justice (AJ) Program. Successful completion of the certificate of accomplishment requirements also counts towards the completion of the AJ certificate of achievement.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJUS-120 Introduction to the Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-124 Elements of Corrections</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-139 Gangs and Threat Groups in America</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-284 Interviewing and Counseling</td>
<td>3</td>
</tr>
<tr>
<td><strong>total minimum required units</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Certificate of accomplishment - Administration of justice - Criminal law specialist
This certificate prepares a student for entry-level careers in many areas of the criminal justice system where a basic understanding of statutory and procedural criminal law is necessary. Examples of these positions would be law enforcement officers, lawyers, investigators, correctional personnel and private and corporate security. Anyone choosing a career in the criminal justice field should complete this certificate as a minimum.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may be completed by a combination of day, evening or weekend courses listed in the Administration of Justice (AJ) Program. Successful completion of the certificate of accomplishment requirements also counts towards the completion of the AJ certificate of achievement.

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<td>ADJUS-122 Criminal Procedure</td>
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<td>ADJUS-221 Criminal Evidence</td>
<td>3</td>
</tr>
<tr>
<td><strong>total minimum required units</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Certificate of accomplishment - Administration of justice - Patrol specialist
This certificate prepares students for entry-level careers as law enforcement officers in federal, state, and local agencies as well as private and corporate security. After completing this certificate, students contemplating enrolling in the POST academies will have a solid foundation that will help to ensure academy success. Students entering private security will have much more training than is required by state law. Completion of this certificate will also give the student a greatly improved opportunity for employment.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may be completed by a combination of day, evening or weekend courses listed in the Administration of Justice (AJ) Program. Successful completion of the certificate of accomplishment requirements also counts towards the completion of the AJ certificate of achievement.

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<td>ADJUS-284 Interviewing and Counseling</td>
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<tr>
<td><strong>total minimum required units</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>
required courses | units
--- | ---
ADJUS-120 Introduction to the Administration of Justice | 3
ADJUS-121 Criminal Law | 3
ADJUS-122 Criminal Procedure | 3
ADJUS-124 Elements of Corrections | 3
ADJUS-125 Report Preparation for Criminal Justice | 3
ADJUS-126 Gangs and Threat Groups in America | 3
ADJUS-222 Criminal Investigation | 3
ADJUS-260 Patrol Procedures | 3
ADJUS-270 Personal Self-Defense and Firearms | 2

total minimum required units | 17

ADJUS-120 Introduction to the Administration of Justice
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
This course addresses the history and philosophy of justice as it evolved throughout the world. It addresses in detail a) the American system of justice and the various subsystems, i.e., the police, the courts, corrections, etc. b) the roles and interrelationships of criminal justice agencies c) concepts of crime accusations, punishments, and rehabilitation and d) issues pertaining to ethics, education, and training for participants in the criminal justice system. C-ID AJ 110, CSU, UC

ADJUS-121 Criminal Law
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
This course involves a detailed analysis of a) the historical development and philosophy of American law b) statutory law, including classifications, definitions and legality c) case and constitutional law as it applies to situations and individuals in the justice system and d) methodology and concepts of law and their role as a social force. The course emphasizes California criminal statutes. C-ID AJ 120, CSU, UC

ADJUS-122 Criminal Procedure
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
This course examines legal processes from pre-arrest, arrest through trial, sentencing and correctional procedures; a review of the history of case and common law; conceptual interpretations of law as reflected in course decisions; a study of case law methodology and case research as the decisions impact upon the procedures of the justice system. California law and procedures are emphasized. C-ID AJ 122, CSU

ADJUS-124 Elements of Corrections
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is an introduction to major types of criminal behavior, patterns of career offenders, causal factors of crime and delinquency, and methods used in dealing with violators in the justice system. Emphasis will be placed on changing roles in corrections as practiced by law enforcement, courts, and correctional agencies. C_ID AJ 200, CSU

ADJUS-125 Report Preparation for Criminal Justice
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
This course emphasizes the practical aspects of gathering, organizing, and preparing written reports for law enforcement and correctional activities on local, state, and federal levels. It will cover the techniques of communicating facts, information, and ideas effectively in a simple, clear, and logical manner for various types of criminal justice system reports, letters, memoranda, directives and administrative reports. Students will gain practical experience in note-taking, report writing, and presenting testimony in court. CSU

ADJUS-130 Cultural Diversity in Criminal Justice
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
A theoretical and conceptual overview of multicultural concepts and issues, including those related to gender, age, and sexual preference; an application of those concepts and issues to the three public safety disciplines (Law Enforcement, Judiciary, and Corrections); identification of problems related to increasingly aware diverse population; and examination of strategies to overcome those problems, particularly in relation to the maintenance of social order. C-ID, AJ 160, CSU, UC

ADJUS-139 Gangs and Threat Groups in America
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
An introduction to modern criminal gangs, their philosophy, history, structure, impact on the community and the criminal justice system. A study of the legal codes and prosecution of gang members. Evaluation of prison gangs and their impact on the community. An examination of treatment programs in the institutions and the community. CSU
ADJUS-203 Physical Evidence and the Crime Laboratory
4 units LR
- 54 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is an in-depth analysis and discussion of the nature and significance of various types of physical evidence commonly found at crime scenes. Areas of emphasis include: (1) the use of physical evidence in the forensic setting, (2) types of physical evidence, (3) the identification, collection and packaging of physical evidence, (4) principles of crime scene photography, (5) crime scene sketching, (6) evidence collection techniques: casting shoe and tool marks, lifting latent fingerprints and (7) the preservation of trace evidence, i.e. physiological fluids, hair, soil, fibers, glass, etc. This course combines the theoretical concepts associated with use of physical evidence in the forensic setting with student involvement in the processing of simulated crime scenes. The laboratory component, which will focus on the student applying the principles learned in lectures, will be mandatory. C-ID AJ 150, CSU

ADJUS-221 Criminal Evidence
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
This course covers the origin, development, philosophy and constitutional basis of evidence; procedural considerations affecting arrest, search and seizure, kinds and degrees of evidence and rules governing admissibility; judicial decisions interpreting individual rights and case studies. C-ID AJ 124, CSU

ADJUS-222 Criminal Investigation
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
This course presents fundamentals of investigation; crime scene search and recording; collection and preservation of physical evidence; scientific aids; modus operandi; sources of information; interviews and interrogation; follow-up; ethical issues for investigators; and case preparation. C-ID AJ 140, CSU

ADJUS-230 Juvenile Procedures
3 units LR
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
Organization, functions, and jurisdiction of juvenile agencies, the processing and detention of juveniles; juvenile case disposition; juvenile statutes and court procedures. C_ID AJ 220, CSU

ADJUS-260 Patrol Procedures
3 units LR
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available
Responsibilities, techniques, purpose and methods of police patrol; decision making and judgment of their community effect. CSU

ADJUS-270 Personal Self Defense and Firearms
2 units SC
- 18 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Requires ability to participate in vigorous physical activity. Persons with any felony conviction may not take this course.
This course was designed for anyone seeking training in the area of personal self-defense and firearms training. Although originally developed for law enforcement personnel re-certification, the course will benefit anyone aspiring proficiency with handguns, personal safety and defensive tactics. Experienced law enforcement instructors with many years of teaching and training experience will instruct the course. In addition to moral and legal aspects, as well as safety in the use of side arms and the shotgun, the course will include training in the use of pepper spray and mace. Training in the use of electronic stun guns will also be available as part of this course. CSU

ADJUS-280 Probation and Parole
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
An introduction to probation and parole, its philosophy, history, legal mandates, relations to courts, basic procedures and common treatment approaches. A study of legal codes affecting probation and parole; evaluation of the prison system and inmate community; parole supervision and examination of the success of a contemporary prison and parole system. Specific emphasis will be on California’s probation, institutions and parole system. CSU

ADJUS-284 Interviewing and Counseling
3 units LR
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
An introduction to the concepts and techniques of communication, casework and counseling as utilized by practitioners in the administration of justice field. Students will review the interview and interrogation process as applicable to the social work function in policing and corrections. A basic course for students planning to enter or for those already employed within the administration of justice field. CSU
**ADJUS-298  Independent Study**

.5-3 units  SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.  
An opportunity for advanced students to study special interests under the direction of the faculty. CSU

**ADJUS-299  Student Instructional Assistant**

.5-3 units  SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.  
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

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**ALLIED HEALTH**

See Biological science - BIOSC

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**ANTHROPOLOGY – ANTHR**

Obed Vazquez, interim dean  
Social Sciences Division  
Faculty Office Building, Room 136

**Possible career opportunities**

Anthropology is a basic component for careers like anthropologist, anthropology instructor, museum curator, population analyst, urban planner, social services consultation, and environmental impact analyst. Most career options require more than two years of college study.

**ANTHR-115  Primate Evolution and Adaptation**

3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
An introduction to the biology, behavior, ecology, and evolutionary history of the primate order. Emphasis will be given to the following topics: 1) evolutionary theory; 2) mammalian biology, anatomy, and osteology; 3) primate behavior, ecology, and biogeography; 4) primate evolutionary history; 5) fossil man. CSU, UC

**ANTHR-120  Magic, Witchcraft, and Religion in the Americas**

3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
A cross-cultural, multicultural examination of the forms and functions of supernatural belief systems and associated rituals that have developed in various societies in the Americas. Basic ethnographic and archaeological concepts and methodologies will be introduced and applied to the assessment and analysis of selected New World cultural/religious traditions. Emphasis will be placed on understanding religious belief systems within their given social contexts. The course will also provide a comparative assessment of the major prehistoric and historic social and religious patterns that developed in the Americas, and will include a cross-cultural comparison of the social and religious traditions that developed within various Native American, African American, Latino/Hispanic American, and Euro-American communities in order to illustrate major systems types and to provide insight into the general functions of religious belief and ritual in human life. CSU, UC

**ANTHR-125  Introduction to Archaeology and Prehistory**

3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
An introduction to archaeological methods and the study of prehistory. Course will deal with field work techniques, the classification and interpretation of artifacts, theory in archaeology and prehistory, and will introduce students to the key developments in the study of human prehistory. Emphasis will be given to the study of the prehistoric inhabitants of the San Francisco Bay Region. CSU, UC

**ANTHR-126  Introduction to Archaeological Field Methods**

3 units  SC  
- 18 hours lecture/108 hours laboratory per term  
- Recommended: ANTHR-125 or equivalent; eligibility for ENGL-122 or equivalent  
This course provides training in surface survey, mapping, scientific excavation, classification and analysis of excavated material, writing interpretive reports, and preparation of museum exhibits. Aspects emphasized will depend on available archaeological opportunities in the Bay Area. A significant portion of class time will be in the field. CSU
ANTHR-130 Cultural Anthropology
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A survey of culture as a basic aspect of human adaptation. Topics include the concept of culture and enculturation, cultural development and change, ethnocentrism and cultural relativity, race vs. ethnicity, patterns of language, ethics and the principles of ethnographic research. Special emphasis on the experiences of Native American, African American, Asian Pacific American, Chicano/Latino and Arab American sub-cultures in U.S. society. CSU, UC

ANTHR-135 Native Americans
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A survey of the Native American cultures that developed in North America. The course also explores the effects of European contact, conquest, colonization, United States expansion, acculturation, U.S. Government policies, wars and treaties, and reservation life of Native Americans, as well as the past and present roles of Native Americans in U.S. society. CSU, UC

ANTHR-140 Physical Anthropology
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
The physical nature of man including evolution, fossil man, race, and differences. The relationships between human biology and cultural development will receive special emphasis. CSU, UC

ANTHR-141L Physical Anthropology Laboratory
1 unit SC
- 54 hours laboratory per term
- Prerequisite: ANTHR-115 or equivalent or ANTHR-140 or equivalent (ANTHR-140 may be taken concurrently)
- Recommended: Eligibility for ENGL-122 or equivalent
An introductory laboratory course in which scientific methodology is taught and used to explore/experiment with topics found in introductory physical anthropology and primate evolution courses. Topics will include: paleontology, hands-on study of fossils, Mendelian and population genetics, human variability, forensics, medical anthropology, epidemiology, non-human primates, primate dental and skeletal anatomy, paleoprimatology, paleoanthropology, hominid dietary patterns, the study of hominids as bio-culturally adapted animals, and a survey of general methodologies utilized in physical anthropological research. Field trips may be included. CSU, UC

ANTHR-155 Topics in Anthropology
3-4 units SC
- Variable hours
A supplemental course in anthropology to provide a study of current concepts and problems in anthropology and related disciplines. Specific topics will be announced in the schedule of classes. CSU

ANTHR-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to pursue special interests under the direction of the faculty. CSU

ANTHR-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ARABIC – ARABC
Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Possible career opportunities
The study of Arabic can open up opportunities in communications, foreign trade and banking, transportation, government, the Foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.
ARABC-120 First Term Arabic
5 units  SC
• 90 hours lecture/18 hours laboratory per term
This is a beginning level language course in Modern Standard Arabic. The course will be proficiency based, covering all four language skills (speaking, listening, reading, and writing). Considerable emphasis will be placed on active use of the language both in class and in daily homework assignments. The class introduces students to the basic phonology and script of the Arabic alphabet, as well as aspects of the sociolinguistics of Arab culture. Students will practice writing the letters in sequence while developing comprehension skills. CSU, UC

ARABC-121 Second Term Arabic
5 units  SC
• 90 hours lecture/18 hours laboratory per term
• Recommended: ARABC-120 or equivalent
This is the second level language course in Modern Standard Arabic. This course is designed to build upon skills in reading and writing developed in ARABC-120. Students will gain increased vocabulary and a greater understanding of more complex grammatical structures. They will be able to approach prose, fiction, and non-fiction written in the language. Students will also increase their proficiency in Arabic script and sound system, widen their working vocabulary, learn key grammatical points, and practice conversation and dictation. Students deliver oral presentations and write academic papers in Arabic. A variety of Arabic texts covering many subjects of interest such as literature, classical writing, poetry, media reports, and news will be introduced. CSU, UC

ARABC-150 Topics in Arabic
.3-4 units  SC
• Variable hours
A supplemental course in Arabic to provide a study of current concepts and problems in Arabic and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ARABC-299 Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ARCHITECTURE – ARCHI

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
Students are provided with a strong background in spatial composition, design theory, and production methods that prepare them for employment as an architectural technician. Many general courses in the architecture program offer education in areas that are also applicable to an entry-level internship position performing manual or computer-aided drafting, furniture or cabinet design, or architectural rendering and illustration.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this chapter of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degrees
Architecture design
Architecture technology

Certificate of achievement
Architecture technology

Associate in science degree - Architecture design
Students in the architectural design program will develop the necessary skills to analyze, modify or create architectural space and the abilities to present their ideas in graphic form using a variety of media. The program emphasizes spatial and architectural theories relating to design, architectural history, and methods of graphic composition and presentation.

The DVC architecture design major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.
To earn an associate in science degree with a major in architecture design, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher and complete all general education requirements as listed in the catalog. Many upper level architecture degree programs require specific physics, math and general education preparation. Please consult the transfer institution for required courses. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements**

- **ARCHI-120** Introduction to Architecture and Environmental Design ........................................ 3
- **ARCHI-121** Architectural Design I ........................................ 4
- **ARCHI-130** Architectural Graphics I ........................................ 3
- **ARCHI-131** Architectural Graphics II ........................................ 3
- **ARCHI-135** Digital Tools for Architecture I ........................................ 3
- **ARCHI-220** Architectural Design II ........................................ 4
- **ARCHI-221** Architectural Design III ........................................ 4
- **ARCHI-244** Architectural Practice and Working Drawings I ........................................ 3
- **CONST-144** Materials of Construction ........................................ 3

**plus at least 3 units from:**

- **ARCHI-105** Architectural Assembly and Fabrication ........................................ 0.5-1
- **ARCHI-110** Design Build Workshop ........................................ 0.5-2
- **ARCHI-136** Digital Tools for Architecture II ........................................ 3
- **ARCHI-156** History of World Architecture: Early Civilizations to Middle Ages ........................................ 3
- **ARCHI-157** History of World Architecture: Middle Ages to 18th Century ........................................ 3
- **ARCHI-158** History of World Architecture: 18th Century to Present ........................................ 3
- **ARCHI-160** History of American Architecture ........................................ 3
- **ARCHI-207** Environmental Control Systems ........................................ 3
- **ARCHI-215** Architectural Portfolio Workshop ........................................ 1.5

**total minimum required units** 33

**Certificate of achievement - Architecture technology**

This program offers students the opportunity to earn a certificate of achievement in architecture technology, which prepares students for a career as an architectural intern, draftsman or designer. As an architecture technology student, students gain an in-depth understanding of the requirements and skills necessary for employment in an architect’s office.

Architectural interns, draftsmen or designers prepare technical and presentation drawings, draft copies of specifications and cost estimates, revise plans, trace details from various sources, operate printing machines, and assemble prints and other documents for projects. Graduates with these skills are also employed by landscape architects, industrial designers, interior designers, and engineers.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the day, and some are also offered in the evening.
required courses units
ARCHI-120 Introduction to Architecture and Environmental Design 3
ARCHI-126 Computer Aided Design and Drafting - AutoCAD 4
ARCHI-130 Architectural Graphics I 3
ARCHI-244 Architectural Practice and Working Drawings I 3
CONST-124 Construction Details and Specifications 3
CONST-135 Construction Processes (Residential) 4
CONST-144 Materials of Construction 3
plus at least 6 units from:
ARCHI-131 Architectural Graphics II 3
CONST-116 Plane Surveying 3
CONST-181 Building Code Interpretation: Non Structural 3
CONST-183 Title 24: Energy Conservation Codes 3
COOP-180 Internship in Occupational Work Experience Education 2-3
ENGIN-226 Computer Aided Drafting Design, Advanced Concepts - AutoCAD 4
total minimum required units 29

ARCHI-105 Architectural Assembly and Fabrication
.5-1 unit SC
• Variable hours
Course covering methods of fabrication for architectural projects in metal, wood, plastic and other materials. Introduction to shop safety, machine and tool operation and small scale design and construction. CSU

ARCHI-110 Design Build Workshop
.5-2 units SC
• May be repeated three times
• Variable hours
• Recommended: ARCHI-105 or equivalent
• Note: During spring term, students will participate in the Cal Poly San Luis Obispo Design Village Competition. This allows each group of 2-6 students to design, build and live in their structure for three days in Poly Canyon. Multiple teams allowed, entry fees and material fees may apply.
Design-build course for full scale design projects in wood, metal and other materials to be designed and constructed by students working in design teams in consultation with faculty. Course explores fabrication and construction process for larger scale designs utilizing sketching, computer rendering, dimensioned sketches and drawings for creation of full scale architectural projects. CSU

ARCHI-119 Introduction to Technical Drawing
3 units SC
• 36 hours lecture/72 hours laboratory per term
• Note: Same as ENGIN-119. For students with no previous drafting experience. Credit by examination option available. This course requires 72 hours of laboratory (lab). These hours may be offered as face to face lab or online lab; see schedule of classes for specific requirements.
This course is an introduction to the use of technical drawing tools, technical lettering and line work, geometric construction, sketching and shape description, orthographic projection, dimensioning, section views, auxiliary views and pictorials. Introduction to the use of computers to produce technical drawings. CSU

ARCHI-120 Introduction to Architecture and Environmental Design
3 units LR
• 36 hours lecture/72 hours laboratory per term
Introduction to the professional field of architecture, architectural design and planning. Investigation and evaluation of the architectural environment with identification and utilization of a creative design process. Study of the use of line, shape, form, texture, light, color, scale, and structure in relation to the creation of architectural space. CSU, UC

ARCHI-121 Architectural Design I
4 units SC
• 54 hours lecture/54 hours laboratory/36 hours laboratory by arrangement per term
• Prerequisite: ARCHI-120 or equivalent
First level studio design class in architectural design. Course focuses on development of fundamental design skills and spatial theory. Exploration of concepts related to site planning and site analysis, spatial qualities of architecture, movement through architectonic space, material qualities, and precedent studies. CSU, UC

ARCHI-126 Computer Aided Design and Drafting AutoCAD
4 units SC
• 54 hours lecture/90 hours laboratory per term
• Recommended: ARCHI-119 or ENGIN-119 or equivalent
• Note: Same as ENGIN-126. Students may petition to repeat this course when software or hardware is changed. Credit by examination option available.
Introductory course covering the computer application AutoCAD as it relates to the creation of technical drawings. Course covers two dimensional computer aided drafting of objects in orthographic projection. Hands-on training utilizing a comprehensive overview of the software package and its applications in architectural drafting is stressed. Students are recommended to have a basic knowledge of technical drawing. CSU, UC (credit limits may apply to UC - see counselor)
ARCHI-127 Introduction to Revit
3 units SC
- 36 hours lecture/54 hours laboratory per term
This course is an introduction to Revit software and covers fundamentals of the Revit operating environment, file structure, organization and creation of three-dimensional and two-dimensional construction models and documents. CSU

ARCHI-130 Architectural Graphics I
3 units LR
- 36 hours lecture/72 hours laboratory per term
- Recommended: ARCHI-119 or ENGIN-119 or equivalent
An introduction to architectural graphics related to projection systems, the representation of architectural forms, rendering and shadow casting. Course covers a series of lectures on the history of architectural rendering, methods of graphic representation used by architects, and assignments introducing problem solving in orthographic and pictorial projection and drawing, architectural lettering, shades and shadows and color rendering techniques. Emphasis on mechanical drafting with pencil and beginning introduction to other art media. CSU, UC

ARCHI-131 Architectural Graphics II
3 units SC
- 36 hours lecture/72 hours laboratory per term
- Prerequisite: ARCHI-130 or equivalent
This course is an advanced exploration of drawing techniques utilizing freehand and mechanical drawing methods of representation. Emphasis on perspective drawing, shade and tone, color theory, and the mental ordering processes involved in accurately representing the built environment. CSU, UC

ARCHI-132 Architectural Graphics III
4 units SC
- 36 hours lecture/108 hours laboratory per term
- Prerequisite: ARCHI-131 or equivalent
Advanced exploration of drawing and rendering techniques utilizing freehand drawing, mechanical drawing and contemporary methods of representation. Emphasis on perspective drawing, shade and tone, color in architectural renderings, and advanced representation of materials, textures and landscape elements. Course covers advanced topics in the use of mixed media, presentation formats, layout and composition in relation to architectural rendering. CSU

ARCHI-135 Digital Tools for Architecture I
3 units SC
- 36 hours lecture/72 hours laboratory per term
- Note: ARCHI-135 and ARCHI-136 may be taken in any order.
An introduction to the use of computers in architectural design and representation. Course covers topics in two dimensional digital presentation graphics, including the use of Adobe Illustrator, InDesign and Photoshop for architectural renderings and page layout. Students will be introduced to Vectorworks CAD software with topics in basic CAD drawing, editing and three dimensional modeling with an emphasis on architectural elements and building. Course concludes with instruction on use of the campus laser cutter with introductory projects exploring the digital and physical fabrication of architectural models. CSU

ARCHI-136 Digital Tools for Architecture II
3 units SC
- 36 hours lecture/72 hours laboratory per term
- Note: ARCHI-135 and ARCHI-136 may be taken in any order.
This course covers the use of computers in architectural design for advanced architectural graphics, three dimensional modeling, rendering and fabrication. Topics include Rhinoceros 3-D modeling software and V-Ray rendering software for architectural presentations, modeling of complex non-orthogonal geometries and architectural forms, fabrication utilizing the campus laser cutter and current computer graphics and architectural rendering standards. CSU

ARCHI-138 Introduction to Parametric Modeling with Grasshopper
2 units SC
- 24 hours lecture/36 hours laboratory per term
- Recommended: ARCHI-136 or equivalent
This course is an introduction to Grasshopper for the generation of complex three dimensional architectural forms in Rhinoceros 3D modeling software. The course covers basic scripting and management of data within the Grasshopper environment. The course will conclude with the construction of a physical model generated in Grasshopper to be fabricated using the campus laser cutter and assembled on campus. The finished model will be displayed on campus. CSU

ARCHI-144 Materials of Construction
3 units SC
- 54 hours lecture per term
- Note: Same as CONST-144
A study of the performance characteristics of construction materials. Covers testing concepts and procedures. Includes basic properties of metals, concrete, timber, masonry, and roofing materials with emphasis on construction applications. CSU
ARCHI-150  Topics in Architecture
3-4 units  SC
• Variable hours
A supplemental course in architecture to provide a study of current concepts and problems in architecture. Specific topics to be announced in the schedule of classes. CSU

ARCHI-156  History of World Architecture: Early Civilizations to Middle Ages
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: ARCHI-156, 157 and 158 may be taken in any order
Architecture and urbanism from prehistory to the Middle Ages. Social, cultural, and physical conditions that influenced the built environment in the Mediterranean region, Europe, Asia, Africa, and Pre-Columbian Americas. Topics include early megalithic tombs and structures, Native American dwellings, architecture of Egypt, Mesopotamia, Persia and the Middle East, early civilizations of the Aegean, temples and cities of Greece, architecture and engineering of Rome, and early medieval structures after the fall of Rome. CSU, UC

ARCHI-157  History of World Architecture: Middle Ages to 18th Century
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: ARCHI-156, 157 and 158 may be taken in any order
This course covers world architecture and urbanism from the Middle Ages until the end of the 18th Century. Exploration of social, cultural, and physical conditions that influenced the built environment of Europe, Asia and the Colonial Americas will be discussed. This course also covers the development of the Gothic cathedral, art and architecture of the Renaissance, Baroque design in Europe, art and construction of buildings and public urban spaces are examined in relation to their social, political and economic contexts. CSU, UC

ARCHI-158  History of World Architecture: 18th Century to Present
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: ARCHI-156, 157 and 158 may be taken in any order
Architecture and urbanism of the modern world, from the 18th century to the present. Exploration of social, cultural, and physical conditions influencing the built environment of Europe, Asia, and the Americas. Course covers American architectural contributions of Frank Lloyd Wright and the Chicago School of Architecture, Art Nouveau and the work of Gaudi with in depth discussion of the influence of industrialization in architecture as well as topics in Russian Constructivism, 20th Century Modernism, Post-modernism and Deconstructivism. CSU, UC

ARCHI-160  History of American Architecture
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
A survey of American architectural history from Native American dwellings to the present utilizing lectures, slides, and field trips. Course covers the architectural influence of immigrant groups from multiple cultural and ethnic backgrounds as well as the influences of architectural design movements through the course of history. Topics covered include Native American dwellings, early Colonial houses and structures, the Georgian and Federal Styles, the planning of Washington DC, Greek, Gothic and other European Revival movements in the United States, as well as the development of the high rise in major metropolitan areas such as Chicago and New York. Material related to the lives and work of noted architects such as Louis Sullivan, Frank Lloyd Wright, Julia Morgan and Bernard Maybeck are presented in relation to their social, political and economic contexts. CSU, UC

ARCHI-165  Architecture and Urbanism of Paris and France
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course will include the history of the urban development of Paris from early Roman settlements to the present. The cultural and architectural developments during major significant historical periods will be presented. Influence from social and political movements on growth, design, and construction of buildings and public urban spaces are discussed. This course also reviews the architectural history of Versailles, chateaux of the Loire Valley and neighboring Chartres Cathedral. CSU, UC

ARCHI-207  Environmental Control Systems
3 units  SC
• 54 hours lecture per term
• Recommended: MATH-090 or equivalent
Course covering the use of environmental control systems in buildings, including heating, cooling and ventilation. Topics include the use of passive solar techniques, cross and stack ventilation, daylighting methods and an introduction to mechanical systems for environmental control in buildings. Emphasis on green building technology and sustainable practices in design of environmental control systems. CSU
**ARCHI-215  Architectural Portfolio Workshop**
1.5 units  SC
- 18 hours lecture/36 hours laboratory per term
- Recommended: ARCHI-121 or equivalent
- Note: Students must have a body of work to document and publish in a portfolio

Students will develop digital and printed architectural design portfolios for transfer, job placement or professional purposes. Course covers printing, binding and publication techniques, graphic design methods and portfolio formats utilizing Adobe Creative Suite. Instruction in digital photography, scanning, printing and other methods of custom graphic publication including laser fabrication and engraving for portfolio design. Highly recommended for architecture students transferring to outside institutions or seeking employment. CSU

**ARCHI-220  Architectural Design II**
4 units  LR
- 36 hours lecture/108 hours laboratory per term
- Prerequisite: ARCHI-121 and 130 or equivalents

Second level studio design class continuing the study of architectural design. Course focuses on development of fundamental design skills utilizing concepts related to site planning and site analysis, spatial qualities of architecture and movement through architectonic space. Continuing investigation of topics in material qualities, general methods of assembly and construction, and human factors in design. Methods of presentation and design development include drawing, model making and architectural reviews and critiques. CSU, UC

**ARCHI-221  Architectural Design III**
4 units  LR
- 36 hours lecture/108 hours laboratory per term
- Prerequisite: ARCHI-135 and 220 or equivalents
- Recommended: ARCHI-136 or equivalent

Third level studio design class continuing the study of architectural design. Course focuses on development of applying fundamental design skills and spatial theories to design projects of greater architectural complexity. Projects will incorporate the use of concepts of site planning, structural systems and circulation through space into a variety of design problems. Projects will also explore concepts in human, cultural, historical and advanced structural and circulation systems in architectural design. CSU, UC

**ARCHI-226  Computer Aided Drafting Design, Advanced Concepts - AutoCAD**
4 units  SC
- 54 hours lecture/90 hours laboratory per term
- Recommended: ARCHI-126 or ENGIN-126 or equivalent
- Note: Same as ENGIN-226. Students may petition to repeat this course when software or hardware is changed.

Course is designed for students with previous knowledge and experience in using AutoCAD. Course covers (1) surface/wireframe and solid modeling features of AutoCAD for 3-dimensional modeling and photo realistic rendering, (2) customization and optimal application of AutoCAD and (3) utility options for presentation purposes and project management. CSU, UC (credit limits may apply to UC - see counselor)

**ARCHI-227  Advanced Concepts in Revit and Building Information Modeling**
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: ARCHI-127 or equivalent

This course presents advanced concepts in Revit covering renderings, animations, project phasing, and advanced concepts in Building Information Modeling (BIM). CSU

**ARCHI-244  Architectural Practice and Working Drawings I**
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ARCHI-130 or equivalent
- Formerly ARCHI-222

Course covers the methods and processes for the interpretation and creation of architectural working drawings and specifications. Topics covered include schematic design, design development, assembly and graphic representation of building elements and the creation of architectural drawings and construction documents. Site plans, foundations, framing systems, bearing walls, structural frames, electrical and mechanical systems in addition to details and cladding systems for floors, walls and roofs are included in course curriculum. Discussion of the CSI format and use of reference material such as local planning ordinances, building codes, architectural graphic standards, and information published by building product manufacturers are included in course curriculum. Students are introduced to the design review process, standards of practice and graphic representation, and the role of the architect, client and local governing agencies. CSU
ARCHI-245  Architectural Practice and Working Drawings II
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ARCHI-222 or equivalent  
- Formerly ARCHI-223

Preparation and interpretation of architectural working drawings and specifications, with emphasis on heavy timber, concrete, masonry, and steel construction. Use of reference material such as local planning ordinances, building codes, architectural graphic standards, and information published by building product manufacturers. CSU

ARCHI-298  Independent Study
.5-3 units  SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.

An opportunity for advanced students to study special interests under the direction of faculty. CSU

ARCHI-299  Student Instructional Assistant
.5-3 units  SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ART – ART

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Possible career opportunities
Career options include professions engaged in creating works of art as an artist, painter, sculptor, ceramist, engraver, printmaker, metal smith, illustrator, designer, muralist, and jeweler. Some careers requiring an education beyond the associate degree include: art critic, art dealer, educator, historian, arts administrator, advertising specialist, computer graphics illustrator, display designer, gallery director, and visual information specialist.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this chapter of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in art degree
Fine arts

Certificates of achievement
Ceramics  
Painting and drawing  
Printmaking

Associate in art degree - Fine arts
The associate in arts degree in fine arts offers students a curricular program for studying a variety of beginning courses within the field of art practice. The student with an associate in arts degree in fine arts is prepared for upper division work in the major at four-year institutions. The major is available at UC and CSU systems, the San Francisco Art Institute, the California College of Art, and at other colleges of art and schools of design. The fine arts curriculum develops a student’s critical thinking skills, hones problem-solving skills, and establishes visual literacy. Career opportunities in fine arts include: exhibiting artist, art critic, art dealer, educator, art historian, graphic designer, photographer, sculptor, ceramist, jeweler, printmaker, painter, art illustrator, art technician, museum curator, art journalist, arts administrator, product designer, advertising specialist and other professions in creative endeavor.

The fine arts major is a two-year degree program of transferable courses open to all students. The program requirements are designed for those interested in art as professional practice and as preparation for transfer. The major has three components. The first component is a core of two required foundations fine arts studio courses. The second component is two required art history courses. The third component offers students choices in 10 emphasis areas. Students may select an emphasis in drawing, painting, sculpture, photography, printmaking, ceramics, art digital media, graphic design, art history, or metalsmithing, but are encouraged to choose within a wide range of these beginning courses for transfer. Fine arts faculty and staff are dedicated to assisting students in exploring job opportunities, internships, and transferring to four-year institutions of higher learning.

The DVC fine arts major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.
To earn an associate in arts degree with a major in fine arts, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major and complete all general education requirements as listed in the catalog. Degree requirements may be completed by attending classes in the day, evening, or weekends. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-138</td>
<td>Sculpture I</td>
<td>3</td>
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**plus at least 6 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>ARTHS-193</td>
<td>History of Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-195</td>
<td>History of Prehistoric and Ancient Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-196</td>
<td>History of Medieval and Renaissance Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-197</td>
<td>History of Baroque to Early 20th Century Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-199</td>
<td>Contemporary Art History</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 12 units from a minimum of three areas of specialization:**

**art history**

<table>
<thead>
<tr>
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**ceramics**

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ART-152</td>
<td>Wheel Thrown Ceramic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART-155</td>
<td>The Art of Ceramic Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ART-156</td>
<td>Figurative Ceramic Art</td>
<td>3</td>
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</table>

**digital media**

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<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-140</td>
<td>Motion Graphics</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-171</td>
<td>Introduction to Web Design</td>
<td>3</td>
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**drawing**

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<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>ART-109</td>
<td>Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>ART-107</td>
<td>Figure Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-108</td>
<td>Figure Drawing II</td>
<td>3</td>
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**graphic design**

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<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>ARTDM-214</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
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<tr>
<td>ARTDM-224</td>
<td>Typography</td>
<td>3</td>
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**metalsmithing**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ART-146</td>
<td>Metalsmithing and Jewelry I</td>
<td>3</td>
</tr>
<tr>
<td>ART-147</td>
<td>Metalsmithing and Jewelry II</td>
<td>3</td>
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</table>

**painting**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ART-120</td>
<td>Watercolor I</td>
<td>3</td>
</tr>
<tr>
<td>ART-126</td>
<td>Painting I: Introduction to Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART-127</td>
<td>Painting II: Intermediate Painting</td>
<td>3</td>
</tr>
</tbody>
</table>

**photography**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-160</td>
<td>Photography I</td>
<td>3</td>
</tr>
<tr>
<td>ART-181</td>
<td>Photography II</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-136</td>
<td>Introduction to Digital Photography</td>
<td>3</td>
</tr>
</tbody>
</table>

**printmaking**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ART-109</td>
<td>Printmaking: Monotype</td>
<td>3</td>
</tr>
<tr>
<td>ART-110</td>
<td>Introduction to Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART-111</td>
<td>Printmaking: Etching I</td>
<td>3</td>
</tr>
</tbody>
</table>

**sculpture**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-139</td>
<td>Sculpture II</td>
<td>3</td>
</tr>
<tr>
<td>ART-142</td>
<td>Metal Art I</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units**

24

*Note: There may be no duplication of course units between major requirements and restricted elective courses.

**Certificate of achievement - Ceramics**

A certificate of achievement in ceramics offers a variety of beginning courses within the field of three-dimensional art. The program will introduce both techniques and concepts of ceramics in an academic context. The program requirements are designed for those interested in ceramics as professional practice and provide exposure to the discipline that may help students decide to continue their studies at a four year institution. The ceramics major is available at UC and CSU systems, the San Francisco Art Institute, the California College of Arts, and at other colleges of art and schools of design.

Students seeking to complete an associate in arts degree in fine arts may choose to supplement that award with a certificate of achievement in ceramics. The fine art curriculum develops students’ critical thinking skills, hones problem-solving skills, and establishes visual literacy in the ceramic medium. The ceramics certificate offers technical training related to the commercial ceramic industry and can lead to career opportunities that include: art educator, exhibiting artist, hand-made production potter, ceramic art studio assistant, art therapy intern, creative tile designer, tile producer, mosaic muralist, portrait sculptor, industrial ceramics product designer, industrial ceramics shop manager, ceramic engineering intern, museum or gallery assistant, art dealer, art critic and other professions in creative, hands-on endeavors.

The certificate of achievement has three components. The first component is a core of two required foundations: one introductory drawing/design class and an art history class. The second component is five classes of ceramics (three required, two elective). The third component is one studio art course outside ceramics.

To earn a certificate, students must complete each course with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate.
Certificate of achievement - Painting and drawing

The certificate of achievement in painting and drawing offers a variety of fundamental courses within the field of two-dimensional art. The program will introduce both techniques and concepts of painting and drawing in an academic context. The program requirements are designed for those interested in painting and drawing as a professional practice and may provide preparation for transfer. The requirements for the certificate of achievement in painting and drawing also apply to the associate in arts degree in fine arts. The fine art major in painting and drawing is available at the UC and CSU systems, the San Francisco Art Institute, the California College of Arts, and at other colleges of art and schools of design. Students who wish to transfer must consult with program faculty and college counselors to ensure that the requirements for transfer to appropriate institutions are met.

The fine art curriculum develops a student's critical thinking abilities, hones problem-solving skills, and establishes visual literacy in the visual arts. Career opportunities that may be enhanced by the printing certificate include: printmaking exhibiting artist, print dealer, printmaking educator, graphic designer, illustrator, internships and paid apprenticeships in print publishers, and work in print shops including those specializing in etching, woodblock, letterpress, monotype, and silkscreen processes.

To earn the certificate, students must complete each course with “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate.

**Certificate of achievement - Printmaking**

The certificate of achievement in printmaking includes fundamental courses within the field of printmaking. The program will introduce both techniques and concepts of printmaking in an academic context. The program requirements are designed for those interested in printmaking as professional practice and may provide preparation for transfer. The printmaking major is available at UC and CSU systems, the San Francisco Art Institute, the California College of Arts, and at other colleges of art and schools of design. Students who wish to transfer must consult with program faculty and college counselors to ensure that the requirements for transfer to appropriate institutions are met.

Students whose educational goal is the associate in arts in fine arts may choose to supplement the degree with a certificate of achievement in printmaking. The fine arts curriculum develops a student's critical thinking skills, hones problem-solving skills, and establishes visual literacy in print media. Career opportunities that may be enhanced by the printmaking certificate include: printmaking exhibiting artist, print dealer, printmaking educator, graphic designer, illustrator, internships and paid apprenticeships in print publishers, and work in print shops including those specializing in etching, woodblock, letterpress, monotype, and silkscreen processes.

To earn the certificate, students must complete each course with “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate.

**Certificate of achievement - Printmaking**

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-105 Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-152 Wheel Thrown Ceramic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART-155 The Art of Ceramic Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ART-299 Student Instructional Assistant</td>
<td>0.5-3*</td>
</tr>
<tr>
<td>ARTHS-199 Contemporary Art History</td>
<td>3</td>
</tr>
</tbody>
</table>

*minimum 2 units required

**plus at least 9 units from:**

| ART-153 Wheel Thrown Ceramic Art II | 3     |
| ART-154 Hand-Built Ceramic Art | 3     |
| ART-156 Figurative Ceramic Sculpture | 3     |
| ART-298 Independent Study | 0.5-3 |

**total minimum required units** 23

**Certificate of achievement - Painting and drawing**

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
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</thead>
<tbody>
<tr>
<td>ART-105 Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-120 Watercolor I</td>
<td>3</td>
</tr>
<tr>
<td>ART-110 Figure Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-116 Color Theory and its Application to 2-D Media</td>
<td>3</td>
</tr>
<tr>
<td>ART-135 Art Gallery/Museum Management</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-112 Digital Imaging for the Artist</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 6 units from:**

| ART-106 Drawing II | 3     |
| ART-107 Figure Drawing II | 3     |
| ART-125 Color Theory and its Application to 2-D Media | 3     |
| ARTDM-112 Digital Imaging for the Artist | 3     |

**total minimum required units** 15

**ART-101 Fundamentals of Two-Dimensional Design**

3 units SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-116/118 or equivalent

This course is a study of theories and applications of two-dimensional design and color in visual art and design. The formal, theoretical, cultural, contemporary, as well as historical elements of two-dimensional design will be explored. CSU
ART-102  Fundamentals of Three-Dimensional Design
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-116/118 or equivalent
- Formerly ART-140

This course is an introduction to the concepts, applications, and historical references related to three-dimensional design and sculpture, including the study of the elements and organizing principles of design as they apply to spatial composition. Students will develop a visual vocabulary for the creative expression through lecture presentations and use of appropriate materials for non-representational three-dimensional studio projects. CSU

ART-105  Drawing I
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-116/118 or equivalent

An introduction to observational drawing concepts and an exploration of form rendering. Students will learn basic visual problem solving skills while gaining comprehension of perceptual drawing and application of compositional principles. C-ID ARTS 100, CSU, UC

ART-106  Drawing II
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-105 or equivalent; eligibility for ENGL-116/118 or equivalent

Exploration of artistic concepts, styles, and creative expression related to intermediate-level drawing, focusing on complex subject matter and concepts using a variety of drawing mediums (including color), techniques, and methodologies. Students in this course will build on fundamental drawing skills to develop personalized approaches to content and materials in exercises covering multiple historical and contemporary approaches to drawing. CSU, UC

ART-107  Figure Drawing I
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Prerequisite: ART-106 or equivalent
- Recommended: ART-105 or equivalent; eligibility for ENGL-116/118 or equivalent

This course introduces drawing from the human figure with emphasis on the traditional drawing media of pencil, charcoal, and ink. CSU, UC

ART-108  Figure Drawing II
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Prerequisite: ART-107 or equivalent
- Recommended: ART-105 or equivalent; eligibility for ENGL-116/118 or equivalent

Drawing from the human figure. Emphasis on mixed media: pastels, gouache, and watercolor. CSU, UC

ART-109  Printmaking: Monotype
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-105 or equivalent, or ART-106 or equivalent

An exploration of monotype (single image) processes utilizing a painterly approach to printmaking. Emphasis on traditional and contemporary methods. CSU, UC

ART-110  Introduction to Printmaking
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-105 or equivalent; eligibility for ENGL-116/118 or equivalent

An introduction to various printmaking techniques: monotype, collagraph, dry point, linoleum cut. CSU, UC

ART-111  Printmaking: Etching I
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Prerequisite: ART-105 or equivalent

The study of intaglio printmaking: line etching, aquatint, deepbite, multiple color plates, and chine colle. Projects and discussions develop students’ understanding of how images can communicate our experience and imagination. CSU, UC

ART-112  Printmaking: Etching II
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-105 or equivalent

A continuation of study of intaglio printmaking: line etching, aquatint, deepbite, multiple color plates, and photo etching. Projects and discussion further develop students’ understanding of the traditional print media and application of contemporary methods. CSU
ART-114  Printmaking: Woodblock
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: ART-105 or equivalent
This course focuses on relief printmaking history and methods. Students will build on basic printmaking techniques such as linocut and woodcut and further explore the possibilities of the media through advanced color woodblock and letterpress techniques. Various media will be introduced, including multi-plate relief printing, reduction relief printing, wood engraving, and typeface/polymer plate printing. Various printing methods will be introduced including hand printing, etching press, and letter press. CSU

ART-116  Printmaking: Stencil and Screen Print
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: ART-105 or equivalent
The study of stencil methods of printmaking, which are utilized in various fine art media and commercial industries in the contemporary world. Students will learn the principles of stencil through stencil monotype and explore various stencil usages in screen printing, including usage of photo positives and digital imagery. CSU, UC

ART-120  Watercolor I
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: ART-105 or equivalent; eligibility for ENGL-116/118 or equivalent
• Note: ART-120A and 120B combined are equivalent to ART-120
A study of the materials and techniques of watercolor painting with emphasis on learning techniques, problem solving, concept development, and skills demonstration. CSU, UC

ART-126A  Introduction to Oil/Acrylic Painting A
1.5 units  SC
• 18 hours lecture/36 hours laboratory per term
• Recommended: ART-105 or equivalent; eligibility for ENGL-116/118 or equivalent
• Note: ART-126A is equivalent to the first half of ART-126. ART-126A and 126B combined are equivalent to ART-126.
Course designed for the student who has had no experience with oil/acrylic painting. The emphasis of the class is on basic painting techniques. Specific assignments are designed to enable students to achieve basic goals. CSU, UC
**ART-126B  Introduction to Oil/Acrylic Painting B**

1.5 units  SC

- 18 hours lecture/36 hours laboratory per term
- Recommended: ART-105 or equivalent; ART-126A or equivalent; eligibility for ENGL-116/118 or equivalent
- Note: ART-126B is equivalent to the second half of ART-126. ART-126A and ART-126B combined are equivalent to ART-126.

This course presents painting as a means of communication and the practical study of established styles and techniques. Emphasis will be upon traditional materials and techniques including direct and indirect methods. CSU, UC

**ART-127  Painting II: Intermediate Painting**

3 units  SC

- 36 hours lecture/72 hours laboratory per term
- Prerequisite: ART-105 or equivalent
- Recommended: ART-125 and ART-126 or equivalent; eligibility for ENGL-116/118 or equivalent

This course is an intermediate level painting class. This course provides students with painting projects designed to further enhance techniques, technical skills, and problem solving abilities. CSU, UC

**ART-128  Painting III: Studio Practice and Theme Development**

3 units  SC

- 36 hours lecture/72 hours laboratory per term
- Prerequisite: ART-126 or equivalent
- Recommended: ART-125 and ART-127 or equivalent; eligibility for ENGL-116/118 or equivalent

This course is designed to help students transition to initiating a series of paintings with a unifying theme. Emphasis will be on the development of the artist’s content exploration and imagination. Ideas and themes addressing issues of historic, contemporary, and cultural significance in painting will be presented. CSU, UC

**ART-129  Advanced Painting**

3 units  SC

- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-105, ART-125, ART-126, ART-127, and ART-129 or equivalents; eligibility for ENGL-116/118 or equivalent

This course is an advanced level painting class. Approaches to painting issues concerning subject matter, composition, and expression will be studied. This course is designed to develop the artist’s portfolio with a cohesive and thematic series of paintings. CSU, UC

**ART-135  Art Gallery/Museum Management**

3 units  SC

- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-116/118 or equivalent

A study of the skills, theories, and practices necessary to prepare works of art for public display and their practical application in the DVC Art Gallery. Matting, framing, exhibition design, conservation, advertising, and legal issues will be addressed. Students will develop professional skills needed to interact within art and related business environments. Off-campus professional internships may be possible upon completing this class. CSU

**ART-138  Sculpture I**

3 units  SC

- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-116/118 or equivalent
- Formerly ART-141

This course concentrates on three-dimensional sculptural principles, techniques, and concepts utilizing a wide range of materials and practices. Various sculpture methods are practiced with attention to creative self-expression with cross-cultural and historical context. CSU

**ART-139  Sculpture II**

3 units  SC

- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-138 or equivalent

This course consists of hands on projects that guide students through processes and principles of three dimensional design. Students develop a conceptual dialogue with the instructor, create a portfolio of sculptural work, and practice advanced techniques for sculpture making. CSU

**ART-142  Metal Art I**

3 units  SC

- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-140 or equivalent

This course is a comprehensive introduction to various metal sculpture processes. This course applies mold-making techniques for casting bronze, aluminum, and iron objects, as well as basic welded sculpture. Emphasis will be on 3-D design quality and process. CSU
ART-143  Metal Art II  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-140 or equivalent and ART-142 or equivalent  
A continuation of various aspects of metal arts. Advanced techniques in metal casting of bronze, aluminum, and iron are explored, as well as the fabrication of steel sculpture using the forge and welding. Emphasis will be on advanced design and technique with research in the history of traditional and contemporary metal sculpture. CSU

ART-144  Metal Casting Techniques I  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-140 or equivalent  
This course introduces various aspects of metal sculpture using casting techniques. Moldmaking techniques for castings in bronze, aluminum, and iron are introduced. An in-depth study of traditional and contemporary metal sculpture processes with an emphasis on 3-D design quality are established. CSU

ART-145  Metal Casting Techniques II  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-140 or equivalent and ART-144 or equivalent  
This course expands on foundry casting skills with emphasis on more complex casting problems. The casting process for aluminum, bronze, and iron will be thoroughly explored. Advanced mold-making techniques in resin-bonded sand molds, green sand, and burnout investment molds, and shell molds are covered. Emphasis added to sustainable studio practice and design concerns. CSU

ART-146  Metalsmithing and Jewelry I  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-140 or equivalent  
This is a beginning course providing skills in basic jewelry and metalsmithing design and hands-on processes. The studio coursework includes the techniques of soldering, cutting, stone setting, bezel work, rolling, chain making, metal forming, and metal finishing. The course further provides a foundation in traditional and contemporary jewelry design and aesthetic forms. CSU

ART-147  Metalsmithing and Jewelry II  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-146 or equivalent  
This is an advanced metalsmithing/jewelry course with emphasis on hands-on processes. It provides further exploration of traditional and contemporary metalsmithing design and aesthetics. A variety of techniques such as advanced chainmaking, advanced stone setting, forming and raising, chasing, moldmaking, and casting are introduced. An emphasis is placed on individual design and conceptualization. CSU

ART-150  Topics in Studio Art  
.3-4 units  SC  
- Variable hours  
- Recommended: Eligibility for ENGL-116/118 or equivalent  
This is a supplemental course in studio art topics to provide a study of current concepts and problems in studio art. Specific topics will be announced in the schedule of classes. CSU

ART-151  Visual Theory and Practice – Ceramic Art  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: Eligibility for ENGL-116/118 or equivalent  
This introductory course will expose students to a broad spectrum of ceramic art from diverse cultures including Western/European Art, Asian/Middle Eastern Art, Meso-American Art and African Art with a focus on visual theory, aesthetics, criticism and historical context. Students will develop critical thinking skills through the analysis of cultural and technological constructs that influence the creation of specific genres. In addition, with an emphasis on creative problem solving skills, students will produce original works of ceramic art by reinterpreting the traditions they study in a contemporary context. CSU

ART-152  Wheel-Thrown Ceramic Art  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: Eligibility for ENGL-116/118 or equivalent  
This course is an introduction to the creation of ceramic vessels on the potter's wheel and the development of critical thinking skills through the examination of ceramic art. Through the study of the art of various western and non-western cultures, the fundamentals of three-dimensional design and the development of a vocabulary of aesthetic terms and theories students will engage in both critical discussion and creative application utilizing the potter's wheel. CSU, UC
ART-153  Wheel-Thrown Ceramic Art II
3 units   SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-152 or equivalent; eligibility for ENGL-116/118 or equivalent
This intermediate wheel throwing class is geared towards further developing the skill of students who already have the grasp of the techniques of making vessels on the potter's wheel. Through the examination of historical and contemporary ceramic genres and the development of technical skills, including glaze experimentation, students will construct complex, wheel-thrown forms. The fundamentals of three-dimensional design will be used to develop a personal aesthetic, and also to guide critique of finished forms. CSU, UC

ART-154  Hand-Built Ceramic Art
3 units   SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-116/118 or equivalent
Using functional objects as a starting point, students will learn traditional and contemporary hand-building techniques. Students will then explore the creative potential of these methods during the construction of ceramic vessels. CSU, UC

ART-155  The Art of Ceramic Sculpture
3 units   SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-116/118 or equivalent
Students will examine various western and non-western cultures, learn the fundamentals of three-dimensional design and develop a vocabulary of aesthetic terms and theories for both critical discussion and creative application producing ceramic sculpture. CSU, UC

ART-156  Figurative Ceramic Art
3 units   SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-116/118 or equivalent
Students will explore the artistic potential of the human figure through the ceramic medium. Students will analyze a broad range of aesthetic styles and philosophies and synthesize a variety of construction and firing techniques relevant to their creative projects. CSU, UC

ART-160  Photography I
3 units   SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Students supply SLR camera, digital image capture device and flash drive.
An introductory photography class that offers students a working knowledge of the basics of traditional darkroom photography and digital photography including history, theory and practice. Students will explore the technical aspects of photography and the historical and contemporary role of photography in visual expression, including contributions from diverse cultures. Class critiques will be used to analyze and discuss photographic images as a form of personal expression and communication. CSU, UC

ART-161  Photography II
3 units   SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-160 or equivalent
- Note: Students supply their own working roll-film camera with manual exposure controls and a lightmeter (either hand held or built into the camera), a digital image capture device, and a flash drive
An intermediate photography class that enhances students knowledge of materials and techniques used in traditional black and white and digital photography. The course will concentrate on the specific controls of image processing and the multiple characteristics of a variety of photographic materials. Beyond technique, emphasis will be placed on developing concept, editing, and aesthetic considerations relating to image presentation. CSU, UC (credit limits may apply to UC - see counselor)

ART-162  Photography III
3 units   SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-161 or equivalent
- Note: Students supply their own working roll-film camera with manual exposure controls, a lightmeter (either hand held or on camera), a digital image capture device, and a flash drive
This course offers students an opportunity to develop advanced skills using the materials and techniques of traditional and digital photography. Advanced portfolio development and photographic practices will be emphasized. Discussion and critique will be informed by the history of photography and an examination of contemporary art practices. CSU
ART-163  Documentary Photography  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-160 or equivalent; eligibility for ENGL-116/118 or equivalent  
- Note: Students supply cameras and flash drives  
This is an intermediate level course in which students participate in field trips, in-class lectures, demonstrations, critiques, and studio time to develop their own documentary photo essays. The main emphasis will be on documentary photography, its definition, historical precedents, and image making. This course is appropriate for students in art, journalism, and communication. CSU

ART-250  Projects in Art  
.3-4 units  SC  
- Variable hours  
A supplemental course in art to provide a study of current concepts and problems in art. Specific topics will be announced in the schedule of classes. CSU

ART-265  Advanced Photography Workshop  
3 units  SC  
- 18 hours lecture/90 hours laboratory per term  
- Recommended: ART-160 or equivalent  
This course is designed to refine the aesthetic vision and visual literacy of the experienced photographer by offering a structured environment to cultivate an individual’s point of view. Students will define and develop an individual photographic project based on their aesthetic concerns. CSU

ART-298  Independent Study  
.5-3 units  SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered  
An opportunity for advanced students to study special interests under the direction of the faculty. CSU

ART-299  Student Instructional Assistant  
.5-3 units  SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.  
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ART DIGITAL MEDIA – ARTDM

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Possible career opportunities
Digital media or graphic design jobs cover all ends of the creative spectrum. Some possible career options include website designer/developer, multimedia designer, computer-graphic artist, animator and cartoonist, interface designer, instructional designer, production artist, video specialist, audio specialist, multimedia programmer, technical writer, informational designer, multimedia company executive, internet consultant, and computer game designer.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this chapter of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Art digital media  
Graphic design

Certificates of achievement
Art digital media - Character animation  
Art digital media - Digital audio  
Art digital media - Digital imaging  
Art digital media - Motion graphics  
Art digital media - 3D Modeling and animation  
Art digital media - Web design  
Graphic design

Certificate of accomplishment
Art digital media - Foundation

Associate in arts degree - Art digital media
The art digital media associate in arts program prepares students for entry level employment in one of six specialty areas of the digital media industry: character animation, digital imaging, web design, motion graphics, 3D animation and digital audio. This program of study will provide students with the design and technical skills needed for creating non-linear interactive digital media. Students will participate in a collaborative, team-oriented learning experience that mirrors the industry design and production process. Additionally, students will explore career opportunities and develop a professional portfolio for entry into the workforce.
To earn an associate in arts degree, students must complete each course used to meet a major requirement with a “C” grade or higher. Required courses are available in the evening and during the day. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements**
- ARTDM-110 Digital Imaging Process and Technique I .................................. 1.5
- ARTDM-111 Digital Imaging Process and Technique II .................................. 1.5
- ARTDM-130 Introduction to Digital Audio .................................................. 1.5
- ARTDM-149 Fundamentals of Digital Video .................................................. 3
- ARTDM-190 Digital Media Projects ............................................................. 3
- ARTDM-191 Multimedia Portfolio Development ............................................ 3

*plus 8-9 units from one of the following six specialty areas*:

**character animation**
- ART-107 Figure Drawing I ................................................................. 3
- ARTDM-165 Cartoon Drawing for Digital Animation .................................. 3
- ARTDM-170 Animation and Interactivity .................................................. 3

**digital audio**
- MUSIC-172 Introduction to Electronic Music and MIDI ................................ 3
- MUSIC-173 Advanced Electronic Music ................................................... 3
- MUSIC-174 Introduction to Pro Tools ....................................................... 3

**digital imaging**
- ARTDM-112 Digital Imaging for the Artist .................................................. 3
- ARTDM-115 Digital Imaging Process and Technique III .................................. 3
- ARTDM-214 Introduction to Graphic Design ............................................. 3

**motion graphics**
- ARTDM-140 Motion Graphics ................................................................. 3
- ARTDM-145 Digital Editing ................................................................. 3
- ARTDM-170 Animation and Interactivity .................................................. 3

**3D modeling and animation**
- ARTDM-160 3D Modeling and Animation I ............................................. 3
- ARTDM-161 3D Modeling and Animation II ............................................. 3
- ARTDM-165 Cartoon Drawing for Digital Animation .................................. 3

**web design**
- ARTDM-170 Animation and Interactivity .................................................. 3
- ARTDM-171 Introduction to Web Design .................................................. 3
- COMSC-195 WWW Publishing with HTML ............................................... 1
- COMSC-196 Advanced WWW Publishing .................................................. 1

*plus at least 9 units from:
- ART-106 Drawing II .................................................................. 3
- ART-107 Figure Drawing I ................................................................. 3
- ART-125 Color Theory and its Application to 2-D Media ............................. 3
- ARTDM-112 Digital Imaging for the Artist .................................................. 3
- ARTDM-115 Digital Imaging Process and Technique III .................................. 3
- ARTDM-117 Digital Illustration ............................................................. 3
- ARTDM-136 Introduction to Digital Photography ........................................ 3
- ARTDM-140 Motion Graphics ................................................................. 3
- ARTDM-145 Digital Editing ................................................................. 3
- ARTDM-160 3D Modeling and Animation I ............................................. 3
- ARTDM-161 3D Modeling and Animation II ............................................. 3
- ARTDM-165 Cartoon Drawing for Digital Animation .................................. 3
- ARTDM-166 Intermediate Cartoon Drawing for Digital Animation ................. 3
- ARTDM-170 Animation and Interactivity .................................................. 3
- ARTDM-171 Introduction to Web Design .................................................. 3
- ARTDM-175 Digital Animation ............................................................. 3
- ARTDM-214 Introduction to Graphic Design ............................................. 3
- ARTDM-224 Typography ................................................................. 3
- BUS-109 Introduction to Business .......................................................... 3
- BUSMG-191 Small Business Management ................................................. 3
- COMSC-165 Advanced Programming with C and C++ ................................ 4
- COMSC-195 WWW Publishing with HTML ............................................... 1
- COMSC-196 Advanced WWW Publishing .................................................. 1
- COMSC-255 Programming with Java .......................................................... 4
- MUSIC-172 Introduction to Electronic Music and MIDI ................................ 3
- MUSIC-173 Advanced Electronic Music ................................................... 3
- MUSIC-174 Introduction to Pro Tools ....................................................... 3

**total minimum required units** 33.5

*Note: There may be no duplication of course units between major specialty area requirements and restricted elective courses.*

**Associate in arts degree – Graphic design**

This degree program provides students with a strong foundation in the fundamental aspects of graphic design and digital art. Students develop creativity and ideation skills, learn the theories of communication design and apply this to a wide range of design situations. The program is hands-on, integrating conceptual design studies with traditional and digital tools and production methods. The program goal is to provide the skills necessary to enter this growing, professional field.

Some examples where students might find employment using their design and illustration skills might include website design and development, design and illustration of electronic magazines and books, design of interactive marketing presentations, interactive learning products, scientific visualizations, etc. Advanced students have the opportunity to complete professional career preparation courses that deal with specific business issues relevant for designers, illustrators, and digital artists.

DVC graphic design students who intend to transfer must consult with a program advisor to select appropriate courses and are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU Breadth). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate in arts degree with a major in graphic design, students must complete each course used to meet a major requirement with a “C” grade or higher. Degree requirements can be completed by attending classes in the day, evening, online or a combination of those. Some courses may satisfy both major and general education requirements; however, the units are only counted once.
Certificate of achievement - Art digital media

The art digital media program prepares students for entry level employment in one of six specialty areas of the digital media industry: character animation, digital audio, digital imaging, motion graphics, 3D modeling and animation, and web design. This program of study will provide students with the design and technical skills needed for creating non-linear interactive digital media. Students will participate in a collaborative team-oriented learning experience that mirrors the industry design and production process. Additionally, students will explore career opportunities and develop a professional portfolio for entry into the workforce.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Required courses are available in the evening and during the day.

required courses  units

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<tr>
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<th>Course Title</th>
<th>Units</th>
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<tr>
<td>ART-106</td>
<td>Drawing I.</td>
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<td>ARTDM-110</td>
<td>Digital Imaging Process and Technique I.</td>
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<td>Digital Imaging Process and Technique II.</td>
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</tr>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-113</td>
<td>Digital Editing</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-114</td>
<td>Animation and Interactivity</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-115</td>
<td>Design and Technical Skills</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-116</td>
<td>Multimedia Portfolios Development</td>
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<tr>
<td>ARTDM-117</td>
<td>Image and Motion Graphics</td>
<td>3</td>
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<tr>
<td>ARTDM-118</td>
<td>Typography</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-119</td>
<td>Figure Drawing and its Application to 2-D Media</td>
<td>3</td>
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plus 8-9 units from one of the 6 specialty areas listed below*: character animation

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ART-107</td>
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<td>ARTDM-165</td>
<td>Cartoon Drawing for Digital Animation</td>
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</tr>
<tr>
<td>ARTDM-166</td>
<td>Intermediate Cartoon Drawing for Digital Animation</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-170</td>
<td>Animation and Interactivity</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-172</td>
<td>Introduction to Electronic Music and MIDI</td>
<td>3</td>
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<tr>
<td>MUSIC-173</td>
<td>Advanced Electronic Music</td>
<td>3</td>
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<tr>
<td>MUSIC-174</td>
<td>Introduction to Pro Tools</td>
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digital imaging

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<th>Units</th>
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<tbody>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
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<tr>
<td>ARTDM-115</td>
<td>Digital Imaging Process and Technique III</td>
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<tr>
<td>ARTDM-214</td>
<td>Introduction to Graphic Design</td>
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motion graphics

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<th>Course Title</th>
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<tr>
<td>ARTDM-140</td>
<td>Motion Graphics</td>
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<tr>
<td>ARTDM-145</td>
<td>Digital Editing</td>
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3D modeling and animation

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<th>Course Title</th>
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<td>ARTDM-160</td>
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<tr>
<td>ARTDM-161</td>
<td>3D Modeling and Animation II.</td>
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</tr>
<tr>
<td>ARTDM-165</td>
<td>Cartoon Drawing for Digital Animation</td>
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web design

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<tbody>
<tr>
<td>ARTDM-170</td>
<td>Animation and Interactivity</td>
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<tr>
<td>ARTDM-171</td>
<td>Introduction to Web Design</td>
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<tr>
<td>COMSC-195</td>
<td>WWW Publishing with HTML</td>
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<tr>
<td>COMSC-196</td>
<td>Advanced WWW Publishing</td>
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plus at least 9 units from:

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<tr>
<td>ART-106</td>
<td>Drawing II.</td>
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</tr>
<tr>
<td>ART-107</td>
<td>Figure Drawing</td>
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<td>ART-125</td>
<td>Color Theory and its Application to 2-D Media</td>
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<tr>
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<td>Digital Imaging for the Artist</td>
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<td>ARTDM-115</td>
<td>Digital Imaging Process and Technique III</td>
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<td>ARTDM-117</td>
<td>Digital Illustration</td>
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<tr>
<td>ARTDM-136</td>
<td>Introduction to Digital Photography</td>
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<td>ARTDM-140</td>
<td>Motion Graphics</td>
<td>3</td>
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<tr>
<td>ARTDM-166</td>
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</tr>
</tbody>
</table>

*Note: There may be no duplication of course units between specialty area requirements and restricted elective courses. Students are limited to one associate in arts degree regardless of the number of specializations completed.

total minimum required units 33.5
**Certificate of achievement – Graphic design**

This certificate program provides students with a strong foundation in the fundamental aspects of graphic design and digital art. Students develop creativity and ideation skills, learn the theories of communication design and apply this to a wide range of design situations. The program is hands-on, integrating conceptual design studies with traditional and digital tools and production methods. The program goal is to provide the skills necessary to enter this growing, professional field.

Some examples where students might find employment using their design and illustration skills might include website design and development, design and illustration of electronic magazines and books, design of interactive marketing presentations, interactive learning products, scientific visualizations, etc. Advanced students have the opportunity to complete professional career preparation courses that deal with specific business issues relevant for designers, illustrators, and digital artists.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and during the day.

**required courses**

<table>
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<tr>
<td>ART-105 Drawing I</td>
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<td>ART-106 Drawing II</td>
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<tr>
<td>ART-110 Introduction to Printmaking</td>
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<td>ART-138 Sculpture I</td>
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<td>ARTDM-117 Digital Illustration</td>
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<td>ARTDM-136 Introduction to Digital Photography</td>
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<td>ARTDM-171 Introduction to Web Design</td>
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<td>ARTDM-190 Digital Media Projects</td>
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<td>ARTDM-214 Introduction to Graphic Design</td>
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<td>ARTDM-224 Typography</td>
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<td>ARTHS-199 Contemporary Art History</td>
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**plus at least 3 units from:**

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<tr>
<td>ARTDM-110 Digital Imaging Process and Technique I</td>
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<td>ARTDM-111 Digital Imaging Process and Technique II</td>
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<tr>
<td>ARTDM-112 Digital Imaging for the Artist</td>
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</tbody>
</table>

**total minimum required units** 36

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and during the day.

**required courses**

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<tr>
<td>ARTDM-111 Digital Imaging Process and Technique II</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-130 Introduction to Digital Audio</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-149 Fundamentals of Digital Video</td>
<td>3</td>
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</table>

**plus at least 6 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>ARTDM-112 Digital Imaging for the Artist</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-115 Digital Imaging Process and Technique III</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-136 Introduction to Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-140 Motion Graphics</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-160 3D Modeling and Animation I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-161 3D Modeling and Animation II</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-170 Animation and Interactivity</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-171 Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-214 Introduction to Graphic Design</td>
<td>3</td>
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<tr>
<td>COMSC-195 WWW Publishing with HTML</td>
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<td>COMSC-196 Advanced WWW Publishing</td>
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<tr>
<td>MUSIC-172 Introduction to Electronic Music and MIDI</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-173 Advanced Electronic Music</td>
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**total minimum required units** 16.5

**Certificate of accomplishment – Art digital media - Foundation**

Art digital media is a set of technologies and techniques that can be used to enhance the presentation of information. Art digital media uses computers to create productions that bring together text, sounds, animation, graphic art and video to educate, inform and entertain. Classes are designed to serve both working professionals who wish to upgrade their skills and students who wish to enter the field.

**ARTDM-110 Digital Imaging Process and Technique I**

1.5 units  SC  
- 18 hours lecture/27 hours laboratory per term  
- Note: Basic computer editing and file management skills. Credit by examination option available.

This course covers basic design concepts, processes, and aesthetic interpretation of making digital imagery. The course will provide students with experience creating computer graphics and with experience in editing digital images from scanned photographs and digital photography. CSU

**ARTDM-111 Digital Imaging Process and Technique II**

1.5 units  SC  
- 18 hours lecture/27 hours laboratory per term  
- Recommended: ARTDM-110 or equivalent

This course builds on the introductory concepts of digital imaging and covers design concepts, processes, and aesthetic interpretation of making digital imagery. Students will learn advanced digital imaging techniques and will be further exposed to design and composition. CSU
ARTDM-112  Digital Imaging for the Artist
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-105 or equivalent; eligibility for ENGL-116/118 or equivalent
- Formerly ART-112
This is a course in digital imaging for the artist. This course is designed to develop a fine arts approach to computer-generated imaging. Students will utilize leading graphic arts software programs. An emphasis will be placed on the application and integration of color theory as well as design principles with digital imaging. CSU, UC.

ARTDM-115  Digital Imaging Process and Technique III
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-111 or equivalent
This intermediate digital imaging course builds on the foundation learned in ARTDM-111. The deeper and more complex topics of digital imaging will be covered. Students will explore digital imaging for interface design as well as the creation of graphics for print, web, video, motion graphics, and interactive CD/DVD content. Design and content will be stressed. Topics will include advanced image compositing, advanced color correction, filters, vectors, and text. CSU.

ARTDM-117  Digital Illustration
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-111 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed.
This course introduces students to digital illustration. Students will engage in the production of vector graphics suitable for printing and the web. Emphasis will be given to fundamentals of design and composition. Instruction will utilize a variety of software programs including Adobe Illustrator. CSU.

ARTDM-130  Introduction to Digital Audio
1.5 units  SC
- 18 hours lecture/27 hours laboratory per term
- Note: Basic computer editing and file management skills
This is an introductory course about the application of audio to various forms of digital media. The course covers how to capture, edit and create digital audio for CD-ROM, DVDs, video and the Internet. The course will involve hands-on work with a variety of digital workstations and multimedia software applications. CSU.

ARTDM-136  Introduction to Digital Photography
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-105 or equivalent
- Note: Students must have digital camera with manual functions
This introductory course focuses on the required skills to create effective digital photographs using digital cameras. Students will be introduced to the fundamental principles of image making, composition, color theory, color management, lighting, image processing, and printing with a specific focus on digital photographic practice in fine art. CSU, UC.

ARTDM-140  Motion Graphics
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-110 or equivalent
This introductory course focuses on the creative design skills required to create effective motion graphics. Students will learn how to create motion graphics and output them utilizing digital video and various graphics file formats. The theory and production of animated 2-D graphics for time-based media environments will be introduced, focusing on animating typography, graphic objects, and still images. Various software applications will be used including Adobe After Effects. CSU.

ARTDM-145  Digital Editing
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Note: Same as FILM-165 and BCA-165
An introduction to the techniques, concepts and aesthetics of digital non-linear, computerized editing for film, television and digital media. The student will become familiar with various professional software programs and develop an understanding of organization, timelines and story as well as editing for visual and audio effect. CSU.

ARTDM-149  Fundamentals of Digital Video
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Note: Students should be proficient in basic computer editing and file management skills
This is an introductory course about the application of video to various forms of digital media. The course covers how to capture, edit and create digital video for DVDs and the Internet. The course will involve hands-on work with a variety of digital workstations and multimedia software applications. CSU.

ARTDM-150  Topics in Digital Media
.5-4 units  SC
- Variable hours
A supplemental course in digital media to provide a study of current concepts and problems in digital media. Specific topics will be announced in the schedule of classes. CSU.
ARTDM-160 3D Modeling and Animation I
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-110 or equivalent
This course covers the basic concepts of 3D modeling and animation. The fundamentals of computer geometry are taught by looking at the basic elements that make computer models: Cartesian Space, points, curves, surfaces, nurbs, polygons and textures. Students will explore production of three-dimensional computer animation. Modeling, animation, lighting, texture mapping and rendering are introduced. Several hands-on 3D animation projects will be planned, storyboarded, designed, and then produced. CSU

ARTDM-161 3D Modeling and Animation II
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-160 or equivalent
Building on the skills acquired in 3D Modeling and Animation I, this course will focus on the creation of short animated movies. Students will explore the principles that govern animation and learn techniques for implementing them in 3D. CSU

ARTDM-165 Cartoon Drawing for Digital Animation
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ART-105 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed. Credit by examination option available.
This course will introduce students to the skills necessary to create character animations, script development and storyboard animations. Students will survey the history of animation and be exposed to the techniques of animated drawing. It is designed to prepare students to develop a particular style of animation in any of a wide variety of other digital media courses. This course is designed as a good companion to and/or preparation for ARTDM-170 and/or ARTDM-160. CSU

ARTDM-166 Intermediate Cartoon Drawing for Digital Animation
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ART-165 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed.
This course addresses fluidity of movement, multiple visual perspectives, and creating a unified cast of characters for digital animation. Through a series of projects and experiments we will explore these subjects and discover how to create an animator’s “story bible.” CSU

ARTDM-170 Animation and Interactivity
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-110 or equivalent
This course will provide an introduction to animated web design which includes fundamentals of cell-based animation and the integration of sound and video elements. Design concepts that are unique to the World Wide Web’s nonlinear, interactive features are emphasized. Publishing multimedia websites will also be covered. The course will also involve hands-on work with a variety of computer workstations and applications. CSU

ARTDM-171 Introduction to Web Design
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-110 or equivalent
This introductory course focuses on the creative design skills required to create effective web page designs using XHTML, CSS and a variety of software packages. The basic principles of type, color, illustration and layout are explored. The students develop an understanding of the internet and the World Wide Web in a series of hands on exercises. CSU

ARTDM-175 Digital Animation
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Note: Students may petition to repeat this course when software or hardware is changed.
This course will introduce students to 2-D digital animation techniques for production animation. This course will follow a basic production pipeline to immerse students in the animation process. Students will compare 3D and 2-D techniques and how to mix the two. Students will create and animate their own characters, as well as scenery, props and special effects. Students will be introduced to audio recording for lip-sync and special effects. CSU

ARTDM-190 Digital Media Projects
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ART-105, ARTDM-111, 130, 149 or equivalents
This advanced course is designed for students who are preparing for employment in the digital media industry. Students will work on special production-oriented projects in digital media including client-driven multimedia projects. Working independently and in teams, students will use the design, tool, and business skills they have developed in prior terms to create digital media projects. Students will involve themselves in the production process and create presentations combining a variety of digital media. CSU
ARTDM-191 Multimedia Portfolio Development
3 units SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ART-105, ARTDM-110, 111, 130, 149 or equivalents

This advanced course is designed for students who are preparing for employment in the multimedia industry. Students will explore multimedia career opportunities and the basic principles of professional portfolio preparation for digital media. Students will have the opportunity to view professional portfolios and present their own portfolios to their class peers. CSU

ARTDM-195 Applied Production for Digital Media
3 units SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-190 or equivalent

This course is designed to give students applied production and business experience with a wide variety of client-driven digital media projects. Working independently and in teams, students will build upon the design, tools, and business skills developed in prior coursework. Students will involve themselves in the production process and create projects to meet client specifications. Students will also be intimately involved with the decision making process for running an independent multimedia business. Projects will vary significantly from term to term as well as within the course of a term. CSU

ARTDM-214 Introduction to Graphic Design
3 units SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed.

Fundamentals of graphic design including history, theory and practice. Students will use graphic design as a means of communicating ideas in a digital environment. Specific focus will be given to principles of design; balance and visual hierarchy; integration of text and image. Students will survey the history of 20th century design as a basis for exploring and understanding graphic design fundamentals. CSU, UC

ARTDM-224 Typography
3 units SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent

Fundamentals of typography including history, theory, and practice, study of letterforms and type design. Emphasis is on the vocabulary of typographic form and its relationship to message and purpose. CSU, UC

ARTDM-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ART HISTORY – ARTHS

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Possible career opportunities
Students can pursue careers as curators or archivists at the many museums and galleries across the country. Careers in media, advertising, publishing, fashion or design, as well as art therapy, and working with handicapped or disabled people are also open to art history students. Undergraduate art history majors can pursue advanced training in art history, archaeology, architecture, law, library and information science, business, and education.

ARTHS-190 Topics in Art History
.3-4 units SC
- Variable hours
- Recommended: Eligibility for ENGL-116/118 or equivalent

A supplemental course in art history to provide a study of current concepts and problems in art history. Specific topics will be announced in the schedule of classes. CSU

ARTHS-193 History of Asian Art
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-116/118 or equivalent

An introduction to major art forms and traditions in Asia from prehistory to the present. Artists, patrons, cultures, religions, and their intersections will be covered. Comparisons will be drawn between the course material and other artistic traditions, especially Western societies. CSU, UC
ARTHS-195  History of Prehistoric and Ancient Art
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-116/118 or equivalent
A history of Western art from the Paleolithic through the end of the Roman period and the beginning of early Christian art. Archeological and anthropological problems are discussed in relation to the study of art styles. The social and cultural background of ancient civilizations and role of the artist will be considered. CSU, UC

ARTHS-196  History of Medieval and Renaissance Art
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-116/118 or equivalent
A history of Western art from the Early Christian Period through the Renaissance. Stylistic changes are related to significant social and cultural changes. Consideration is given to the changing role of the artist, socially, culturally, and within patronage systems. CSU, UC

ARTHS-197  History of Baroque to Early 20th Century Art
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-116/118 or equivalent
A history of Western art from the 17th century to early 20th century. Stylistic changes are related to significant social and cultural changes. Consideration is given to the changing role of the artist. CSU, UC

ARTHS-199  Contemporary Art History
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
A survey of contemporary art in the United States and Europe from 1945 to the present. Recent global tendencies in art will also be considered. Emphasis is placed on identifying and understanding important contemporary art movements and images, as well as social and political issues that shape the character of art produced during this time. CSU, UC

ARTHS-299  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ASTRONOMY

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
Considered a branch of physics, astronomy is really a marriage of the physical sciences from planetary science and atmospheric science, to physics and chemistry. Study in astronomy prepares students for careers in scientific research, systems analysis and engineering, as well as software engineering and development. More than two years of college study is usually required.

ASTRO-110  The Visible Universe
3 units  LR
• 54 hours lecture per term
• Recommended: MATH-090 or equivalent; eligibility for ENGL-122 or equivalent
Fundamental concepts in astronomy and observational techniques including selected mathematical concepts used in developing an understanding of celestial motions and coordinate systems and their importance to humanity. The planetarium sky is a major learning tool. CSU, UC (credit limits may apply to UC - see counselor)

ASTRO-120  Elementary Astronomy
3 units  LR
• 54 hours lecture per term
• Recommended: MATH-090 and MATH-114 and eligibility for ENGL-122 or equivalents
Elementary mathematical approach to the solving of problems relating to solar and stellar systems. Topics include instrumentation used for and the analysis of electromagnetic radiation. Properties and evolution of stars and galaxies as well as their role in the evolution of the universe will be the major emphasis. CSU, UC (credit limits may apply to UC - see counselor)
ASTRO-128 The Universe for Beginners
4 units LR
- 54 hours lecture/54 hours laboratory per term
- Recommended: MATH-090, and eligibility for ENGL-122 or equivalents
This course provides an overview of our current state of knowledge concerning the universe and the methods astronomers use to arrive at their conclusions. Students will observe the sky and physical phenomena and will solve astronomical problems to solidify their knowledge and skills. The internet will be used extensively. CSU, UC (credit limits may apply to UC - see counselor)

ASTRO-130 Astronomy Laboratory
1 unit LR
- 54 hours laboratory per term
- Prerequisite: ASTRO-110 or 120 or equivalent (may be taken concurrently)
The laboratory experience will involve the study of the fundamentals of astronomy and will include investigations of the sun, moon, planets, stars and galaxies. Telescopes and other instruments will be used by students to gather data. Students will analyze data they have collected as well as that collected by others. CSU, UC

ASTRO-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to pursue special interests under the direction of the faculty. CSU

ASTRO-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

BIOLOGICAL SCIENCE – BIOSC
Diablo Valley college is approved by the California Board of Registered Nurses for continuing education credits. Biological Science courses which can be used are BIOSC-119, 120, 139, 140 and 146.

Tish Young, dean
Biological and Health Science Division
Physical Sciences Building, Room 263

Possible career opportunities
Completion of the biology program prepares students for advanced study, for careers in government, industry, or secondary-school teaching. The program also partially satisfies the entrance requirements for medical and dental schools. Career options include: researcher, educator, laboratory technician, botanist, ecologist and field technician.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this chapter of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degrees
- Allied health
- Biology
- Life science
- Natural science

Certificates of achievement
- Allied health
- Allied health fundamentals

Associate in science degree - Allied health
The associate in science degree with a major in allied health is a transfer degree for students who wish to transfer to a four year institution with a major in an allied health field. These fields include, but are not limited to, nursing, radiological sciences, physical therapy, occupational health, and dental hygiene. The degree offers students a broad general education, and provides basic knowledge in microbiology, human anatomy and physiology, and nutrition (as stated in the courses learning objectives). These are common prerequisites for above mention four-year majors, while also preparing students for more advanced allied health courses. Degree requirements for four-year programs differ from institution to institution, so students wishing to transfer to a particular four-year program should consult a counselor regarding specific course requirements for that particular program.
The DVC allied health major is intended for transfer. Students wishing to transfer must consult with a counselor regarding other courses in math, chemistry and physics that may be required by the four-year institution to which they intend to transfer. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.

To earn an associate in science degree with a major in allied health, students must complete each course used to meet a major requirement with a “C” grade or higher and complete all general education requirements as listed in the catalog. Major requirements may be taken only on a “for grade” basis. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

### Associate in science degree - Biology

The DVC biology major is intended to transfer. Students wishing to transfer must consult with a counselor regarding other courses in math, chemistry and physics that may be required by the four-year institution to which they intend to transfer. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.

To earn an associate in science degree with a major in biology, students must complete each course used to meet a major requirement with a “C” grade or higher and complete all general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

### Associate in science degree - Life science

The associate in science degree with a major in life science is designed as a two-year program that offers a broad general education background and an introduction to the basic principles of biology and the supporting knowledge of chemistry needed to fully understand and appreciate biology. Furthermore, courses in three categories of life science are offered from which students select a minimum of twelve units. These categories emphasize I: health science, II: field sciences and III: cellular and molecular biology.

The associate degree in life science is not designed to transfer as major preparation for a baccalaureate degree. DVC life science students who intend to transfer must consult with a program advisor or counselor to ensure that other major preparation courses in math, chemistry, physics and other transfer requirements at the four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU G.E.). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate in science degree with a major in life science, students must complete each course used to meet a major requirement with a “C” grade or higher and complete all general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.
plus at least 12 units from the following areas of specialization; with at least 3 units from each area.

### Health
- BIOSC-120 Introduction to Human Anatomy and Physiology
- BIOSC-139 Human Anatomy
- BIOSC-140 Human Physiology
- NUTRI-160 Nutrition: Science and Applications

### Field Studies
- BIOSC-126 Nature Study and Conservation
- BIOSC-131 Principles of Organismal Biology, Evolution and Ecology
- BIOSC-161 Fundamentals of Marine Biology
- BIOSC-162 Fundamentals of Marine Biology with Laboratory
- BIOSC-170 Environmental Science
- BIOSC-171 Environmental Science with Laboratory
- BIOSC-205 Fundamentals of Plant Biology
- HORT-148L California Native Plants Laboratory
- OCEAN-102 Fundamentals of Oceanography with Laboratory

### Cellular Biology
- BIOSC-107 Genetics and Evolution
- BIOSC-130 Fundamentals of Cellular and Molecular Biology
- BIOSC-146 Principles of Microbiology

**Total minimum required units:** 20

## Associate in Science Degree - Natural Science

The associate in science degree in letters and science with an area of emphasis in natural sciences is designed as a two-year program that offers a broad general education background and an introduction to the diverse field of the natural sciences. This degree is an appropriate choice for students who seek breadth in their knowledge of the sciences or for those starting their preparation for a career in elementary education (multi subject), secondary education (single subject), journalism, liberal arts, environmental sciences, etc. Students may transfer to a science-related major or career/technical program or may work in a science-related field.

This degree, however, is not designed to present the complete lower division preparation for a major in a traditional scientific field. DVC natural science students who intend to transfer must consult with a program advisor or counselor to ensure that other major preparation courses such as mathematics and other transfer requirements at the four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU Breadth). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate in science degree in letters and science with an area of emphasis in natural sciences, students must complete each course used to meet a major requirement with a “C” grade or higher and complete all general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however the units are only counted once.

**Major requirements - Students will select 18 units from courses in the biological sciences and physical sciences.**

### Biological Science

- **Minimum of 6 units required (four of the six units must be from IGETC approved courses that include a laboratory):**
  - BIOSC-101 Fundamentals of Biological Science
  - BIOSC-102 Fundamentals of Biological Science with Laboratory
  - BIOSC-107 Genetics and Evolution
  - BIOSC-116 Human Biology
  - BIOSC-117 Human Biology with Laboratory
  - BIOSC-119 Fundamentals of Microbiology
  - BIOSC-120 Introduction to Human Anatomy and Physiology
  - BIOSC-126 Nature Study and Conservation
  - BIOSC-130 Principles of Cellular and Molecular Biology
  - BIOSC-131 Principles of Organismal Biology, Evolution and Ecology
  - BIOSC-139 Human Anatomy
  - BIOSC-140 Human Physiology
  - BIOSC-146 Principles of Microbiology
  - BIOSC-161 Fundamentals of Marine Biology
  - BIOSC-170 Environmental Science
  - BIOSC-171 Environmental Science with Laboratory
  - HORT-110 Introduction to Horticulture
  - HORT-148L California Native Plants Laboratory
  - NUTRI-160 Nutrition: Science and Applications

### Physical Science

- **Minimum of 6 units required (four of the six units must be from IGETC approved courses that include a laboratory):**
  - ASTRO-110 The Visible Universe
  - ASTRO-120 Elementary Astronomy
  - ASTRO-128 The Universe for Beginners
  - ASTRO-130 Astronomy Laboratory
  - ASTRO-298 Independent Study
  - CHEM-106 Chemistry for Non-Science Majors
  - CHEM-108 Introductory Chemistry
  - CHEM-109 Introduction to Organic and Biochemistry
  - CHEM-120 General College Chemistry I
  - CHEM-121 General College Chemistry II
  - CHEM-226 Organic Chemistry I
  - CHEM-227 Organic Chemistry II
  - CHEM-298 Independent Study
  - GEOG-120 Physical Geography
  - GEOG-121 Physical Geography Laboratory
  - GEOG-125 Introduction to Geographic Information Systems (GIS)
  - GEOG-126 Advanced Geographic Information Systems
  - GEOG-127 Introduction to Global Positioning Systems
  - GEOG-128 Advanced Global Positioning Systems
GEOG-140 Introduction to Weather .......................... 3
GEOG-141 Introduction to Weather Laboratory ................. 1
GEOG-160 Introduction to Remote Sensing .................... 4
GEOG-162 Maps and Cartography .................................. 3
GEOG-298 Independent Study ...................................... 0.5-3
GEOL-120 Physical Geology ........................................ 3
GEOL-121 Earth and Life Through Time ....................... 3
GEOL-122 Physical Geology Laboratory ........................... 1
GEOL-124 Earth and Life Through Time Laboratory ............. 1
GEOL 125 Geology of California .................................. 3
GEOL-298 Independent Study ...................................... 0.5-3
OCEAN-101 Fundamentals of Oceanography ...................... 3
OCEAN-102 Fundamentals of Oceanography with Laboratory ... 4
PHYS-110 Elementary Physics ..................................... 3
PHYS-111 Physics Laboratory ..................................... 2
PHYS-113 Elementary Modern Physics: From Atoms to the Big Bang .......................... 3
PHYS-120 General College Physics I .................................. 4
PHYS-121 General College Physics II ......................... 4
PHYS-124 Calculus Supplement for Physics-120 ................. 0.5
PHYS-125 Calculus Supplement for Physics-121 ................. 0.5
PHYS-129 Introductory Physics for Engineers ...................... 4
PHYS-130 Physics for Engineers and Scientists A: Mechanics and Wave Motion ................. 4
PHYS-230 Physics for Engineers and Scientists B: Health and Electro-Magnetism ................. 4
PHYS-231 Physics for Engineers and Scientists C: Optics and Modern Physics ................. 4
PHYS-C12 Fundamentals of Physical Science ...................... 3
PHYS-C298 Independent Study ...................................... 0.5-3

**total minimum units for the major** 18

**Certificate of achievement - Allied health fundamentals**

This program prepares the student for entry into some health professional programs or jobs in the medical field that do not require degrees. These courses provide some of the prerequisites for advanced training in the medical field for such occupations as nursing, dental hygiene, physical therapy, occupational therapy, medical laboratory technician, and radiological sciences.

To earn a certificate of achievement, students must complete the required courses with a "C" grade or higher. Course requirements are typically available in the day and evening. Students may also earn a certificate of achievement in allied health or an associate in science degree in allied health.

Students who intend to transfer to a four-year program should consult with a counselor regarding course and program requirements.

**required course**  
units

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<tr>
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**plus at least 4 units from:**  
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<tr>
<td>BIOSC-119 Fundamentals of Microbiology</td>
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<td>BIOSC-146 Principles of Microbiology</td>
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</tbody>
</table>

**total minimum required units** 12

**BIOSC-101 Fundamentals of Biological Science**

3 units  SC

- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: This course does not include a laboratory. Students requiring or wanting a laboratory to accompany this course should enroll in BIOSC-102.

A selection of biological concepts which are relevant to the student and to other college courses. Inquiry into the process of evolution by means of natural selection, cell structure and function, plant and animal growth and development, reproduction, genetics and homeostasis within and among living things, populations and communities. CSU, UC (credit limits may apply to UC - see counselor).
BIOSC-102  **Fundamentals of Biological Science with Laboratory**  
4 units  SC  
- 72 hours lecture/36 hours laboratory per term  
- **Recommended:** Eligibility for ENGL-122 or equivalent  
- **Note:** Not open to students who have taken BIOSC-101  
A study of the process of evolution by means of natural selection, cell structure, function and reproduction, plant and animal growth and development, genetics and homeostasis within and among living things, populations and communities. A laboratory component is included that introduces scientific method and experimentation, including data gathering and analysis with a variety of scientific equipment. CSU, UC (credit limits may apply to UC - see counselor)  

BIOSC-107  **Genetics and Evolution**  
4 units  SC  
- 72 hours lecture/36 hours laboratory per term  
- **Recommended:** Eligibility for ENGL-122 or equivalent  
This course includes a study of various aspects of genetics and evolution. Topics may include cellular reproduction, Mendelian Genetics, DNA structure and function, protein synthesis, gene regulation, biotechnology, genetically modified organisms and gene therapy as well as an introduction to the process of evolution by means of natural selection and the social implications of these topics. A laboratory component includes an introduction to the scientific method and experimentation including data gathering and analysis with a variety of scientific equipment. Laboratory activities will include manipulating DNA, conducting genetic crosses and constructing cladograms. CSU, UC (credit limits may apply to UC - see counselor)  

BIOSC-116  **Human Biology**  
3 units  SC  
- 54 hours lecture per term  
- **Recommended:** Eligibility for ENGL-122 or equivalent  
- **Note:** Not open to students who have taken BIOSC-117, 120, 139, or 140  
The broad concepts and principles of biology as applied to humans. Topics include human evolution, ecology, human genetics, DNA structure and function, disease factors, nutrition and metabolism, growth and development and a survey of body systems. CSU, UC (credit limits may apply to UC - see counselor)  

BIOSC-117  **Human Biology with Laboratory**  
4 units  SC  
- 72 hours lecture/36 hours laboratory per term  
- **Recommended:** Eligibility for ENGL-122 or equivalent  
- **Note:** Not open to students who have taken BIOSC-116, 120, 139, or 140  
The basic principles of biology will be covered, especially as they pertain to humans. Topics include cell structure, function and reproduction, human heredity, structure and function of a variety of human organ systems, ecology and evolution. A laboratory component is included that introduces the scientific method and experimentation, including data gathering and analysis with a variety of scientific equipment. CSU, UC (credit limits may apply to UC - see counselor)  

BIOSC-119  **Fundamentals of Microbiology**  
4 units  SC  
- 72 hours lecture/36 hours laboratory per term  
- **Prerequisite:** CHEM-108 or CHEM-109 or CHEM-120 or equivalent  
- **Recommended:** High school or college biology or chemistry; eligibility for ENGL-122; and MATH-120 or equivalents  
Fundamentals of microbiology with an emphasis on microbiology as it pertains to the allied health professions. Topics include: microscopy, cell structure and function, aseptic technique, culture and control of microbes, metabolism, microbial genetics, and biotechnology, medical microbiology and immunology, and microbes in the environment. CSU, UC (credit limits may apply to UC - see counselor)  

BIOSC-120  **Introduction to Human Anatomy and Physiology**  
5 units  SC  
- 90 hours lecture/72 hours laboratory per term  
- **Recommended:** High school or college biology or chemistry and eligibility for ENGL-122 or equivalents  
The structure and function of the human body stressing the levels of organization within the body, relationship between structure and function, and importance of maintaining relatively stable internal conditions for health and some health consequences resulting from loss of this stability. Hands-on laboratory work including microscopy, experiments, and dissection (including cadavers) reinforces the lecture material. CSU, UC (credit limits may apply to UC - see counselor)  

BIOSC-126  **Nature Study and Conservation**  
4 units  SC  
- 72 hours lecture/36 hours laboratory per term  
- **Recommended:** Eligibility for ENGL-122 or equivalent  
This non-majors biology course surveys the natural history of ecological communities in Northern California. Conservation of our natural resources is stressed. Frequent guided field laboratories emphasize: identification methods for native plants and animals; the ecology of the local communities; evolutionary adaptations and the influences of geological and meteorological phenomena on those communities. CSU, UC
BIOSC-130 Principles of Cellular and Molecular Biology
5 units  SC
- 90 hours lecture/72 hours laboratory per term
- Prerequisite: CHEM-120 or equivalent
- Recommended: BIOSC-101 or BIOSC-102 and eligibility for ENGL-122 or equivalents
- Note: It is strongly recommended to take BIOSC-130 before BIOSC-131. BIOSC-130 requires strong written and oral English language skills.

This course is intended for biology majors or other students with an in-depth interest in the biological sciences. The course studies the universal biological processes of all organismal life with an emphasis upon the cellular level of organization. Topics include principles of biochemistry, cellular morphology and ultra structure, biochemical pathways and enzymes, cellular communication, classical and molecular genetics, gene control, embryology, immunology, and selected topics of animal physiology with emphasis on homeostatic control mechanisms. The laboratory component focuses on methodologies necessary for analyzing molecular, cellular and genetic problems like microscopy, spectrophotometry, graphing and statistical analysis, as well as recombinant DNA technologies. As part of the laboratory component students will design, execute and present in written and oral format an experimental research project. All aspects of the project will follow the format of a standard scientific investigation which includes the research, evaluation and appropriate incorporation of information already published in primary sources. CSU, UC.

BIOSC-131 Principles of Organismal Biology, Evolution and Ecology
5 units  SC
- 90 hours lecture/72 hours laboratory per term
- Prerequisite: CHEM-120 or equivalent
- Recommended: BIOSC-130 and eligibility for ENGL-122 or equivalents
- Note: It is strongly recommended to take BIOSC-130 before BIOSC-131. BIOSC-131 requires strong written and oral English language skills.

This course is intended for biology majors or other students with an in-depth interest in the biological sciences. The course focuses on universal biological processes with emphasis on the whole organism and higher levels of organization. The course is formed around three main biological principles: evolution, unity/diversity of life, and ecology. Topics include: evidence and mechanisms of evolution and speciation; evolutionary history and diversity of life; general, population and community ecology; ecosystems and environmental concerns; plant physiology. The laboratory covers similar themes with hands-on observations, dissections, laboratory activities and field exercises. CSU, UC.

BIOSC-139 Human Anatomy
5 units  SC
- 90 hours lecture/72 hours laboratory per term
- Recommended: BIOSC-102 and eligibility for ENGL-122 or equivalents

The physical structure of the human body as an integrated unit is studied stressing normal structure and the changes that occur with aging and disease. The course content is appropriate for majors in physical and health education; nursing; physical, occupational and respiratory therapy; paramedical; nurse practitioner and physician assistant programs. Gross anatomy will be studied primarily through cadaver dissection in conjunction with preserved specimens, student self-reference, models and charts. Microscopic anatomy (histology) will be studied mainly through the use of microscope slides. CSU, UC (credit limits may apply to UC - see counselor).

BIOSC-140 Human Physiology
5 units  SC
- 90 hours lecture/72 hours laboratory per term
- Prerequisite: BIOSC-120 or BIOSC-139 and CHEM-108 or one year high school chemistry or CHEM-109 or CHEM-120 or equivalents
- Recommended: BIOSC-102; eligibility for ENGL-122; MATH-120 or equivalents

The lectures are designed to help students understand the physiological mechanisms of the human body. Special emphasis will be given to regulatory mechanism on the cell and organ-system level employing chemical, mathematical and physical principles. The laboratory section will focus on the application, analysis and evaluation of major physiological principles using molecular technologies, bioelectronics, computer analysis, and/or live organisms. CSU, UC (credit limits may apply to UC - see counselor).

BIOSC-146 Principles of Microbiology
5 units  SC
- 90 hours lecture/72 hours laboratory per term
- Prerequisite: CHEM-108 or CHEM-109 or CHEM-120 or equivalent
- Recommended: Eligibility for ENGL-122 and MATH-120 or equivalents

Topics include microscopy, culture of microbes and aseptic technique, control and identification of microbes, bacterial biochemistry, metabolism and physiology, cell structure and function, microbial genetics, recombinant DNA and biotechnology, viruses and their life cycles, immunology, epidemiology and study of select infectious diseases. CSU, UC (credit limits may apply to UC - see counselor).
BIOSC-150  Topics in Biology
3-4 units  SC
• Variable hours
A supplemental course in biology to provide a study of current concepts and problems in biology and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

BIOSC-161  Fundamentals of Marine Biology
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: This course does not include a laboratory.
This course is an introduction to the diversity of marine organisms, the environments in which they live, and the relationships between species and organisms with their environments. Lecture topics will include: the scientific method and its utilization in the marine sciences; properties of the marine environment; marine organisms (including their diversity and evolutionary adaptations); marine ecosystems with a focus on local estuarine and coastal environments; marine ecology; and the sustainable use of marine biological resources. CSU, UC

BIOSC-162  Fundamentals of Marine Biology with Laboratory
4 units  SC
• 72 hours lecture/36 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Students who have taken Fundamentals of Marine Biology with Laboratory, BIOSC-162, will not receive credit for Fundamentals of Marine Biology with Laboratory (BIOSC-162). This course will include field trips outside of regularly scheduled class time.
• Formerly BIOSC-160
This course is an introduction to marine organisms, marine environments, and the ecological relationships that exist between them. Lecture topics will include: the scientific method and its utilization in the marine sciences; physical, chemical and geological properties of the marine environment; marine organisms (including their taxonomic classification, diversity and evolutionary adaptations); marine ecosystems; marine ecology. Laboratory topics will include: observation and dissection of representative marine organisms; and inquiry based comparison of organisms in different phyla and from different habitats. CSU, UC

BIOSC-170  Environmental Science
3 units  SC
• 54 hours lecture per term
• Recommended: BIOSC-101 or 102 or equivalent; eligibility for ENGL-122 or equivalent
• Note: Class trips may be organized to local sites related to course topics
An introductory course designed to expose students to environmental science. This course will examine human interactions with the environment and their consequences for living and nonliving systems. Topics may include but are not limited to evolution, ecology, biodiversity, human population dynamics, natural resource use, pollution, environmental degradation, climate change, marine and freshwater resources, and environmental policy. CSU, UC (credit limits may apply to UC - see counselor)

BIOSC-171  Environmental Science with Laboratory
4 units  SC
• 72 hours lecture/36 hours laboratory per term
• Recommended: BIOSC-101 or BIOSC-102 or equivalent; eligibility for ENGL-122 or equivalent
• Note: Class trips may be organized to local sites related to course topics
An introductory course designed to expose students to environmental science with a laboratory. The lecture component will examine human interactions with the environment and their consequences for living and nonliving systems. Topics may include but are not limited to evolution, ecology, biodiversity, human population dynamics, natural resource use, pollution, environmental degradation, climate change, marine and freshwater resources, and environmental policy. The laboratory component will be in conjunction with the lecture. It will introduce the scientific method, including experimental design, sampling methods, data gathering and analysis. Laboratory and field techniques will be used to study concepts such as natural selection, climate change, biodiversity, and air and water pollution and its effects on organisms. Some laboratories may involve field trips to different ecosystems where various field collection techniques will be used to study ecological concepts. Emphasis will be placed on proper data collection and analysis techniques as well as representing those data in graphical form. CSU, UC (credit limits may apply to UC - see counselor)

BIOSC-205  Fundamentals of Plant Biology
4 units  SC
• 72 hours lecture/36 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
This non-majors biology course is an introduction to the science of biology by studying fundamental biological concepts with emphasis on plants. Topics studied include plant cell structure and function, metabolism, genetics, evolution, plant physiology, plant reproduction, plant diversity, and ecology. Economic uses of plants and some aspects of plant biotechnology are also studied. CSU, UC
**BIOSC-299  Student Instructional Assistant**

.5-3 units  SC
- Variable hours
- **Note:** Applications must be approved through the Instruction Office. Students must be supervised by a DVC Instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

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**BROADCAST COMMUNICATION ARTS – BCA**

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

**Possible career opportunities**

Students majoring in BCA enter broadcasting, cable, online media, and related industries. They can pursue graduate degrees in the field of mass or electronic communication, for work in audio and video production, web development, radio and television, cable television, and media departments of agencies, institutions, and businesses.

**Program level student learning outcomes**

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

**Associate in arts degree**

Broadcast communication arts

**Certificate of achievement**

Broadcast communication arts

**Certificates of accomplishment**

Broadcast communication arts -
- Basic digital field production
- Basic studio production
- Basic writing for digital medium

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**Associate in arts degree - Broadcast communication arts**

The associate degree program in broadcast communication arts is designed as a two year curricular pathway that offers a broad general education while preparing students for entry-level positions in the broadcast communication industries such as: associate producer, assistant director, on-camera talent, camera operator, sound technician, video switcher, floor director, videotape editor, production assistant, radio board operator, radio producer, radio production engineer, and radio on-air talent.

Students must complete each of the required courses with a “C” grade or higher. Required courses can only be completed by attending a combination of day and evening classes. Certain courses may satisfy both major and general education requirements; however, the units are only counted once. Selected courses in the program may also meet some lower division requirements for bachelor of arts programs at certain California State University campuses. Students who intend to transfer are advised to consult with a counselor regarding specific requirements.

**major requirements**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tr>
<td>ARTOM-110</td>
<td>Digital Imaging Process and Technique I</td>
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<td>BCA-120</td>
<td>Introduction to TV Studio Production</td>
<td>3</td>
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<td>BCA-125</td>
<td>Introduction to Digital Film Style Production</td>
<td>3</td>
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<td>BCA-130</td>
<td>Intermediate TV Studio Production</td>
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<tr>
<td>BCA-140</td>
<td>History of Broadcasting</td>
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<td>BCA-165</td>
<td>Digital Editing</td>
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**plus at least 3 units from:**

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<tbody>
<tr>
<td>BCA-290</td>
<td>Beginning Writing for Digital Media</td>
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<tr>
<td>JRNAL-110</td>
<td>Mass Media of Communication</td>
<td>3</td>
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**plus at least 3 units from:**

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<tr>
<td>BCA-110</td>
<td>Introduction to Radio Production</td>
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<td>BCA-126</td>
<td>Intermediate Digital Field Production</td>
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<td>Advanced TV Studio Production</td>
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<td>Intermediate Digital Editing</td>
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<td>BCA-190</td>
<td>Topics in Broadcast Communication Arts</td>
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<tr>
<td>FILM-293</td>
<td>Fundamentals of Film Making</td>
<td>0.3-4</td>
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<td>Applied Production for Digital Media</td>
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<td>COOP-170</td>
<td>Occupational Work Experience Education</td>
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<td>COOP-180</td>
<td>Internship in Occupational Work Experience Education</td>
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**plus at least 6 units from:**

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<td>Fundamentals of Digital Video</td>
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<td>Animation and Interactivity</td>
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BROADCAST COMMUNICATION ARTS

**Certificate of achievement - Broadcast communication arts**

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Selected courses in the program may meet some lower division requirements for the bachelor of arts program at certain California State University campuses. Consult with department faculty or a college counselor for more information.

To earn a certificate of achievement, students must complete each of the required courses with a "C" grade or higher. Required courses can only be completed by attending a combination of day and evening classes.

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<td>Performance of Literature</td>
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<td>Basic Principles of Acting</td>
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<td>Acting on Camera</td>
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<td>The Short Story</td>
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<td>Introduction to Film: American Cinema 1900-1950</td>
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<td>Introduction to Film: World Cinema 1900-1960</td>
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<td>FILM-282</td>
<td>Introduction to Film: American Cinema 1950 to the Present</td>
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<td>Introduction to Film: World Cinema 1960 to the Present</td>
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<td>FILM-290</td>
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<td>Fundamentals of Film Making - Beginning</td>
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*Note: There may be no duplication of course units between major requirements and elective courses.*

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<td>Introduction to Film: World Cinema 1960 to the Present</td>
<td>3</td>
</tr>
<tr>
<td>FILM-290</td>
<td>Film and TV Scriptwriting - Beginning</td>
<td>3</td>
</tr>
<tr>
<td>FILM-292</td>
<td>Fundamentals of Film Making - Beginning</td>
<td>3</td>
</tr>
<tr>
<td>FILM-293</td>
<td>Fundamentals of Film Making - Intermediate</td>
<td>3</td>
</tr>
<tr>
<td>total minimum required units</td>
<td>31.5</td>
<td></td>
</tr>
</tbody>
</table>

*Note: There may be no duplication of course units between required courses and elective courses.*
Certificate of accomplishment - Broadcast communication arts - Basic digital field production

The broadcast communication arts program prepares students for entry level in one of four specialty areas of broadcasting industry: studio production, field production, post production and writing.

To earn a certificate of accomplishment, students must complete each of the required courses with a “C” grade or higher. Required courses can only be completed by attending a combination of day and evening classes.

required courses  
BCA-125 Introduction to Digital Film Style  
Production .............................................. 3  
BCA-126 Intermediate Digital Field Production .... 3  
BCA-140 History of Broadcasting ...................... 3  
BCA-165 Digital Editing .................................. 3  

plus at least 3 units from:  
ARTDM-110 Digital Imaging Process and Technique I .... 1.5  
ARTDM-111 Digital Imaging Process and Technique II .... 1.5  
ARTDM-190 Digital Media Projects .............................. 3  
ARTDM-195 Applied Production for Digital Media ...... 3  
BCA-190 Topics in Broadcast Communication Arts ....... 0.3-4  
BCA-298 Independent Study .............................. 0.5-3  
COOP-170 Internship for Occupational Work Experience Education ........................................ 1-4  

total minimum required units 15

Certificate of accomplishment - Broadcast communication arts - Basic studio production

The broadcast communication arts program prepares students for entry level in one of four specialty areas of broadcasting industry: studio production, field production, post production and writing.

To earn a certificate of accomplishment, students must complete each of the required courses with a “C” grade or higher. Required courses can only be completed by attending a combination of day and evening classes.

required courses  
BCA-120 Introduction to TV Studio Production .......... 3  
BCA-130 Intermediate TV Studio Production .............. 3  
BCA-132 Advanced TV Studio Production ................. 3  
BCA-140 History of Broadcasting ............................ 3  

plus at least 3 units from:  
ARTDM-110 Digital Imaging Process and Technique I .... 1.5  
ARTDM-111 Digital Imaging Process and Technique II .... 1.5  
ARTDM-190 Digital Media Projects .............................. 3  
ARTDM-195 Applied Production for Digital Media ...... 3  
BCA-190 Topics in Broadcast Communication Arts ....... 0.3-4  

Certificate of accomplishment - Broadcast communication arts - Basic writing for digital medium

The broadcast communication arts program prepares students for entry level in one of four specialty areas of broadcasting industry: studio production, field production, post production and writing.

To earn a certificate of accomplishment, students must complete each of the required courses with a “C” grade or higher. Required courses can only be completed by attending a combination of day and evening classes.

required courses  
BCA-298 Independent Study .............................. 0.5-3  
COOP-170 Occupational Work Experience Education .... 1-4  
COOP-180 Internship for Occupational Work Experience Education ........................................ 1-4  

total minimum required units 15

BCA-110 Introduction to Radio Production  
3 units SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
Theoretical and practical aspects of sound, acoustics, and audio signal flow in radio, television, and recording operations. Students will learn radio announcing, voice-over techniques, vocal characterization, as well as writing for radio. Includes aesthetic considerations of sound mixing in broadcasting application, production procedures and student projects utilizing control consoles, microphones, tape and digital recording, and computerized audio editing. CSU

BCA-120 Introduction to TV Studio Production  
3 units SC  
• 36 hours lecture/54 hours laboratory per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
An introduction to multi-camera studio television production in a high definition digital video environment through demonstration and practice in switching, camera operation, audio, video tape, floor managing, directing, teleprompting, writing and producing. CSU
BCA-125  Introduction to Digital Film Style Production
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
The course teaches the student to execute short, single-camera digital videos by applying the introductory elements of the class including: camera operation and lens selection, audio recording, script development and visual concepts, lighting setup, digital production, and basic digital editing. CSU

BCA-126  Intermediate Digital Field Production
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Prerequisite: BCA-125 or equivalent
A course designed to increase the student’s skills in producing and directing electronic field production based programs, including preproduction planning, scripting, program concepts, directing, shooting and editing. CSU

BCA-130  Intermediate TV Studio Production
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Prerequisite: BCA-120 or equivalent
• Recommended: Eligibility for ENGL-122 or equivalent
An intermediate class designed to advance the student’s skills in producing and directing TV programs and operating television equipment in a high definition, digital video environment. The emphasis will be on producing and directing programs for cable casting. Designed to prepare students for positions in broadcast and cable TV as well as industrial television production facilities. CSU

BCA-132  Advanced TV Studio Production
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Prerequisite: BCA-130 or equivalent; eligibility for ENGL-122 or equivalent
An advanced class designed to increase the student’s skills in producing and directing TV programs and operating television equipment in a high definition, digital video environment. The emphasis will be on producing and directing programs for cable casting. Designed to prepare students for positions in broadcast and cable TV as well as industrial television production facilities. CSU

BCA-140  History of Broadcasting
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This is a survey course designed to provide the student with a fundamental knowledge of the history, trends, and the impact of electronic media on American society. Topic areas include: the role of government, radio and television regulatio-
BCA-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to study special interests under the direction of the faculty. CSU

BCA-299  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

Possible career opportunities - Business marketing
Study in business marketing prepares students for careers that examine the demand for products and services offered by a firm and its competitors. Along with identifying potential customers, marketing employees develop pricing strategies to maximize profits or markets share while ensuring customer satisfaction. Career professionals also participate in product development or monitor trends that indicate the need for new products and services.

Possible career opportunities - Business real estate
Professionals in real estate arrange, support, or coordinate the selling, buying, leasing, or commercial, industrial, or residential property. Careers may include working with homeowner associations, married or leased housing units, buildings, or land (including rights-of-way). Employees work in real estate offices, or for commercial real estate firms to arrange loans for the purchase of property.

Possible career opportunities - Wealth management
Careers in wealth management involve advising clients on financial plans using knowledge of tax and investment strategies, securities, insurance, pension plans, and real estate. Duties include assessing clients’ assets, liabilities, cash flow, insurance coverage, tax status, and financial objectives.

Possible career opportunities - Small business management/Entrepreneurship
Small business managers/entrepreneurs have diverse career duties including, finding financial resources, collecting sales tax, creating computer networks, setting up filing systems, and creating marketing plans. Further, those that select careers in this discipline, identify trends and potential markets for products, direct salespersons, provide guidance and training for new employees, and mitigate compliant and compliance issues.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.
**Associate in science degree - Business**

This curriculum is designed to provide an opportunity for business students to achieve an associate in science degree after completing a series of foundational and more advanced courses in the area of business. Completion of this curriculum will demonstrate commitment to the field and provide comprehensive preparation for employment in business related occupations. This degree is not primarily intended for transfer students and does not include all courses required for transfer. Students who intend to transfer should consider the Associate in science degree in business administration for transfer. DVC business students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are also advised to select either General Education Option 2 (IGETC) or Option 3 (CSU G.E.). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn this associate degree with a major in business, students must satisfactorily complete sixty (60) units of degree applicable coursework with a grade point average of 2.0 (C) or higher. At least 12 units of degree applicable coursework must be earned at DVC. Certain courses may satisfy both major and general education requirements; however, the units are only counted once. Because currency of information is relevant for this employment related degree, all coursework required for the degree major must be completed within ten years of the degree date.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-109 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250 Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-294 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120 Introduction to Management Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 9 units from:

| BUS-105 Business Etiquette | 1 |
| BUS-115 Business E-Mail, Social Media, and Digital Communication | 1 |
| BUS-161 Personal Finance and Investment | 3 |
| BUS-209 International Business | 3 |
| BUS-240 Business Statistics | 3 |
| BUS-255 Business Communications II | 3 |
| BUS-261 Investments | 3 |
| BUS-291 Will, Trusts, and Estate Planning | 1 |
| BUSAC-185 QuickBooks Accounting for Business I | 1.5 |
| BUSAC-187 Managerial Accounting | 4 |
| BUSAC-188 QuickBooks Accounting for Business II | 1.5 |
| BUSAC-285 Federal Income Taxes - Individuals | 3 |
| BUSIM-145 Business Spreadsheet Applications | 2 |
| BUSMG-121 Practices and Concepts of Supervision | 3 |
| BUSMG-131 Gender Issues in Management | 3 |
| BUSMG-132 Human Resource Management | 3 |
| BUSMG-191 Small Business Management | 3 |
| BUSMS-182 Entrepreneurship and Venture Management | 3 |
| BUSMG-226 Group Behavior and Leadership | 3 |
| BUSMK-155 Professional Selling | 3 |
| BUSMK-255 Advertising | 3 |
| BUSMK-256 Marketing | 3 |
| BUSMK-257 Applied Advertising and Promotion | 3 |
| RE-160 Real Estate Principles | 3 |
| RE-161 Legal Aspects of Real Estate | 3 |
| RE-162 Real Estate Appraisal I | 3 |
| RE-163 Real Estate Practice | 3 |
| RE-164 Real Estate Finance | 3 |
| RE-165 Real Estate Economics | 3 |
| RE-166 Escrow Procedures | 3 |
| RE-167 Real Estate Property Management | 3 |

**total minimum required units** 24

**Associate in science degree in business administration for transfer**

This curriculum is designed to provide an opportunity for the business major to achieve an associate in science degree in business administration while completing the requirements for transfer to a California State University (CSU) or other four-year college or university to earn a bachelor’s degree in business administration. A baccalaureate degree is recommended preparation for those considering professional careers in business. Completion of this curriculum will demonstrate commitment to the field and provide comprehensive preparation for upper-division work.

A DVC business student who has earned the associate in science degree in business administration for transfer (AS-T) will be granted priority admission to the CSU into a similar baccalaureate (BA) degree program as long as the student meets all prescribed admission requirements. Once admitted, the student will only be required to complete 60 additional prescribed units to qualify for the similar baccalaureate degree. The AS-T degree does not guarantee admission to a specified major or campus, but does require the California State University to grant a student priority admission consideration to the local CSU campus and to a program or major that is similar to the transfer degree as determined by the California State University.
Some majors and colleges or universities may require different lower division preparation and/or a higher GPA than is necessary for this associate degree. The requirements for this degree may not be the best option for students intending to transfer to a particular CSU campus or to a university or college that is not part of the CSU system. Students are strongly advised to meet with a counselor to discuss transfer requirements and lower division major preparation this is needed for their intended transfer school.

In order to earn the degree, students must complete 60 semester units of CSU transferable coursework, complete each of the courses used to meet a major requirement with a “C” grade or higher, maintain a minimum GPA of 2.0 and satisfy either CSU G.E. Breadth or IGETC requirements. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**required courses**
- BUS-294 Business Law ................................................. 3
- BUSAC-186 Financial Accounting .............................................. 4
- BUSAC-187* Managerial Accounting .............................................. 4
- ECON-220* Principles of Macroeconomics ........................................ 3
- ECON-221* Principles of Microeconomics ........................................ 3

**plus at least 3 units from**:  
Statistics:  
- BUS-240* Business Statistics ................................................... 3  
- or MATH-142* Elementary Statistics with Probability ............................. 4

Mathematics:  
- MATH-181* Finite Mathematics .................................................... 3
- MATH-182* Calculus for Management, Life Science and Social Science I. .................................................... 4
- or MATH-192* Analytic Geometry and Calculus I. ..................................... 5

**plus at least 5 units from**:  
- any course not used above or:  
- BUS-109 Introduction to Business .................................................. 3
- BUS-250 Business Communications .................................................. 3
- BUSM-140 Business Spreadsheet Applications ........................................ 2
- COMSC-100 Introduction to Computers and Information Systems .............................. 3
- COMSC-100L Introduction to Computer Software ......................................... 1

**total minimum units required** 25

*These courses have specific prerequisites. See course description for details.

**Students are advised that most universities require both a mathematics and a statistics course. Consult with a counselor.

**Certificate of achievement - Advanced general business**

This curriculum is designed to expand general business knowledge and add depth and breadth in the areas of management and supervision, global business, and statistical arguments and solutions. The program provides development of general principles and skills applicable to all businesses and industries.

To earn the certificate of achievement in advanced general business, students must complete each course with a “C” grade or higher. All coursework required for the certificate must be completed within seven years of the certificate date.

**required courses**
- BUS-109 Introduction to Business .................................................. 3
- BUS-250 Business Communications .................................................. 3
- BUS-294 Business Law ................................................................. 3
- BUSMG-120 Introduction to Management Studies ........................................ 3

**plus at least 12 units from**:  
- Any BUS course not listed in the core requirements ........................................ 3
- Any BUSAC course not listed in the core requirements ....................................... 3
- Any BUSMG course not listed in the core requirements ....................................... 3
- Any BUSMK course not listed in the core requirements ....................................... 3
- Any RE course not listed in the core requirements ............................................. 3

**total minimum required units** 24

**Certificate of achievement - Business - transfer**

This curriculum prepares the student for entry into business related professional programs or jobs that do not require degrees. Certificate requirements provide a strong general business foundation for employment in business administration, accounting, management, marketing, finance, international business, or other business related area. Additionally, it completes most, if not all, of the undergraduate business major requirements for transfer should a student decide to transfer prior to completing all the requirements for the DVC associate in arts degree in business-transfer; or decide to complete the lower division general education requirements and transfer to a four-year institution at a later time. This certificate provides a core curriculum for employment in business or for the further study of business.

To earn a certificate of achievement in business-transfer students must complete each course used to meet a certificate requirement with a “C” grade or higher. All coursework required for the certificate must be completed within seven years of the certificate date.

**required courses**
- BUSAC-186 Financial Accounting .................................................. 4
- BUSAC-187* Managerial Accounting .................................................. 4
- ECON-220* Principles of Macroeconomics ........................................ 3
- ECON-221* Principles of Microeconomics ........................................ 3

**plus at least 3 units from**:  
- MATH-182* Calculus for Management, Life Science and Social Science I. .................................................. 4
- MATH-192* Analytic Geometry and Calculus I. ................................ ............. 5

**plus at least 3 units from**:  
- BUS-240* Business Statistics ...................................................... 3
- MATH 142* Elementary Statistics with Probability ..................................... 4
Certificate of achievement - Business marketing

This curriculum is designed to develop knowledge of sales, advertising, and marketing principles and procedures. Statistical analysis is incorporated into the program as a foundation for working in industry with target markets and data selection.

Students can build a solid foundation in all phases of retailing, merchandising, and management, and are then prepared to work as a salesperson, store manager, merchandiser, account executive, buyer, market researcher, consultant, district manager, or store owner/operator. Some career options may require more than two years of college study.

To earn the certificate of achievement in business marketing, students must complete each course with a “C” grade or higher. All coursework required for the certificate must be completed within seven years of the certificate date.

Certificate of achievement - Management and leadership studies

This program benefits students preparing to become managers and supervisors, and it is also valuable for persons already holding these positions.

The management and leadership studies certificate provides career opportunities as an administrative analyst, office manager, small business owner, operations manager, program coordinator, human resources professional, facilities manager, organizational development specialist, branch manager, or shift supervisor.

To earn a certificate of achievement in management and leadership studies, students must complete each course used to meet a certificate requirement with a “C” grade or higher. All coursework required for the certificate must be completed within seven years of the certificate date.

Certificate of achievement - General business

This curriculum is designed to provide core business knowledge for obtaining entry-level employment in jobs requiring some general business skills. Course content emphasizes a survey of various business disciplines including marketing, finance and investments, small business/entrepreneurship and real estate. Additionally, the curriculum develops skills in business communications, provides a background in general business law, and introduces management studies.

To earn the certificate of achievement in general business, students must complete each course with a “C” grade or higher. All coursework required for the certificate must be completed within seven years of the certificate date.
Certificate of achievement - Small business management/entrepreneurship

This program is designed to prepare students for planning, organizing, and operating a business in wholesaling, retailing, and technology or service trade. The main thrust of the program is on managerial decision making under conditions of uncertainty and fierce competition. Courses involve studying case histories of decision-making issues and using business and management games to simulate the complicated interrelationships of various businesses.

The small business management/entrepreneurship certificate provides a foundation of business competencies and management strategies that will enable students to succeed as an entrepreneur, small business owner, partner, manager, or inventor.

To earn a certificate of achievement in small business management/entrepreneurship, students must complete each course with a “C” grade or higher. All coursework required for the certificate must be completed within seven years of the certificate date.

required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-109</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250</td>
<td>Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-294</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120</td>
<td>Introduction to Management Studies</td>
<td>3</td>
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</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-181</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-186</td>
<td>Financial Accounting</td>
<td>4</td>
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plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BUSMG-181</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-192</td>
<td>Entrepreneurship and Venture Management</td>
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plus at least 6 units from:

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<th>Units</th>
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</thead>
<tbody>
<tr>
<td>BUS-209</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC 185</td>
<td>QuickBooks Accounting for Business I</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSIM-145</td>
<td>Business Spreadsheet Applications</td>
<td>2</td>
</tr>
<tr>
<td>BUSMG-121</td>
<td>Practices and Concepts of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-132</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMK-256</td>
<td>Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 24

Certificate of achievement - Wealth management

This curriculum is designed to provide targeted financial knowledge concerning money management, insurance, wealth accumulation, income taxes, investments, and estate planning for the individual. This is a multi-disciplinary program involving accounting, finance, and law.

To earn the certificate of achievement in wealth management, students must complete each course with a “C” grade or higher. All coursework required for the certificate must be completed within seven years of the certificate date.

required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-109</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-161</td>
<td>Personal Money Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250</td>
<td>Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-261</td>
<td>Investments</td>
<td>3</td>
</tr>
<tr>
<td>BUS-294</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-285</td>
<td>Federal Income Taxes - Individuals</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120</td>
<td>Introduction to Management Studies</td>
<td>3</td>
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</table>

plus at least 3 units from:

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<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSC-291</td>
<td>Wills, Trusts and Estate Planning</td>
<td>1,5</td>
</tr>
<tr>
<td>BUSM-145</td>
<td>Business Spreadsheet Applications</td>
<td>2</td>
</tr>
<tr>
<td>RE-164</td>
<td>Real Estate Finance</td>
<td>3</td>
</tr>
<tr>
<td>RE-165</td>
<td>Real Estate Economics</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 24

Certificate of accomplishment - Business essentials

This certificate of accomplishment provides a core curriculum of business skills necessary for obtaining entry-level employment in a business or office environment. This certificate or its equivalent is required in order to complete the requirements for a certificate of achievement in the business or accounting areas.

To earn a certificate of accomplishment, students must complete the required courses with a “C” grade or higher. Certificate requirements may be completed by attending a combination of day and evening, hybrid and/or online classes.

required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-101</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>BUS-103</td>
<td>Applied Business Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>LS-121</td>
<td>Information Literacy and Research Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

total minimum required units 7
BUS-101  Business English  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
A study of English language from a business perspective involving grammar, punctuation, spelling, business vocabulary, sentence structure, basic business document creation, and the ethics of writing clearly and correctly. CSU

BUS-103  Applied Business Mathematics  
3 units  SC  
• 54 hours lecture/18 hours laboratory per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Note: The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.  
An examination of key concepts and applications of mathematics to solve business problems. Topics include calculating percentages and commissions, trade and cash discounts, markups and markdowns, banking, payroll, taxes, insurance, simple and compound interest, inventory and turnover, depreciation, analysis of financial statements, international business mathematics applications, stocks and bonds, and annuities. CSU

BUS-105  Business Etiquette  
1 unit  SC  
• 18 hours lecture per term  
• Recommended: ENGL-118 or equivalent  
A study of the principles of etiquette for the business professional. Students will engage in professional activities that cover introductions, shaking hands, exchanging business cards, listening, conversational techniques, diplomacy, manners, proximity, telephone/smartphone manners, office equipment and technology etiquette, professional appearance, grooming, gift giving, entertainment, handling social events, business travel, meeting protocol, dining, tipping, showing appreciation, intercultural business etiquette, and online/social media etiquette. CSU

BUS-107  Business Job Search Skills  
1.5 units  SC  
• 27 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This course will cover all employment-related aspects of succeeding in a professional job search in business. Students will explore sources of job listings in business; learn how to conduct a successful job search, including searching for positions using traditional and online methods, preparing employment documents (resume, cover letter, application form, follow-up messages), and interviewing skills; practice salary negotiation techniques; practice how to receive and respond effectively to constructive criticism during performance reviews; design strategies for advancing in the business environment; and plan methods for resigning from a position with tact. CSU

BUS-109  Introduction to Business  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This survey course provides an introduction to the study of the modern business enterprise. Students will examine the role of business in a market economy, survey current business trends and evaluate the global, financial, and social environment in which businesses exist and operate. Moreover, the course will describe the evolution, formation and management of American and international businesses, and provide a basic understanding of various functional areas of business, including economics, marketing, finance, management, human resources, international operations, and business decision-making using information technology. CSU, UC

BUS-115  Business E-Mail, Social Media, and Digital Communication  
1 unit  SC  
• 18 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This is a course designed to help business workers with written and web-based communication skills used on the job. Topics include professional, high-quality e-mail messages and web-based communications for both internal and external audiences, digital research and communication, cultural and diversity communications, ethical and legal guidelines in communication, minimizing conflict, and developing positive communication skills. CSU

BUS-150  Topics in Business  
.3-4 units  SC  
• Variable hours  
A supplemental course in business to provide a study of current concepts and problems in business and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

BUS-161  Personal Money Management  
3 units  SC  
• 54 hours lecture per term  
• Recommended: BUS-103 and eligibility for ENGL-122 or equivalents  
An introductory course for planning and managing individual finances and for money management. Topics will include purchasing decisions, sources of credit, personal tax strategies, budgeting, saving, investing in real estate and securities, insuring personal resources and retirement planning. CSU
BUS-209 International Business
3 units SC
- 54 hours lecture per term
- Recommended: BUS-109 or equivalent for ENGL-122 or equivalents

An overview of the theories and practices of modern international businesses. This course examines the key functional areas related to global businesses, including international marketing, finance and management, as well as the political, social, economic and cultural factors that help shape and influence today's international business environment. Students will be able to get hands-on international business experience through developing a market entry strategy for a local business to enter a particular foreign country or region. CSU

BUS-240 Business Statistics
3 units SC
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: MATH-120 or equivalent

Business Statistics is an introduction to concepts, methods and models employed in reasoning with numbers and in presenting cogent statistical arguments or solutions. The course introduces students to the organization, analysis and inference-making processes, using sample data to graphically and numerically describe samples. The course details how to estimate confidence intervals, test hypotheses and develop projections for inferential purposes in a variety of contexts and disciplines such as business, social science, biology, economics, and health science. Many different probability distributions are covered: poisson, binomial, normal, student-t, chi-sq, F-distribution and others. Estimating simple and multiple regressions and making inference from such analysis is another major theme of this course. Using spreadsheet-based software (such as MS Excel) to compute statistics in large-data applications. CSU, UC (credit limits may apply to UC; see counselor)

BUS-250 Business Communications I
3 units SC
- 54 hours lecture per term
- Recommended: BUS-101 or equivalent; eligibility for ENGL-122 or equivalent
- Note: Strongly recommended for all business administration, office professional, and management students

A course designed to help students develop the skills necessary to communicate effectively in a professional business environment. The focus will be on communicating clearly, concisely, considerately, and correctly, both orally and in writing. Students will learn to prepare basic business documents, including letters, memos, and short reports and proposals; to use technology to communicate, including email and discussion boards; and to prepare and deliver short oral presentations. The course will also contain an introduction to employment communication, including resumes, application letters, and interview skills. Emphasis throughout the course will be placed on intercultural communication and the ethics of communication. CSU

BUS-255 Business Communications II
3 units SC
- 54 hours lecture per term
- Recommended: BUS-101 or equivalent; BUS-250 or equivalent; eligibility for ENGL-122 or equivalent

An advanced course designed to help students continue to develop and refine the skills necessary to communicate effectively in a professional business environment. The focus will be on communicating clearly, concisely, considerately, and correctly, both orally and in writing. Students will learn to prepare advanced business documents, including sales letters, proposals, and research reports; to use advanced technology to communicate, including mailing lists, virtual chat rooms, basic Web site development, and audio and video-conferencing equipment; and to prepare and deliver complex multimedia presentations. The course will also contain segments on documenting resources properly; conflict resolution; negotiation techniques; meeting management; and utilizing the Internet for job searching and networking. Emphasis throughout the course will be placed on intercultural communication and the ethics of communication. CSU

BUS-261 Investments
3 units SC
- 54 hours lecture per term
- Recommended: BUS-109 or equivalent

A comprehensive course that: 1) provides an overview of financial markets and financial assets such as stocks, bonds and mutual funds; 2) develops a basic understanding of how to value different financial assets and select investment opportunities; and 3) improves research and analytical skills for better investment decision making. CSU

BUS-291 Wills, Trusts, and Estate Planning
1.5 units SC
- 27 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course will provide an introduction to the areas of business law concerned with wills, trusts, and estate planning. Students will learn about living trusts, probate avoidance, joint tenancy, estate taxes, asset control, wills, and durable power of attorney. In addition, students will learn how to analyze the applicability of various types of estate planning documents for personal use, how to make health-care decisions, and how to create durable powers of attorney. The course will also cover advanced topics such as planning for incapacity and the use of various types of irrevocable trusts. CSU
BUSINESS

BUS-294  Business Law
3 units  SC
• 54 hours lecture per term
• Recommended: BUS-109 or equivalent, eligibility for ENGL-122 or equivalent

Provides a general overview of the specific areas of the legal environment that effect individuals and businesses. Major emphasis on contracts, including the Uniform Commercial Code, Article 2. Other subjects studied may include legal history, civil procedure, constitutional law, torts, intellectual property, cyber law, criminal law, international law, labor and employment law, and agency. CSU, UC

BUS-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required. Topics must extend study beyond courses offered.

An opportunity for advanced students to study special interests under the direction of the faculty. CSU

BUS-299  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

BUSINESS ACCOUNTING – BUSAC

Rachel Westlake, dean
Business Division
Math Building, Room 267

Possible career opportunities
Study in accounting prepares students for careers in bookkeeping, private and public accounting, auditing, tax preparation and administration, cost and manufacturing accounting, financial services, payroll, software systems, corporate governance and financial investigation. Some career options require more than two years of college study.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree - Accounting

Certificates of achievement
Advanced accounting
Bookkeeping
General accounting

Associate in science degree

This curriculum is designed to provide an opportunity for accounting students to achieve an associate in science degree in accounting after completing a comprehensive series of courses in the area of accounting. Completion of this curriculum satisfies the accounting unit requirement to take the California CPA exam (For additional requirements please go to www.dca.ca.gov/cba), demonstrates commitment to the field of accounting, and provides comprehensive preparation for employment in accounting-related occupations. This degree is not intended for transfer students. DVC accounting students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are also advised to select either General Education Option 2 (IGETC) or Option 3 (CSU G.E.). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate degree with a major in accounting, students must satisfactorily complete a minimum of sixty (60) units of degree applicable coursework with a grade point average of 2.0 (C) or higher. Certain courses may satisfy both major and general education requirements; however, the units are only counted once. All coursework required for the degree major must be completed within ten years of the degree date.

major requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>units</th>
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</thead>
<tbody>
<tr>
<td>BUSAC-186</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUSAC-187</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUSIM-145</td>
<td>Business Spreadsheet Applications</td>
<td>2</td>
</tr>
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</table>

plus at least 3 units from:

<table>
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<tr>
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<th>Course Name</th>
<th>units</th>
</tr>
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<tbody>
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</tr>
<tr>
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<td>Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-182</td>
<td>Computer Income Tax Return Preparation - Individuals</td>
<td>1.5</td>
</tr>
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<tr>
<td>BUSAC-188</td>
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<td>1.5</td>
</tr>
<tr>
<td>BUSAC-190</td>
<td>Payroll Accounting</td>
<td>1.5</td>
</tr>
<tr>
<td>COOP-170</td>
<td>Occupational Work Experience Education</td>
<td>1-4</td>
</tr>
</tbody>
</table>

DIABLO VALLEY COLLEGE CATALOG 2013-2014
Certificate of achievement - Advanced accounting

The certificate of achievement in advanced accounting builds on the curriculum in the general accounting certificate program and is designed to add technical depth and analytical skill-set development in the areas of financial accounting, auditing, cost accounting, individual income taxation, governmental and not-for-profit accounting and corporate financial reporting for those students with a solid foundation in general accounting. Subjects in this program prepare students for higher level accounting positions and for taking certification examinations in the field of accounting such as enrolled agent, certified fraud examiner, certified internal auditor, certified public accountant or certified management accountant.

Students are required to obtain a “C” grade or higher in all required courses. Certificate courses are offered in a combination of day, evening, weekend and online courses. At least 25 percent of the units must be completed at DVC. Requests for course substitution are made to the business administration department chairperson.

**required courses**

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</tr>
<tr>
<td>COOP-170 Occupational Work Experience Education</td>
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</tr>
</tbody>
</table>

Certificate of achievement - Bookkeeping

The certificate program in bookkeeping is designed to provide basic business knowledge for obtaining entry-level employment in jobs requiring bookkeeping and accounting skills. Course content emphasizes small business applications for both a service and merchandising business and includes a solid foundation in bookkeeping principles and the classifying and double-entry recording of financial transactions and preparation of the income statement and balance sheet. Students are required to obtain a “C” grade or higher in all required courses. Certificate courses are offered in a combination of day, evening, weekend and online courses. At least 25 percent of the units must be completed at DVC. Requests for course substitution are made to the business administration department chairperson.

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<table>
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<tr>
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<tbody>
<tr>
<td>BUSAC-181 Applied Accounting</td>
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<tr>
<td>BUSAC-186 Financial Accounting</td>
<td>4</td>
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</table>

**plus at least 8-9 units from:**

<table>
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<tr>
<th>Course</th>
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<tbody>
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</tr>
<tr>
<td>COOP-170 Occupational Work Experience Education</td>
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</tr>
</tbody>
</table>

Certificate of achievement - General accounting

This entry-level accounting certificate provides students with basic accounting and computer accounting coursework. Completion of the certificate will enable students to apply for entry-level positions in accounting.
Students are required to obtain a “C” grade or higher in all required courses. Certificate courses are offered in a combination of day, evening, weekend and online courses. At least 25 percent of the units must be completed at DVC. Requests for course substitution are made to the business administration department chairperson.

**Required Courses**

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<tr>
<td>COOP-170</td>
<td>Occupational Work Experience Education.............</td>
<td>1-4</td>
</tr>
</tbody>
</table>

**Total Minimum Required Units**: 13

**BUSAC-150 Topics in Business Accounting**

0.3-4 units SC

- Variable hours

A supplemental course in business accounting to provide a study of current concepts and problems in Business Accounting and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

**BUSAC-181 Applied Accounting**

3 units SC

- 54 hours lecture/18 hours laboratory per term
- Recommended: BUS-103 and eligibility for ENGL-122 or equivalents
- Note: This course is a recommended primer for the BUSAC-186 “business major” transfer course. Credit by examination option available. The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.

A beginning accounting course that involves a practical approach emphasizing small business applications. This course covers the accounting cycle for a sole proprietorship. Includes journals and ledgers; financial statements; adjusting, correcting, and closing entries; bank reconciliation; payroll; and calculations for interest, discounts, sales, and payroll taxes. Also includes an introduction to the use of an accounting software program. CSU

**BUSAC-182 Computer Income Tax Return Preparation - Individuals**

1.5 units SC

- 18 hours lecture/27 hours laboratory per term
- Recommended: BUSAC-285 and eligibility for ENGL-122 or equivalents
- Note: Course may be repeated when software program changes. The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.

This is a course that uses a popular tax software program or online filing system to prepare income tax returns for an individual. Topics will include the basic tax formula, filing status, exemptions, dependents and the procedures for creating a taxpayer file and processing income, deductions, credits, capital gains and losses, and business activities to produce a final tax return. CSU

**BUSAC-185 QuickBooks Accounting for Business I**

1.5 units SC

- 18 hours lecture/27 hours laboratory per term
- Recommended: First half of BUSAC-181 or BUSAC-186 and eligibility for ENGL-122 or equivalents
- Note: Students may petition to repeat this course when software or hardware is changed. The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.

An introductory course to computer accounting for business. Applies basic accounting knowledge and theory in QuickBooks. Includes sales, invoicing and receivables, payables and purchases, general accounting, financial statements, and end-of-period procedures for a service business. This course builds upon knowledge of bookkeeping principles. CSU

**BUSAC-186 Financial Accounting**

4 units SC

- 72 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Students seeking an introduction to bookkeeping techniques should register for the Applied Accounting course, BUSAC-181

A theory and procedures course required for many business administration and accounting majors. Introduction to fundamental financial accounting principles, theory, concepts and procedures as the basis of an information system. Includes the role of financial information in business decisions, basic financial statements and the processes used to prepare these financial statements. C-ID ACCT 110, CSU, UC
BUSAC-187 Managerial Accounting
4 units SC
- 72 hours lecture per term
- Prerequisite: BUSAC-186 or equivalent
A second term theory and procedures course required for many business administration and accounting majors. Emphasis is on fundamental managerial accounting concepts that aid in decision making, performance evaluation, planning and cost control. C-ID ACCT 120, CSU, UC

BUSAC-188 QuickBooks Accounting for Business II
1.5 units SC
- 18 hours lecture/27 hours laboratory per term
- Recommended: BUSAC-185 and eligibility for ENGL-122 or equivalent
- Note: Course may be repeated when software program changes. The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.
A second level course in computer accounting for business using a recognized software program. Focus will be on developing skills to create a set of records and applications for a merchandising business including sales and receivables, payables and purchases, and end-of-period procedures. Topics will also include payroll and payroll tax reporting and related preparation of employee earnings reports. CSU

BUSAC-190 Payroll Accounting
1.5 units SC
- 27 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course will cover one of the most important accounting functions: payroll. Students will learn how to calculate wages, determine required employer and employee tax deductions, process payroll, and file required reports. The course will also cover employment legislation and tax laws that affect payroll. CSU

BUSAC-282 Intermediate Accounting
3 units SC
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: BUSAC-186 or equivalent
- Recommended: BUSAC-187 or equivalent
- Note: The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.
An advanced level financial accounting course that reviews and builds on the foundation material presented in Financial Accounting. Emphasizes financial accounting concepts and reporting issues in association with financial statement preparation and interpretation. CSU

BUSAC-283 Auditing
3 units SC
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: BUSAC-186 or equivalent
- Recommended: BUSAC-187 or equivalent
- Note: The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.
This is an intermediate level course on the role and responsibility of Certified Public Accountants in the audit of publicly traded and private companies. Emphasis is placed on verification of financial statements and internal control of accounting systems and cycles for publicly traded companies in the United States. Coverage focuses on the legal and ethical responsibilities of auditors as mandated by the Securities Acts of 1933 and 1934 and the Sarbanes Oxley Act of 2002. Limited coverage is given to audits and attestations of private companies. Topics include auditing standards, professional ethics, legal liability, audit programs, sampling techniques, and audit reports. CSU

BUSAC-284 Cost Accounting
3 units SC
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: BUSAC-186 or equivalent
- Note: The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.
This course explores the accountant’s role in the decision-making process. Emphasis is on the determination, collection and analysis of cost information as it relates to planning and control. Job order costing, process costing, standard costing, other current costing methods, analysis of variances and analysis of cost information are included in this course. CSU

BUSAC-285 Federal Income Taxes-Individuals
3 units SC
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: BUSAC-186 and eligibility for ENGL-122 or equivalents
- Note: The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.
An exploration of the framework of the federal tax system. Application and analysis of the Internal Revenue Code, regulations, rulings and court cases. This course concentrates on federal income tax law for individuals and includes problem solving, perspectives on tax saving, and tax planning techniques. Introduction to tax preparation software is provided. CSU
BUSAC-286 Governmental and Not-For-Profit Accounting
3 units SC
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: BUSAC-186 or equivalent
- Recommended: BUSAC-187 or equivalent
- Note: The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.

A study of accounting practices used in governmental units and not-for-profit organizations. Includes basic characteristics of fund accounting, functions of governmental accounting, budgetary process, financial reporting objectives and issues of reporting and disclosure. CSU

BUSAC-290 Corporate Financial Reporting and Financial Statement Analysis
3 units SC
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: BUSAC-282 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.

This course presents advanced skills in the use of financial statements by providing an overview of financial accounting information for evaluating past performance and predicting future performance of a company. It applies the accounting theory and practice gained in intermediate Accounting to real-life financial statements and disclosure examples. In addition, the course focuses on how business transactions are reported and understanding the implications of business decisions. CSU

BUSAC-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

BUSINESS INFORMATION MANAGEMENT – BUSIM

Rachel Westlake, dean
Business Division
Math Building, Room 267

Possible career opportunities
The office professional curriculum enriches the chosen career of all who work in professional office settings, especially those who are employed as administrative assistants, administrative technicians, administrative associate, office managers, office clerks, receptionist, secretary, customer service representative, office coordinator, or typist.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Certificate of achievement
Office professional

Certificate of accomplishment
Office professional essentials

Certificate of achievement - Office professional
This certificate program prepares students for entry-level positions in small and large business offices requiring support staff such as receptionists, administrative assistants, and general clerical assistance.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements can only be completed by attending both day and evening classes. Course requirements must be completed within three years of entering the program. At least 25 percent of the units must be completed at DVC. Substitutions will be considered on an individual basis.

Changes occur rapidly in the office information and technology environment; therefore, students should meet with an office professional certificate advisor in the business division to determine elective coursework that will assist them in reaching their personal and professional goals.
BUSIM-025 ESL Keyboarding  
1 unit  
- Non degree applicable  
- 18 hours lecture/18 hours laboratory per term  
- Note: CELSA recommendation for ESL-076 or higher class; for absolute keyboarding beginners

A beginning computer keyboarding/word processing course for students who are non-native speakers or who need additional instructional support in learning how to keyboard and to use word processing features. Students will learn how to operate the computer keyboard by touch and to use a word processing program for creating basic reports.

BUSIM-075 Topics in Business Information Management  
.3-4 unit  
- Non degree applicable  
- Variable hours  
- Recommended: Previous Windows experience

A supplemental course in business information management to provide a study of current concepts and problems in information management. Specific topics will be announced in the schedule of classes.

BUSIM-110 Keyboarding I: Beginning Keyboarding/Introduction to Word Processing  
3 units  
- 54 hours lecture/54 hours laboratory per term  
- Recommended: BUS-101 or equivalent and BUSIM-110 or equivalent  
- Note: See schedule of classes for current word processing software used

A beginning course in keyboarding using the touch method. Personal use and prevocational emphasis on acquiring basic keyboarding skills and on producing documents (email, reports, letters, tables, memos) using word processing software. Preparation for learning office production skills. CSU

BUSIM-111 Keyboarding II: Intermediate Word Processing and Skill Development  
3 units  
- 54 hours lecture/54 hours laboratory per term  
- Recommended: BUS-101 or equivalent and BUSIM-110 or equivalent  
- Note: See schedule of classes for current word processing software used

This course is the second in the sequence of keyboarding/word processing courses offered. Preparation of common business documents using intermediate to advanced level word processing skills is emphasized. Skill building activities are also included to develop speed and accuracy to employability levels. CSU

BUSIM-140 Database Records and Information Management  
3 units  
- 54 hours lecture/36 hours laboratory by arrangement per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Keyboarding by touch recommended. Students may petition to repeat this course when software or hardware is changed

Beginning course in database records and information management. Course provides basic records management principles applied to various records systems based on ARMA (Association of Records Manager and Administrators) International rules. Current database software will be used to introduce information management functions. CSU
BUSIM-145  Business Spreadsheet Applications  
2 units  SC  
- 27 hours lecture/27 hours laboratory per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Students may petition to repeat this course when software or hardware is changed. The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.

A business applications course, which uses a foundation of basic spreadsheet skills to emphasize the solving of business problems using a commercial spreadsheet program such as Excel. Business oriented cases and problems will be used to present and reinforce procedures for planning, designing, creating, and preparing worksheets. Preparation of business reports, incorporating graphs and database features, and time saving techniques will also be presented. Development of business problem-solving skills is emphasized. Recommended for employment preparation and upgrading of business skills. CSU

BUSIM-155  Topics in Office Technology and Administration  
.3-4 units  SC  
- Variable hours

A supplemental course in office administration designed to provide a study of current technology or techniques. Specific topics will be announced in the schedule of classes. CSU

BUSIM-211  Office Procedures and Technology  
3 units  SC  
- 54 hours lecture/18 hours laboratory per term  
- Recommended: BUS-101, BUSIM-111 and eligibility for ENGL-122 or equivalents

This comprehensive course prepares students to assume multiple responsibilities in office environments. Projects will incorporate technology and build collaborative communication skills through problem solving. Students will assess, select, and use various software programs, office equipment, and the Internet to develop and complete professional office assignments. Leadership, project management and critical thinking are emphasized along with creativity and career development. CSU

BUSIM-155  Topics in Office Technology and Administration  
.3-4 units  SC  
- Variable hours

A supplemental course in office administration designed to provide a study of current technology or techniques. Specific topics will be announced in the schedule of classes. CSU

BUSIM-211  Office Procedures and Technology  
3 units  SC  
- 54 hours lecture/18 hours laboratory per term  
- Recommended: BUS-101, BUSIM-111 and eligibility for ENGL-122 or equivalents

This comprehensive course prepares students to assume multiple responsibilities in office environments. Projects will incorporate technology and build collaborative communication skills through problem solving. Students will assess, select, and use various software programs, office equipment, and the Internet to develop and complete professional office assignments. Leadership, project management and critical thinking are emphasized along with creativity and career development. CSU

BUSMG-120  Introduction to Management Studies  
3 units  SC  
- 54 hours lecture per term  
- Recommended: BUS-109 or equivalent; eligibility for ENGL-122 or equivalent

This course is designed as an introduction to the skills and applications used in modern management practice. Topics may include foundation of management principles, planning, organizing, staffing, directing, controlling, legal, ethical, and social responsibilities of management. CSU

BUSMG-121  Practices and Concepts of Supervision  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent

This course will provide the student with a real world approach that shows students how management practices and concepts are carried out. Each of the management functions - planning, organizing, influencing, and controlling - will be explained from the standpoint of how each function interrelates to the management process. Student participation includes a variety of management exercises and case study discussions. CSU

BUSMG-131  Gender Issues in Management  
3 units  LR  
- 54 hours lecture per term  
- Recommended: BUS-109 and eligibility for ENGL-122 or equivalents

An exploration of gender issues in management resulting from the expansion of women's roles at work during the past decades and the growth of the multicultural workforce. Leadership styles, use of power, mentoring, networking, communicating, team work, discrimination, sexual harassment and family/work balance will be studied in the context of the current diverse workplace. CSU
BUSMG-132 Human Resource Management
3 units SC
- 54 hours lecture per term
- Recommended: BUS-109 and eligibility for ENGL-122 or equivalents
This course is a comprehensive study of human resource management in organizations, including human resource planning; employment legislation; recruitment and selection; training and development; compensation and benefits; performance appraisal and career management; managing labor relations; safety, health, and well-being; and motivation and enhancing performance. The course will explore topics including values, ethical issues, leadership and communication, conflict, work design, and organizational culture. CSU

BUSMG-150 Topics in Management Studies
.3-4 units SC
- Variable hours
- Recommended: BUS-109 and eligibility for ENGL-122 or equivalents
A supplemental course in business management to provide a study of current concepts and problems in business management. Specific topics will be announced in the schedule of classes. CSU

BUSMG-191 Small Business Management
3 units SC
- 54 hours lecture per term
- Recommended: BUS-103, BUS-109; eligibility for ENGL-122 or equivalents
An introductory course intended for students who want to start a new small business, or are already involved in the ongoing management of an existing small business. Small business owners differ from entrepreneurs in that they often keep their businesses small and do not emphasize rapid growth. A small business is independently owned and operated, and is typically not dominant in its field. This course will cover relevant functional areas such as marketing, finance and human resources. It will also cover topics unique to small businesses, including managing a family-owned business, becoming a franchisee, and applying for a Small business Administration (SBA) loan. Students will get hands-on small business management experience by designing their own small businesses and putting together a business plan. CSU

BUSMG-192 Entrepreneurship and Venture Management
3 units SC
- 54 hours lecture per term
- Recommended: BUS-103, 109; eligibility for ENGL-122 or equivalents
A course designed for students who want to become entrepreneurs and successfully launch new business ventures. Entrepreneurs’ principle objectives are profitability and growth. They differ from other business owners in that they take more risks, and focus on developing innovative strategic practices and products in high tech and other high growth sectors. This course will cover the process of successfully launching, managing and growing an entrepreneurial firm, emphasizing opportunity recognition and feasibility analysis. It will also cover important topics such as developing an effective business model, protecting intellectual property and obtaining venture capital financing. Students will get hands-on entrepreneurial experience by designing their own entrepreneurial venture and developing a business plan. CSU

BUSMG-226 Group Behavior and Leadership
3 units LR
- 54 hours lecture per term
- Recommended: BUS-109 or equivalent; eligibility for ENGL-122 or equivalent
This course will provide theoretical foundations and practical experiences with group behavior and leadership, resulting in increased awareness of the self in groups. The course includes the examination of workforce diversity, motivation, decision-making, and organizational politics. CSU

BUSMK-158 Professional Selling
3 units SC
- 54 hours lecture per term
- Recommended: BUS-109 or equivalent; eligibility for ENGL-122 or equivalent
Theory and practice of personal selling with a focus on relationship marketing and a concentration on the selling process. Emphasis on sales strategies, techniques and settings. Skills development in product knowledge, customer analysis, prospecting, presenting, and closing the sale. Also addresses team sales presentations. CSU

BUSMK-255 Advertising
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A study of the historical, social, ethical, economic, and regulatory aspects of advertising. The subject evaluates advertising, media, and creative strategies for traditional and electronic markets. Topics include effects of consumer behavior patterns, the client-agency relationship, and the development and evaluation of advertising campaigns. CSU
BUSMK-256 Marketing
3 units SC
- 54 hours lecture per term
- Recommended: BUS-109 or equivalent; eligibility for ENGL-122 or equivalent

Introduction to marketing functions involved in facilitating the exchange of goods and services. Focus on the analysis of markets: assessment of the marketing environment; formulation of marketing strategy; and development of the marketing mix variables of product, price, promotion, and distribution. Ethical issues considered. CSU

BUSMK-257 Applied Advertising and Promotion
3 units SC
- 54 hours lecture per term
- Recommended: BUSMK-255 and eligibility for ENGL-122 or equivalents

This course provides a comprehensive treatment of advertising and promotion from an integrated marketing communications (IMC) perspective. Students will work in teams to develop an integrated marketing communications plan for an actual product or service offered by a firm or organization. Attention is given to key subjects such as target marketing, market research, media planning, creative strategies, and ethical and legal concerns. Emphasis is placed on creating a cost-effective and measurable plan by blending various promotional tools. CSU

BUSMK-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office is required. Topics must extend study beyond courses offered.

An opportunity for advanced students to study special interests under the direction of the faculty. CSU

RE-160 Real Estate Principles
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

An introductory course of entry into the real estate profession, for investing in real estate or for a better understanding of transfers of real property. The course covers real and personal property acquisition, ownership, estates in real property, contracts, deeds, financing, taxes, property transfer, agency and other essential topics. It will also assist persons preparing for the real estate salesperson’s license examination, although it is not specifically or solely designed as a pre-licensing course. CSU

RE-161 Legal Aspects of Real Estate
3 units SC
- 54 hours lecture per term
- Recommended: RE-160 or valid California real estate license and eligibility for ENGL-122 or equivalents
- Note: Applies toward the state educational requirements for brokers license examination

California law as it pertains to the practice of real estate. CSU

RE-162 Real Estate Appraisal I
3 units SC
- 54 hours lecture per term
- Recommended: RE-160 or valid California real estate license and eligibility for ENGL-122 or equivalents
- Note: Applies toward CA Department of Real Estate educational requirements for real estate licenses

A basic course in real estate valuation with emphasis on residential property. Definitions and concepts; principles of valuation; the appraisal process; analysis of city, neighborhood and site data; architectural styles and utility; depreciation; valuation by market data, cost and income approaches; correlation of approaches and final estimate of value; the appraisal report; and the professional appraiser. CSU

RE-163 Real Estate Practice
3 units SC
- 54 hours lecture per term
- Recommended: Valid California real estate license or RE-160 and eligibility for ENGL-122 or equivalents
- Note: Applies toward CA Department of Real Estate educational requirements for brokers license

A comprehensive presentation of techniques of prospecting, listing, selling, financing, purchase agreements, escrow, exchange, and property management. Subjects are covered primarily on a practical basis and include working knowledge of the practices necessary to be effective in the real estate industry. CSU

RE-150 Topics in Real Estate
.3-4 units SC
- Variable hours

A supplemental course in real estate to provide a study of current concepts and problems in real estate. Specific topics will be announced in the schedule of classes. CSU
RE-164  Real Estate Finance  
3 units  SC  
- 54 hours lecture per term  
- Recommended: RE-160 or equivalent; eligibility for ENGL-122 or equivalent  
- Note: Applies toward the state educational requirements for the sales or broker’s license  
A broad overview of real estate finance including conventional, FHA-VA and non-institutional loans as well as construction, investment, and creative financing. CSU

RE-165  Real Estate Economics  
3 units  SC  
- 54 hours lecture per term  
- Recommended: RE-160 or valid CA real estate license or equivalent  
- Note: Serves to satisfy the license requirements for real estate sales and brokers and also the continuing education requirements of appraisers  
Applying economic concepts and theories to enhance the understanding of the functioning of real estate markets. Special attention to the role of government and other economic sectors in the observed value and returns on residential and commercial real estate will be observed. CSU

RE-166  Escrow Procedures  
3 units  SC  
- 54 hours lecture per term  
- Recommended: RE-160 or valid California real estate license and eligibility for ENGL-122 or equivalents  
- Note: Applies toward the state educational requirements for sales and brokers license examination  
A study of the procedures required to complete a valid escrow in order to close a real estate transaction. Emphasis placed on technical skills, legal aspects, ethical restrictions, interfacing with financing and real estate agents. Students are introduced to the procedures and practices from the perspective of both the escrow/title insurance company and the real estate licensee. CSU

RE-167  Real Estate Property Management  
3 units  SC  
- 54 hours lecture per term  
- Recommended: RE-160 and eligibility for ENGL-122 or equivalents  
This course focuses primarily on managing residential and apartment properties. It also contains information on commercial and business properties. Relevant topics include: acquisition, financing, financial reporting, valuation, maintenance, taxes, insurance, furnishings, and tenant relations. CSU

RE-201  Advanced Real Estate Studies  
.3-4 units  SC  
- Variable hours  
- Note: May serve to satisfy CA DRE continuing education requirement for industry licensees.  
A supplemental course in real estate designed to provide a study of current real estate problems or activities. Specific topics to be announced. CSU

CAREER – CARER
See also Counseling - COUNS
Beth Hauscarrigue, dean
Counseling Division
Student Services Center, Room 203

Possible career opportunities
Diablo Valley College’s career development courses are designed to provide students with opportunities to explore career fields and become familiar with the skills needed to successfully obtain and maintain employment.

CARER-110  Career and Life Planning  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly COUNS-110  
In this course students will learn research strategies to make effective career and major choices, using a variety of techniques to find, retrieve, and evaluate career planning information. Students will use career assessments to identify their preferred work values, interests, skills and personality traits. Research will then focus on the exploration of labor market needs; educational and employment requirements; and career ladders within given professions resulting in an effective educational and job search plan. This course will help students develop psychological “soft skills” in the domain of human relations such as interpersonal communication, self-esteem and professional confidence, emotional intelligence, conflict resolution, and effective collaboration in team-building skills. CSU
CARER-120 Career Assessment  
1 unit  P/NP  
- 18 hours lecture per term  
- Note: Testing fee required. Not intended for students who have completed CARER-110  
This course is designed to promote self-awareness through the administration of career assessments, discussion and interpretation of interests, aptitude, personality and values assessments. Various career assessment inventories will be used as a starting point in the career exploration process. Recommended for people changing careers and/or re-entering the workforce. CSU

CARER-130 Career and Major Exploration  
1 unit  P/NP  
- 18 hours lecture per term  
- Recommended: CARER-120 or equivalent  
- Formerly CARER-160  
This course is designed for students who are undecided about their career and/or educational goals. It includes an introduction to the basic career planning process and computerized information systems that aid in the research of occupational and college major options. CSU

CARER-140 Job Search Strategies  
1 unit  P/NP  
- 18 hours lecture per term  
This course prepares students for the employment search process including identification of goals and job skills, how to complete an application, traditional and electronic cover letters and resumes, interviewing techniques, job market research and overview of employee and employer rights. Students will identify and discuss the employability skills most commonly sought by employers. CSU

CARER-150 Topics in Careers  
.3-4 units  SC  
- Variable hours  
This course is designed to address topics in career and job search related subjects. Specific topics will be announced in the schedule of classes. CSU

CARER-170 Career Transitions  
1 unit  P/NP  
- 18 hours lecture per term  
This course provides a theoretical and practical basis for the student to define and plan individual career/life transitions. Lecture and discussions will analyze the processes involved in making informed career decisions as well as effective strategies for determining career transitions. Students will also identify and discuss the employability skills most commonly sought by employers. CSU

CHEMISTRY – CHEM  
Tish Young, dean  
Physical Sciences and Engineering Division  
Physical Sciences Building, Room 263

Possible career opportunities
Chemists identify and solve problems by applying logic, scientific thinking, and knowledge of natural laws. Chemistry majors work in educational settings and in government, non-profit charities, or research foundations. Chemists work in manufacturing companies, cosmetic companies, environmental assessment firms, medical laboratories, petroleum companies and pharmaceutical companies. They also can become health administrators, and physicians (all specialties). Many careers require more than two years of college study.

CHEM-106 Chemistry for Non-Science Majors  
4 units  SC  
- 72 hours lecture/36 hours laboratory per term  
- Prerequisite: MATH-090 or one year of high school algebra or equivalent  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: This is not a preparatory course for other chemistry courses  
This course is designed to develop scientific literacy for non-science majors and to meet the general education requirement for physical science with laboratory. The course places chemistry concepts in a practical context using qualitative and quantitative examples that are encountered in everyday life. Laboratory exercises include hands-on experiments related to concepts covered in lecture. CSU, UC (credit limits may apply to UC - see counselor)
CHEM-108  Introductory Chemistry
4 units  SC
• 72 hours lecture/36 hours laboratory per term
• Prerequisite: MATH-090 or one year of high school algebra or equivalent
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an introduction to the experimental science of chemistry. Using mathematical word problems and chemical terms, the student will have an overview of inorganic chemistry that could be used to continue to general chemistry or to complete the sequence of chemistry courses designed for nursing and dental hygiene (with CHEM-109). This course is appropriate for those that have no high school chemistry experience. CSU, UC (credit limits may apply to UC - see counselor)

CHEM-109  Introduction to Organic and Biochemistry
4 units  SC
• 72 hours lecture/36 hours laboratory per term
• Prerequisite: CHEM-108 or CHEM-120 or high school chemistry or equivalent
CHEM-109 provides a focused introduction to the chemistry of living things. Organic chemistry (the study of carbon compounds) is linked to biochemistry (the chemical basis of life) through the relationship of molecular structure and function. The CHEM-108 and 109 sequence is designed to meet the needs of programs such as dental hygiene and nursing. CSU, UC (credit limits may apply to UC - see counselor)

CHEM-120  General College Chemistry I
5 units  LR
• 90 hours lecture/72 hours laboratory per term
• Prerequisite: CHEM-108 or score of 3, 4 or 5 on AP Chemistry Test or appropriate chemistry skill level demonstrated through Chemistry Diagnostic Test or equivalents; MATH-120 or equivalent
• Recommended: Eligibility for ENGL-122 or equivalent
An introduction to the fundamentals of chemistry including the topics: atomic theory, chemical reactions, bonding, structure, stoichiometry, gases, solutions, redox, thermodynamics, equilibrium, and acid-base chemistry. C-ID CHEM 110, CHEM 120+121=C-ID CHEM 120S, CSU, UC

CHEM-121  General College Chemistry II
5 units  LR
• 90 hours lecture/72 hours laboratory per term
• Prerequisite: CHEM-120 or equivalent
This course is a continuation of CHEM-120, General College Chemistry I. Subject matter includes: buffers, titration curves, solubility products, thermodynamics, electrochemistry, kinetics, molecular orbital theory, coordination complexes, nuclear chemistry, organic chemistry, spectroscopy, quantitative experiments, and qualitative analysis. CHEM 120+121=C-ID CHEM 120S, CSU, UC

CHEM-150  Topics in Chemistry
.3-4 units  SC
• Variable hours
A supplemental course in chemistry to provide a study of current concepts and problems in chemistry. Specific topics will be announced in the schedule of classes. CSU

CHEM-226  Organic Chemistry I
5 units  LR
• 90 hours lecture/72 hours laboratory per term
• Prerequisite: CHEM-121 or equivalent
This course is the first term of a two term sequence (CHEM-226-227) that covers structure and bonding, stereochemistry, conformational analysis, reaction mechanisms, and the nomenclature, physical properties, and reactions of various classes of organic compounds (alkanes, alkenes, alkynes, alkyl halides, alcohols, and ethers). Basic organic laboratory techniques are introduced and used in syntheses or other projects. Chemical safety, information retrieval and good laboratory practices are emphasized. A variety of laboratory instrumentation skills are developed including operation and analysis using GC, IR and UV-Visible spectroscopy. CSU, UC

CHEM-227  Organic Chemistry II
5 units  LR
• 90 hours lecture/72 hours laboratory per term
• Prerequisite: CHEM-121 and CHEM-226 or equivalents
A continuation of CHEM-226, this second term course covers spectroscopy, additional reaction mechanisms, the nomenclature, physical properties, and reactions of other basic classes of compounds (aromatics, organometallics, aldehyes, ketones, carboxylic acids and their derivatives, and amines). The nature and reactions of multifunctional compounds, and the structure and reactions of biochemical molecules (carbohydrates, lipids, amino acids, proteins and nucleic acids) are also discussed. Laboratory work includes hands-on spectroscopic techniques (i.e. NMR, IR), qualitative organic analysis, more advanced projects involving synthesis, and a literature research project using university-level chemical literature resources. CSU, UC

CHEM-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to study special interests under the direction of the faculty. CSU
CHEM-299  Student Instructional Assistant

.5-3 units  SC

• Variable hours

• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

CHINESE – CHIN

Students with prior foreign language instruction should check with a language teacher regarding their proper placement in foreign language courses. The following system is generally used to determine the appropriate term of college work based on high school language: two years equal one college term; three years equal two college terms; four years equal three college terms.

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Possible career opportunities

The study of Chinese can open up opportunities in communications, foreign trade and banking, transportation, government, the Foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.

Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree

Mandarin Chinese

Certificate of achievement

Mandarin Chinese

Associate in arts degree

The associate in arts degree in Mandarin Chinese at DVC will provide students with skills in understanding, speaking, reading and writing Mandarin Chinese. The curriculum exposes students to Chinese culture and civilization and provides foundational skills in language that can apply to a broad range of international and domestic career opportunities and professions. The degree will provide lower division preparation for transfer to UC, CSU and other four year colleges and universities to earn a bachelor's degree.

The DVC Mandarin Chinese major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate-granting institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU Breadth). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a credit/no credit option for major courses and each of the major requirements must be completed with a "C" grade or higher. Certain courses may satisfy both major and general education requirements; however, the units are counted only once.

Students must complete the 20 units of major requirements, which will provide students with the essential grammar of the language and culture of China.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN-120 First Term Chinese</td>
<td>5</td>
</tr>
<tr>
<td>CHIN-121 Second Term Chinese</td>
<td>5</td>
</tr>
<tr>
<td>CHIN-220 Third Term Chinese</td>
<td>5</td>
</tr>
<tr>
<td>CHIN-221 Fourth Term Chinese</td>
<td>5</td>
</tr>
</tbody>
</table>

**total minimum required units** 20

Certificate of achievement - Mandarin Chinese

This certificate of achievement was created to give students the opportunity to show potential employers in this country and in other countries that the student has completed a certain number of courses in Chinese and prepares students with an intermediate to advanced knowledge of Chinese and familiarizes them with the culture of China and other Chinese-speaking countries.

This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of 15 to 20 units from the following list of courses. Each course used to meet a certificate requirement must be completed with a "C" grade or higher.

**complete at least 15 units from the following list of courses:**

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN 120 First Term Mandarin Chinese</td>
</tr>
<tr>
<td>CHIN 121 Second Term Mandarin Chinese</td>
</tr>
<tr>
<td>CHIN 220 Third Term Mandarin Chinese</td>
</tr>
<tr>
<td>CHIN 221 Fourth Term Mandarin Chinese</td>
</tr>
</tbody>
</table>

**total minimum required units** 15
CHIN-120 First-Term Mandarin Chinese
5 units SC
- 90 hours lecture/18 hours laboratory by arrangement per term
This beginning Chinese course emphasizes pronunciation drill, sentence pattern analysis and development of language skills in listening, speaking, reading, and writing. Character reading and writing are introduced. Cultural material and information are used extensively in this course. CSU, UC

CHIN-121 Second-Term Mandarin Chinese
5 units SC
- 90 hours lecture/18 hours laboratory by arrangement per term
- Recommended: CHIN-120 or equivalent
A continuation of CHIN-120 for verbal and written purposes. Use of original Chinese characters is introduced at the sentence and the paragraph level. Students will be familiarized with both simplified and original writing systems. Cultural topics may include education, family, and daily life. Writing skills will be emphasized. The proficiency level should develop to a basic survival level. CSU, UC

CHIN-150 Topics in Chinese
.3-4 units SC
- Variable hours
A supplemental course in Chinese to provide a study of current concepts and problems in Chinese and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

CHIN-220 Third-Term Mandarin Chinese
5 units SC
- 90 hours lecture/18 hours laboratory by arrangement per term
- Recommended: CHIN-120 or equivalent
This is a third term intermediate course, the continuation of CHIN-121, with a review of grammar. The student will develop fluency in understanding, speaking, reading and writing Chinese. The uses of the six basic functional components of the Chinese sentence are expanded and new vocabulary and idiomatic expressions are introduced. Selected readings about Chinese culture and literature will be explored. This course is taught entirely in original Chinese characters, and students may use either Chinese written system to develop their knowledge and ability. CSU, UC

CHIN-221 Fourth-Term Mandarin Chinese
5 units SC
- 90 hours lecture/18 hours laboratory by arrangement per term
- Recommended: CHIN-220 or equivalent
This course is the continuation of CHIN-220 to develop fluency in all aspects of the Chinese language with particular attention to literary forms as reflected in the contemporary Chinese world. This course reviews grammar and develops reading and writing skills in Chinese. Passages from Chinese literature and readings about Chinese culture will be studied. Computer skills in Chinese will be introduced. CSU, UC

CHIN-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

COLLOQUIA – COLQY

Colloquia are a discussion group of students who meet with an instructor over the period of a term. The purpose is to stimulate serious thought of a particular topic through discussion and analysis. The schedule of classes and student transcript will indicate the general subject matter of each colloquium offered. CSU
Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree for transfer
Communication studies

Certificate of achievement
Communication studies

Associate in arts degree in communication studies for transfer
The communication studies area views communicative behavior as central to human activity: to individual development, to interpersonal relationships, and to the functioning of political, economic, cultural, and social institutions.

The associate in arts degree in communication studies for transfer degree prepares students who wish to attend a four-year university or professional school. In addition, as effective verbal and nonverbal communication is a requirement for most jobs, the program prepares students for a wide variety of professions. Further, the program prepares students for careers in the fields of public relations, communication education, the performing arts, marketing, public relations, sales training and management. Additional careers in fields related to communication studies include salesperson, broadcaster, lawyer, tour guide, political campaign worker, teacher, customer service worker, public and international relations specialist, and negotiator/arbitrator.

Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate-granting institutions of their choice are met. To achieve the associate in arts in communication studies for transfer degree from DVC, students must (1) complete the psychology major requirements, (2) fulfill the requirements of either the CSU general education or the IGETC general education pattern, (3) complete 60 college transfer level units, and (4) obtain a minimum grade point average of 2.0.

Students must complete each course used to meet a major requirement with a “C” grade or higher. Certain courses may satisfy both a major and a general education requirement; however, the units are only counted once.

**major requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM-120</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>plus at least 6 units from:</td>
<td></td>
</tr>
<tr>
<td>COMM-123</td>
<td>Argumentation and Debate</td>
</tr>
<tr>
<td>COMM-128</td>
<td>Interpersonal Communication</td>
</tr>
<tr>
<td>COMM-130</td>
<td>Small Group Communication</td>
</tr>
<tr>
<td>plus at least 6 units from:</td>
<td></td>
</tr>
<tr>
<td>any course not used above or:</td>
<td></td>
</tr>
<tr>
<td>COMM-121</td>
<td>Persuasion and Critical Thinking</td>
</tr>
<tr>
<td>COMM-148</td>
<td>Performance of Literature</td>
</tr>
<tr>
<td>COMM-160</td>
<td>Projects in Public Speaking</td>
</tr>
<tr>
<td>COMM-161</td>
<td>Projects in Debate</td>
</tr>
<tr>
<td>COMM-162</td>
<td>Projects in Oral Interpretation</td>
</tr>
<tr>
<td>JRNAL-110</td>
<td>Mass Media of Communication</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>any course not used above, or:</td>
<td></td>
</tr>
<tr>
<td>COMM-124</td>
<td>Voice and Diction</td>
</tr>
<tr>
<td>JRNAL-120</td>
<td>Newswriting Techniques</td>
</tr>
<tr>
<td><strong>total minimum required units</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

Certificate of achievement – Communication studies
To earn a certificate of achievement in communication studies, students must complete three core courses supplemented by ten restricted electives from which students select a minimum of three units to meet their individual educational and career goals. The certificate program courses also meet some of the requirements of the major for the associate in arts degree in communication studies for transfer at Diablo Valley College.

**required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM-120</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>COMM-121</td>
<td>Persuasion and Critical Thinking</td>
</tr>
<tr>
<td>COMM-128</td>
<td>Interpersonal Communication</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>COMM-123</td>
<td>Argumentation and Debate</td>
</tr>
<tr>
<td>COMM-124</td>
<td>Voice and Diction</td>
</tr>
<tr>
<td>COMM-148</td>
<td>Performance of Literature</td>
</tr>
<tr>
<td>COMM-155</td>
<td>Topics in Communication Studies</td>
</tr>
<tr>
<td>COMM-160</td>
<td>Projects in Public Speaking</td>
</tr>
<tr>
<td>COMM-161</td>
<td>Projects in Debate</td>
</tr>
<tr>
<td>COMM-162</td>
<td>Projects in Oral Interpretation</td>
</tr>
<tr>
<td>COMM-298</td>
<td>Independent Study</td>
</tr>
<tr>
<td><strong>total minimum required units</strong></td>
<td>12</td>
</tr>
</tbody>
</table>
COMM-120  Public Speaking  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Formerly SPCH-120

In this course, students learn to prepare and present public speeches using the principles of effective communication. Emphasis is placed on speaking to inform, persuade, and special occasion speeches. Key principles learned include audience analysis, determining speech goals, organization, clarity, language, evidence, visual aids, and delivery. CSU, UC

COMM-121  Persuasion and Critical Thinking  
3 units  LR  
• 54 hours lecture per term  
• Prerequisite: ENGL-122 or equivalent  
• Formerly SPCH-121

This course is an introduction to the principles of reasoning and their application to the analysis and evaluation of political and marketplace communication. It examines the structure of argument, underlying assumptions, the quality of evidence used to support claims, the use of language, the discovery of formal and informational fallacies, and the effect of print and electronic media on argumentation. This course emphasizes the integration of critical thinking principles with techniques of effective written and spoken argument. CSU, UC (credit limits may apply to UC - see counselor)

COMM-123  Argumentation and Debate  
3 units  LR  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Formerly SPCH-123

In this course, students study the application of the principles of argumentation theory, including the analysis of propositions, issues, evidence, and reasoning, and applying them through critical thinking skills in debate. C-ID COM 120, CSU, UC (credit limits may apply to UC - see counselor)

COMM-124  Voice and Diction  
3 units  SC  
• 54 hours lecture per term  
• Formerly SPCH-124

This course focuses on the vocal instrument for the speaker. Drills and exercises will address vocal strength, resonance, inflection, articulation, and quality. This course is intended for the general student in oral communication, as well as communication, speech, and drama majors. CSU, UC

COMM-128  Interpersonal Communication  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Formerly SPCH-128

This course provides an introduction to the theory, basic principles, and methods of oral communication, with emphasis on improving speaking and listening skills within the context of interpersonal communication. Content will stress psychological, social, cultural, and linguistic factors which affect human interaction. Attention will be given to perception, listening, conflict resolution, relationship development and stages, and verbal and nonverbal communication. CSU, UC

COMM-130  Small Group Communication  
3 units  SC  
• 54 hours lecture per term  
• Formerly SPCH-130

A study of communication theory and research applied to working in small groups. Emphasis will be on individual communication behaviors and group practices that create successful group work. Skill development includes leadership, oral communication and team. CSU, UC

COMM-148  Performance of Literature  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Formerly SPCH-148

This course develops, through analysis and repeated oral performance, an appreciation for the skill of reading literature (poetry, prose, and drama) out loud. CSU, UC

COMM-155  Topics in Communication Studies  
.3-4 units  SC  
• Variable hours  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Formerly SPCH-155

A supplemental course in communication studies to provide a study of current concepts and problems in communication studies. Specific topics will be announced in the schedule of classes. CSU

COMM-160  Projects in Public Speaking  
1 unit  SC  
• May be repeated three times  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Formerly SPCH-160

Participation in public speaking events which include persuasive speaking, informative speaking, impromptu speaking, extemporaneous speaking, communication analysis and speeches to entertain as a member of the DVC Intercollegiate Speech and Debate Team. Students in this class may travel to tournaments in northern California and/or prepare speeches to present to local community groups outside of the class period or they may participate in on campus speaking events. CSU
COMM-161 Projects in Debate
1 unit SC
- May be repeated three times
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly SPCH-161

In this course, students participate in debate as a member of the DVC Intercollegiate Speech and Debate Team. Students in this class may travel to tournaments in northern California and/or prepare debates to present to local community groups outside of the class period. CSU

COMM-162 Projects in Oral Interpretation
1 unit SC
- May be repeated three times
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly SPCH-162

In this course, students participate in speaking projects which include oral interpretation, prose, poetry, dramatic interpretation, duo interpretation and Reader’s Theater as a member of the DVC Intercollegiate Speech and Debate Team. Students in this class may travel to tournaments in northern California and/or prepare oral readings to present to local community groups outside of the class period. CSU

COMM-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
- Formerly SPCH-298

An opportunity for advanced students to pursue special studies in communication under the direction of faculty. CSU

COMM-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
- Formerly SPCH-299

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

COMPUTER INFORMATION SYSTEMS – CIS

Kathleen Costa, dean
San Ramon Campus Division
San Ramon Campus

Possible career opportunities
Training in computer information systems prepares students for a broad range of roles. Some possible career options include webmaster, web developer, web designer, executive assistant, office manager, office assistant, entrepreneur, database analyst, database designer, computer trainer, project manager, and team member in a startup.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Computer information systems
Specializations:
- Database management
- Project management
- Web technology
- Web graphics

Certificates of achievement
Computer information systems - Core
Computer information systems - Database management
Computer information systems - Project management
Computer information systems - Web graphics
Computer information systems - Web technology

Certificates of accomplishment
Computer information systems - Database management
Computer information systems - Project management
Computer information systems - Web graphics
Computer information systems - Web technology
Associate in science degree - Computer information systems

The computer information systems associate in science program prepares the student for jobs in business and government as information technologies and management workers. Principal areas of study are computer software applications, internet technologies, database systems, project management systems and basic network principles. These CIS courses prepare students for a career path in computer information systems and technologies. These courses teach terminology and provide hands-on laboratory experience with operating and network systems and stand alone and internet based applications.

In order to obtain an associate in science degree, students must complete the courses required for the core certificate of achievement and a minimum of one area of technical specialization, and complete all general education requirements as listed in the Diablo Valley College catalog. To earn a degree, students must complete each course used to meet a specialization, and complete all general education requirements regardless of the number of specializations completed. Multiple certificates may be awarded.

Students are limited to one associate in science degree regardless of the number of specializations completed.

**major requirements**

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
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<tbody>
<tr>
<td>CIS-115</td>
<td>Microsoft Word - Comprehensive ..... 2</td>
</tr>
<tr>
<td>CIS-116</td>
<td>Microsoft Excel - Comprehensive ..... 2</td>
</tr>
<tr>
<td>CIS-118</td>
<td>Microsoft PowerPoint - Comprehensive ..... 2</td>
</tr>
</tbody>
</table>

plus at least 2 units from:

<table>
<thead>
<tr>
<th>course</th>
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<tbody>
<tr>
<td>CIS-100</td>
<td>Microsoft Windows - Comprehensive ..... 2</td>
</tr>
<tr>
<td>CIS-101</td>
<td>Apple Mac Operating System ..... 2</td>
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</table>

plus at least 4 units from:

<table>
<thead>
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<tbody>
<tr>
<td>CIS-117</td>
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</tr>
<tr>
<td>CIS-119</td>
<td>Microsoft Outlook - Comprehensive ..... 2</td>
</tr>
<tr>
<td>COMSC-138</td>
<td>Advanced Microsoft Office Using Visual Basic for Applications (VBA) ..... 2</td>
</tr>
</tbody>
</table>

**Core courses units subtotal** 12

Choose one of the following four technical specialization areas:

**database management - required courses**

<table>
<thead>
<tr>
<th>course</th>
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</thead>
<tbody>
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<td>Microsoft Access - Comprehensive ..... 2</td>
</tr>
<tr>
<td>CIS-160</td>
<td>Introduction to MySQL ..... 2</td>
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</table>

**project management - required courses**

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
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<tbody>
<tr>
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<td>Introduction to Project Management ..... 3</td>
</tr>
<tr>
<td>CIS-181</td>
<td>Project Management Fundamentals/ PMI PMP Prep ..... 3</td>
</tr>
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**project management - recommended electives**

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<tbody>
<tr>
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<td>Microsoft Project ..... 2</td>
</tr>
<tr>
<td>CIS-186</td>
<td>Microsoft Visio ..... 2</td>
</tr>
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**web graphics - required courses**

<table>
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<tr>
<th>course</th>
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<tbody>
<tr>
<td>CIS-130</td>
<td>Adobe Photoshop Elements ..... 2</td>
</tr>
<tr>
<td>CIS-131</td>
<td>Adobe Flash - Comprehensive ..... 2</td>
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<tr>
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<td>WWW Publishing with HTML ..... 1</td>
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**total minimum required units** 18

**Certificate of achievement - Computer information systems - core**

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**total minimum required units** 12

**Certificate of achievement - Computer information systems - database management**

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**total minimum required units** 18
Certificate of achievement - Computer information systems - web technology

**required courses**

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**Certificate of achievement - Computer information systems - project management**

**required course**

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**Certificate of achievement - Computer information systems - web graphics**

**required courses**

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**Certificate of accomplishment - Computer information systems - database management**

**required courses**

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<th>Course</th>
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<td>CIS-117</td>
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**Certificate of accomplishment - Computer information systems - project management**

**required courses**

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**Certificate of accomplishment - Computer information systems - web graphics**

**required courses**

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web graphics - recommended electives
CIS-133 Developing Video Content for the Web .......... 2
CIS-134 Using Apple iLife .................................. 2

Certificate of accomplishment - Computer information systems - web technology
required courses units
CIS-105 Introduction to Web Design ....................... 2
CIS-106 Adobe Dreamweaver - Comprehensive .......... 2
CIS-107 Web Database with Dreamweaver ............... 2
total minimum required units 6

web technology - recommended electives
CIS-117 Microsoft Access - Comprehensive .......... 2
CIS-160 Introduction to MySQL ........................... 2
COMSC-195 WWW Publishing with HTML .............. 1

CIS-100 Microsoft Windows - Comprehensive 2 units SC
- 36 hours lecture/18 hours laboratory per term
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.
This course teaches the functions of Microsoft Windows Operating System (OS). It prepares students to use the various local and network functions of the current Windows OS. No previous computer experience is required. CSU

CIS-101 Apple Mac Operating System 2 units SC
- 36 hours lecture/18 hours laboratory per term
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.
This course teaches the functions of the Apple Mac Operating System, including the graphical user interface, file and folder management, system preferences, and networking. No previous computer experience is required. CSU

CIS-105 Introduction to Web Design 2 units SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.
This course introduces students to the web development cycle. This process is used to create, organize, and maintain web sites that are easy to use and understand. Emphasis is placed on navigation, organization, presentation, and maintenance of websites. No previous web design experience is required. CSU

CIS-106 Adobe Dreamweaver - Comprehensive 2 units SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.
This course is for students who want to learn the comprehensive functions of Adobe Dreamweaver. This program, which is part of the Adobe Creative Suite, is a web authoring and web animation software that is used industry wide. This course is for students who want a deeper understanding of the program. No previous experience with this software is required. CSU

CIS-107 Web Database with Dreamweaver 2 units SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.
This course will enable students to use Dreamweaver to develop database-driven web pages. Students will learn basic database concepts and use Dreamweaver’s server behaviors to connect to a database and display and manipulate database content over the web. CSU

CIS-115 Microsoft Word - Comprehensive 2 units SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.
This course is for students who want to learn the comprehensive functions of Microsoft Word, a powerful word processing program which is part of the Microsoft Office Suite. This course prepares students for Microsoft certification testing but is also useful for students who want a deeper understanding of the program. No previous experience with this software is required. CSU

CIS-116 Microsoft Excel - Comprehensive 2 units SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.
This course is for students who want to learn the comprehensive functions of Microsoft Excel, a powerful spreadsheet program which is part of the Microsoft Office Suite. This course prepares students for Microsoft certification testing but is also useful for students who want a deeper understanding of the program. No previous experience with this software is required. CSU
CIS-117  Microsoft Access - Comprehensive  
2 units  SC  
- 36 hours lecture/18 hours laboratory per term  
- Recommended: CIS-100 or CIS-101 or equivalent  
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

This course is for students who want to learn the comprehensive functions of Microsoft Access, a powerful database program which is part of the Microsoft Office Suite. This course prepares students for Microsoft certification testing but is also useful for students who want a deeper understanding of the program. No previous experience with this software is required. CSU

CIS-118  Microsoft PowerPoint - Comprehensive  
2 units  SC  
- 36 hours lecture/18 hours laboratory per term  
- Recommended: CIS-100 or CIS-101 or equivalent.  
- Note: Students may petition to repeat this course when software or hardware is changed.

This course is for students who want to learn the comprehensive functions of Microsoft PowerPoint, a powerful presentation program which is part of the Microsoft Office Suite. This course prepares students for Microsoft certification testing but is also useful for students who want a deeper understanding of the program. No previous experience with this software is required. CSU

CIS-119  Microsoft Outlook - Comprehensive  
2 units  SC  
- 36 hours lecture/18 hours laboratory per term  
- Recommended: CIS-100 or CIS-101 or equivalent.  
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

This course is for students who want to learn the comprehensive functions of Microsoft Outlook, a powerful email and personal information manager program which is part of the Microsoft Office Suite. This course prepares students for Microsoft certification testing but is also useful for students who want a deeper understanding of the program. No previous experience with this software is required. CSU

CIS-131  Adobe Flash - Comprehensive  
2 units  SC  
- 36 hours lecture/18 hours laboratory per term  
- Recommended: CIS-100 or CIS-101 or equivalent.  
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

This course is for students who want to learn the comprehensive functions and have a deeper understanding of Adobe Flash. This program, which is part of the Adobe Creative Suite, is a web authoring and web animation software that is used industry wide. No previous experience with this software is required. CSU

CIS-132  Adobe Premiere Elements - Comprehensive  
2 units  SC  
- 36 hours lecture/18 hours laboratory per term  
- Recommended: CIS-100 or CIS-101 or equivalent.  
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

This course will allow students to gain proficiency in Adobe Premiere Elements, covering video acquisition, editing, titling, web and DVD authoring. CSU

CIS-133  Developing Video Content for the Web  
2 units  SC  
- 36 hours lecture/18 hours laboratory per term  
- Recommended: CIS-100 or CIS-101 or equivalent.  
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

This course prepares students to take digitally formatted video and prepare it for use on the Internet. Students will learn how to import digital video, create screen captures, edit, and produce video for distribution via online and other digital media. CSU

CIS-134  Using Apple iLife  
2 units  SC  
- 36 hours lecture/18 hours laboratory per term  
- Recommended: CIS-100 or CIS-101 or equivalent.  
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

An introduction to Apple’s iLife to create, organize, view and publish digital content, such as pictures, movies, music, and web pages. The course will cover iPhoto, iMovie, GarageBand, and iDVD. CSU

CIS-150  Topics in Computer Information Systems  
.3-.4 units  SC  
- Variable hours

A supplemental course in computer information systems to provide a study of current concepts and problems. Specific topics will be announced in the schedule of classes. CSU

COMPUTER INFORMATION SYSTEMS
CIS-160  Introduction to MySQL
2 units  SC
• 36 hours lecture/18 hours laboratory per term
• Recommended: CIS-100 or CIS-101 or equivalent
• Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

This course introduces students to the MySQL database program, which is used to create, organize, and maintain dynamic web sites. Emphasis is placed on table creation, queries, and database management. CSU

CIS-180  Introduction to Project Management
3 units  SC
• 54 hours lecture per term
• Note: Credit by examination option available

This is an introductory course in professional project management. This course prepares students to become project management professionals by defining its origins and introducing key base concepts, terminology, and processes. The foundation work developed here will prepare students to continue in the project management course of study. This course requires no previous experience with project management. CSU

CIS-181  Project Management/PMI PMP Preparation
3 units  SC
• 54 hours lecture per term
• Recommended: CIS-180 or equivalent
• Note: Credit by examination option available

This course is an intermediate course on formal professional project management. This course prepares the student to take the internationally recognized Project Management Institute (PMI) Project Management Professional (PMP) certification exam. Earning a PMP certification demonstrates that the student has acquired the skills to manage projects, deliver products and has a solid knowledge of PMP fundamentals. CSU

CIS-185  Microsoft Project
2 units  SC
• 36 hours lecture/18 hours laboratory per term
• Recommended: CIS-100 or CIS-101 or equivalent
• Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

This course introduces the basic features and tools of Microsoft Project, including the following: creating a task list, setting up and assigning resources, tracking progress on tasks, organizing and formatting project details, publishing project information, sharing project information with other programs, tracking project progress, and consolidating projects and resources. CSU

CIS-186  Microsoft Visio
2 units  SC
• 36 hours lecture/18 hours laboratory per term
• Recommended: CIS-100 or CIS-101 or equivalent
• Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed.

Students will learn to use Microsoft Visio to create diagrams and flowcharts, including designing, creating, saving, and printing new Visio documents. CSU

Possible career opportunities
The job titles of people employed in computer networking include: systems administrator, network administrator, network engineer, database administrator, LAN specialist and network designer.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Microsoft Windows systems administration
Associate in science degree - Microsoft Windows systems administration

The associate degree in computer networking - Microsoft Windows systems administration prepares a student for a career in information technology while enabling the student to earn an associate in science degree. The degree offers students a broad general education while integrating an in-depth study of networking with Microsoft products. Students who intend to transfer to a four-year program should consult with a counselor regarding other course requirements. To earn a degree, students must complete each course used to meet a major requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework for the major and complete all general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

### major requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>BUS-250</td>
<td>Business Communications I</td>
<td>3</td>
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<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CNT-105</td>
<td>Computer Networking Hardware/Software</td>
<td>3</td>
</tr>
<tr>
<td>CNT-114</td>
<td>Microsoft Windows Operating System Essentials/Administration</td>
<td>3</td>
</tr>
<tr>
<td>CNT-117</td>
<td>Implementing Microsoft Windows Directory Services</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100</td>
<td>Introduction to Computers and Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100L</td>
<td>Introduction to Computer Software</td>
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</tr>
<tr>
<td>COMTC-110</td>
<td>Introduction to Computer Hardware</td>
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<tr>
<td>PHYS-110</td>
<td>Elementary Physics</td>
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plus at least 6 units from:

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>CNT-103</td>
<td>Voice, Video and Network Cabling</td>
<td>1</td>
</tr>
<tr>
<td>CNT-116</td>
<td>Implementing Windows Server Enterprise</td>
<td>3</td>
</tr>
<tr>
<td>CNT-118</td>
<td>Implementing a Microsoft Windows Windows Infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>CNT-125</td>
<td>Introduction to Virtualization Technology</td>
<td>3</td>
</tr>
<tr>
<td>CNT-138</td>
<td>Implementing and Managing Microsoft Exchange Server</td>
<td>3</td>
</tr>
<tr>
<td>CNT-148</td>
<td>Network Security and Ethical Hacking</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-121</td>
<td>Database Administration</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total minimum required units:** 34

### CNT-105 Computer Networking Hardware/Software

3 units SC
- 54 hours lecture per term
- Recommended: COMSC-100 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed

This course is a foundation course that provides an overview of computer networking components. It provides the student with the concepts needed to work in a networking environment. This course explains and describes how computer networks are used, designed, installed, and the terminology associated with computer networks. This course begins to prepare students for the CompTIA Network+ exam and is the introduction course for the Microsoft and Computer Technical Support programs. CSU

### CNT-114 Microsoft Windows Operating System Essentials/Administration

3 units SC
- 45 hours lecture/27 hours laboratory per term
- Recommended: CNT-105 or equivalent; COMSC-100 or equivalent

This course provides students with the knowledge and skills necessary to perform administrative tasks in a single-domain Microsoft Windows network. The goal of this course is to provide individuals who are new to Microsoft Windows operating system with the knowledge necessary to understand and identify the tasks involved in supporting Windows networks. This is an introductory course designed to provide knowledge of user accounts, groups and group scopes, permissions, security, Active Directory terminology, optimizing IP address allocation, utilities, and Web Services. CSU

### CNT-116 Implementing Windows Server Enterprise

3 units LR
- 45 hours lecture/27 hours laboratory per term
- Recommended: CNT-114 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed

Students will learn to install and configure Microsoft Windows Professional on stand-alone computers and on client computers that are part of a workgroup or a domain. In addition, this course provides the skills and knowledge necessary to install and configure Windows Server and to create file, print, and Terminal Servers. Students will administer an organizational unit within a single domain structure. CSU
CNT-117  Implementing Microsoft Windows Directory Services
3 units  LR
• 45 hours lecture/27 hours laboratory per term
• Recommended: CNT-116 or equivalent
• Note: Students may petition to repeat this course when software or hardware is changed

Students will learn to install, configure, and administer Microsoft Windows Active Directory directory services. The course also focuses on implementing Group Policy and understanding the Group Policy tasks required to centrally manage users and computers. Students will use Group Policies to configure and manage the user desktop environment, to configure and manage software, and implement and manage security settings. Students will install and manage Windows Domains and Domain Controllers through Active Directory. CSU

CNT-118  Implementing a Microsoft Windows Network Infrastructure
3 units  LR
• 45 hours lecture/27 hours laboratory per term
• Recommended: CNT-116 or equivalent
• Note: Students may petition to repeat this course when software or hardware is changed

This course will enable students to install, configure, manage and support a network infrastructure that uses the Microsoft Windows Server products. The course focuses heavily on TCP/IP and related services, including DHCP Server service, DNS Server service, WINS, network security protocols, Public Key Infrastructure (PKI), Internet Protocol Security (IPSec), and remote access. The course also enables the student to configure Windows as a network router, configure Internet access for a network, configure a Web server, and manage a Windows deployment using Remote Installation Services (RIS). CSU

CNT-125  Introduction to Virtualization Technology
3 units  LR
• 45 hours lecture/27 hours laboratory per term
• Recommended: CNT-118 or equivalent
• Note: Students may petition to repeat this course when software or hardware is changed

The course provides students with the knowledge and skills necessary to install and configure both Microsoft and VMWare Virtualization Technologies. Students will be introduced to storage systems, business continuity, storage security and management, virtualization technology and concepts. This course will cover deployment and administration of various operating systems, Hyper-V, Virtual machine networks. CSU

CNT-138  Implementing and Managing Microsoft Exchange Server
3 units  LR
• 45 hours lecture/27 hours laboratory per term
• Note: Refer to course schedule for specific Exchange Server version

This course provides students with in-depth product information on the following topics: planning deployment and installing Exchange Server, architecture of Exchange Server, supporting Exchange Server in a single site or multisite enterprise environment, establishing messaging connectivity over the Internet, and supporting Web access to Exchange Server computers through Microsoft Outlook Web Access. CSU

CNT-148  Network Security and Ethical Hacking
3 units  LR
• 45 hours lecture/27 hours laboratory per term
• Recommended: CNT-114 or equivalent

Students will learn to analyze computers and networks for vulnerabilities and to preserve for forensic investigation. Students will learn about laws pertaining to computer and network forensic investigation. Students will perform case studies on cyber attack investigations. This course contributes to the preparation for the following certifications: AccessData Certified Examiner™ credential, Certified Information Systems Security Professional (CISSP), Cisco Certified Security Professional (CCSP), Security+, and Microsoft Security Certification. CSU

CNT-150  Topics in Computer Networking
3-4 units  SC
• Variable hours

A supplemental course in computer networking to provide a study of current concepts and problems in networking. Specific topics will be announced in the schedule of classes. CSU

CNT-161  Router Configuration and Implementation
2 units  SC
• 27 hours lecture/27 hours laboratory per term
• Recommended: CNT-105 or equivalent

This course introduces students to router configuration and implementation. Instruction includes safety, router commands, router bootup process, router IOS backup and restore process, TCP/IP addressing implementation, dynamic routing, and the administrator’s role and function. This course is part of the preparation for the Cisco Certified Networking Associate (CCNA) certification. CSU
Computing Science – COMSC

The computer science department offers courses in three general areas, each targeted to serve students with specific needs:

a. General education students seeking a computer literacy course which will transfer to both CSU and UC campuses and/or provide hands-on instruction in the use of personal computer for classroom and research needs (COMSC-100, 100L, 195)

b. Computer science transfer students planning to major in computer science or computer engineering at a four-year school (COMSC-110, 210, 255, 260)

c. Information systems (programming) professionals who are seeking to update their skills, (COMSC-171, 255, 256, 257)

Rachel Westlake, dean
Math and Computer Science Division
Math Building, Room 267

Possible career opportunities
Study in computer science prepares students for careers in programming, computer operations, systems analysis and engineering, and web design, as well as artificial intelligence, robotics, and software engineering and development. Some career options may require more than two years of college study.

Besides offering courses designed to meet lower-division requirements for a major in computer science, there is also a wide variety of courses covering current popular topics and new software development tools and languages. Such courses provide a path for working professionals to upgrade their skill-set and keep abreast with current technology.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Computer science

Certificates of achievement
Computer science - Advanced C++ programming
Computer science - Advanced Java programming
Computer science - Computer architecture
Computer science - Mobile and Enterprise Java programming
Computer science - Program design
Computer user support

Associate in science degree - Computer science
The associate in science in computer science is designed as a two-year curricular pathway that offers students a broad general education while integrating an in-depth study of computer science. Students will be prepared to assume entry-level positions in business and industry. Many of the courses are also applicable toward advanced levels of study. Students who intend to transfer to a four-year program in computer science should consult with a counselor regarding other mathematics and science requirements. To earn a degree, students must complete each course used to meet a major requirement with a “C” grade or higher, and complete all general education requirements as listed in the catalog. Certain courses may satisfy both major and other general education requirements; however the units are only counted once.

major requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>COMSC-110</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-165</td>
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</tr>
<tr>
<td>COMSC-210</td>
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<tr>
<td>COMSC-260</td>
<td>4</td>
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<tr>
<td>COMSC-200</td>
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<tr>
<td>or COMSC-255</td>
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<tr>
<td>or COMSC-256</td>
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<tr>
<td>total minimum required units</td>
<td>20</td>
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</tbody>
</table>

Certificate of achievement - Computer science - Advanced C++ programming
This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMSC-110</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-165</td>
<td>4</td>
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<tr>
<td>COMSC-200</td>
<td>4</td>
</tr>
<tr>
<td>total minimum required units</td>
<td>12</td>
</tr>
</tbody>
</table>
Certificate of achievement - Computer science - Advanced Java programming
This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses units
COMSC-110 Introduction to Programming 4
COMSC-255 Programming with Java 4
COMSC-256 Advanced Java Programming 4

total minimum required units 12

Certificate of achievement - Computer science - Computer architecture
This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses units
COMSC-110 Introduction to Programming 4
COMSC-165 Advanced Programming with C and C++ 4
COMSC-260 Assembly Language Programming/Computer Organization 4

total minimum required units 12

Certificate of achievement - Computer science - Mobile and enterprise Java programming
This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses units
COMSC-110 Introduction to Programming 4
COMSC-255 Programming with Java 4
COMSC-257 Mobile and Enterprise Java Programming 4

total minimum required units 12

Certificate of achievement - Computer science - Program design
This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses units
COMSC-110 Introduction to Programming 4
COMSC-165 Advanced Programming with C and C++ 4
COMSC-210 Program Design and Data Structures 4

total minimum required units 12

Certificate of achievement - Computer user support
This program gives students the skills in computer programming, personal productivity applications, and data communications that they will need to succeed as a software support specialist in a typical office environment where administrative and financial management are supported by personal computers. To be successful the individual must have an understanding of the capabilities and limitations of microcomputers, be able to recommend personal productivity solutions to management, purchase and install stand alone and networked microcomputers and software, write instructions for using applications, and provide training on new systems.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may only be completed by attending a combination of day and evening classes.

required courses units
CNT-105 Computer Networking Hardware/Software 3
COMSC-100 Introduction to Computers and Information Systems 3
COMSC-100L Introduction to Computer Software 1
COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA) 2

plus at least 3 units from:
CNT-114 Microsoft Windows Operating System Essentials/Administration 3
COMSC-110 Introduction to Programming 4
COMSC-171 Introduction to UNIX and Linux 2
COMSC-172 UNIX and Linux Administration 2.5

total minimum required units 12

COMSC-100 Introduction to Computers and Information Systems
3 units
• 54 hours lecture/18 hours laboratory per term
A beginning course designed to acquaint the student with the general concepts and basic vocabulary of computers and information systems. Includes introduction to the organization and functions of basic components of computers, and information processing systems. Instruction in programming procedures and programming logic is provided. Appropriate for the student with a general interest in this area as well as for the student desiring to pursue further training in computer science or information systems. CSU, UC (credit limits may apply to UC - see counselor)
COMSC-100L Introduction to Computer Software
1 unit SC
• 54 hours laboratory per term
• Recommended: Concurrent enrollment in COMSC-100
The student will learn to use the Microsoft Windows operating system and Microsoft Office, including the Excel spreadsheet program, the Access database program, the PowerPoint presentation program and the Word word processing program. The hands-on computer work will augment the basic concepts covered in COMSC-100. CSU, UC (credit limits may apply to UC - see counselor)

COMSC-110 Introduction to Programming
4 units SC
• 54 hours lecture/54 hours laboratory per term
• Prerequisite: Placement through the assessment process or MATH-090 or MATH-090SP or equivalent
• Recommended: COMSC-100 or equivalent
• Note: Credit by examination option available
Introduction to programming emphasizing modular design and development of programs, coding style, documentation, debugging, and testing. All control structures and data types of a commonly-used language are covered. CSU, UC

COMSC-110X Extended Introduction to Programming
2 units P/NP
• 27 hours lecture/27 hours laboratory per term
• Prerequisite: COMSC-110 or equivalent
• Note: The four-unit COMSC-110 is offered in either C++ or Java. Students cannot repeat COMSC-110 for the purpose of taking it in a different language. COMSC-110X offers this opportunity, in a compare and contrast context, without repeating the programming concepts taught in COMSC-110.
An extension of COMSC-110, allowing students to take the programming language portion of COMSC-110 in another language (C++ or Java). CSU

COMSC-120 SQL Programming
4 units SC
• 54 hours lecture/54 hours laboratory per term
• Recommended: COMSC-110 or ENGIN-135 or equivalent
• Note: Same as CNT-135. Refer to schedule of classes for specific Oracle and SQLServer versions.
This course covers the creation and maintenance of databases and tables. It also covers the storage, retrieval and manipulation of data. Both Oracle and Microsoft SQL Server are covered, including SQL script that is common to both, and product-specific variations. CSU

COMSC-121 Database Administration
4 units SC
• 54 hours lecture/54 hours laboratory per term
• Note: Same as CNT-131. Refer to schedule of classes for specific Oracle and SQLServer versions.
This course is designed to give the database administrator (DBA) a firm foundation in basic administrative tasks and provide the necessary knowledge and skills to set up, maintain, and troubleshoot a database. Both Oracle and SQL Server are covered. CSU

COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA)
2 units SC
• 27 hours lecture/27 hours laboratory per term
• Recommended: COMSC-100L or equivalent
• Note: Students may petition to repeat this course when software or hardware is changed.
This course teaches advanced features of Microsoft Office Suite, including Word, Excel, PowerPoint and Access. This course teaches customization and automation using Visual Basic for Applications (VBA). Topics include application integration, advanced functions, creating interactive forms, pivot tables, the tools, properties, objects, and language syntax of VBA and much more. CSU

COMSC-142 XML (eXtensible Markup Language)
2 units SC
• 27 hours lecture/27 hours laboratory per term
• Recommended: COMSC-195 or equivalent
This course introduces eXtensible Markup Language (XML) Documents. Students will learn the difference between HTML and XML and learn how to use XSL transformations. CSU

COMSC-150 Topics in Computer Science
.3-.4 units SC
• Variable hours
• Note: May be repeated twice when software is changed
A supplemental course in computer science to provide a study of current concepts and problems. Specific topics will be announced in the schedule of classes. CSU

COMSC-165 Advanced Programming with C and C++
4 units SC
• 54 hours lecture/54 hours laboratory per term
• Prerequisite: COMSC-110 or ENGIN-135 or equivalent
• Formerly COMSC-265
The course emphasizes programming techniques using C and C++ languages. The syntax of C will be reviewed, then advanced topics such as string processing, pointers, links, datatypes, structures, and dynamic memory allocation will be covered. CSU, UC
COMSC-171  Introduction to UNIX and Linux
2 units SC
- 27 hours lecture/27 hours laboratory per term
This is an introductory course in UNIX and Linux operating systems. The course covers shells, processes, permissions, utility programs, editors, usage of network services, shell scripting, AWK scripting, and X Window graphics. CSU, UC

COMSC-172  UNIX and Linux Administration
2.5 units SC
- 32 hours lecture/40 hours laboratory per term
- Recommended: COMSC-171 or equivalent
- Note: Course content will apply to all UNIX versions and Linux
This course prepares the student to install, maintain, and administer a UNIX or Linux system. Topics include installation, booting, hardware configuration, kernel configuration, TCP/IP configuration, X Window configuration, user management, Bootstrap Protocol and Dynamic Host Configuration Protocol (BOOTP/DHCP) servers, routing, Domain Name System (DNS) servers, file servers, email, web servers, backup, and security. CSU

COMSC-195  WWW Publishing with HTML
1 unit SC
- 18 hours lecture/9 hours laboratory per term
- Formerly COMSC-095
Learn to publish World Wide Web (WWW) pages using Hypertext Markup Language (HTML). Create your own web page and study how to create attractive and functional documents using text and graphics. CSU

COMSC-196  Advanced WWW Publishing
1 unit SC
- 18 hours lecture/9 hours laboratory per term
- Recommended: COMSC-195 or equivalent
- Formerly COMSC-096
This is an advanced WWW Publishing course which builds on the skills learned in COMSC-195 and provides further hands-on development of WWW documents and web programming fundamentals. CSU

COMSC-197  Advanced HTML - Style Sheets and DHTML
1 unit SC
- 18 hours lecture/9 hours laboratory per term
- Recommended: COMSC-195 or equivalent
- Formerly COMSC-097
This course will cover the use of “style sheets” to create formatting templates for a website and to precisely control the position and appearance of items on each web page. It will also cover DHTML techniques for creating animations. This class will open opportunities for students who want to be more involved in web page programming. CSU

COMSC-200  Object Oriented Programming C++
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: COMSC-165 or equivalent
- Formerly COMSC-266
This course provides detailed coverage of the concepts and syntax of the C++ Language. Coverage includes inheritance, overloaded operators, overloaded default operators, virtual functions, memory management, files, streams, templates, and exceptions. CSU, UC

COMSC-210  Program Design and Data Structures
4 units LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: COMSC-165 or equivalent
- Recommended: COMSC-200 or equivalent
Techniques relevant to program design and selection of data structures for larger programs. Topics covered include design techniques, effective use of recursion, algorithmic efficiency and O-notation, linked lists, binary trees, B-trees, graphs, sorting, and searching techniques. Extensive programming of a variety of data structures is required. CSU, UC

COMSC-255  Programming with Java
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Recommended: COMSC-110 or equivalent
This course emphasizes programming techniques using the Java programming language. The syntax and deployment of Java applications are reviewed. Advanced topics such as objects, classes, methods, Object Oriented Programming (OOP) principles, Graphical User Interface (GUI), Input/Output (I/O), data structures, applets, networking, and threads are covered. CSU, UC

COMSC-265  Mobile and Enterprise Java Programming
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Recommended: COMSC-255 or equivalent
The course covers Mobile and Enterprise programming concepts using the Java programming language. The Mobile programming topics include activities, services, broadcast receivers, content providers, telephony, text messaging and location services. The Enterprise programming concepts include Enterprise Java Beans (EJB’s), Session Beans, Entity Beans, Message Driven Beans, and Java Naming and Directory Services (JNDI). CSU
COMSC-260 Assembly Language Programming/Computer Organization

4 units SC
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: COMSC-165 or equivalent

A course covering the basics of machine architecture, machine language, assembly language, operating system interface, and interfacing with high level languages. Topics include data representation, instruction representation and execution, addressing, indexing, macros, subroutine linkages, storage and time efficiency issues, interrupt handling, virtual memory, cache memory, and dynamic address translation. CSU, UC

COMPUTER TECHNICAL SUPPORT – COMTC

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
The field of computer technical support includes jobs related to computer assembly, computer upgrading, computer servicing, and computer networking including wireless systems. In the industrial area job opportunities include computer controls and data acquisition. Job opportunities are good for individuals with skills in computer hardware, computer software and electronics.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree - Computer technical support
This two-year associate in science degree program is intended to prepare the student for jobs in business and government as computer support technicians. Principle areas of study are computer software applications, hardware, and basic network principles. Instruction will include the installation, support and repair of microcomputers, especially those attached to local area networks (LANs). To earn a degree, students must complete each course used to meet a major requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework for the major, and complete all general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

Certificate of achievement - Computer technical support
This program is intended to prepare the student for jobs in business and government as computer support technicians. Principle areas of study are computer software applications, hardware, and basic network principles. Instruction will include the installation, support and repair of microcomputers, especially those attached to local area networks (LANs). To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework for the certificate. Certificate requirements are available in the evening, day and on weekends.

Total minimum required units 23

Certificate of accomplishment - Computer technical support
This program is intended to prepare the student for jobs in business and government as computer support technicians. Principle areas of study are computer software applications, hardware, and basic network principles. Instruction will include the installation, support and repair of microcomputers, especially those attached to local area networks (LANs). To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework for the certificate. Certificate requirements are available in the evening, day and on weekends.

Total minimum required units 23
Certificate of accomplishment - Computer technical support

This program prepares students for entry-level jobs as computer technicians. Typical jobs would be computer assembly, computer upgrading, and introductory computer repair with an overview of computer networking. The COMTC-110 and COMTC-118 courses help students prepare for the “A+” computer technician exam. The “A+” computer technician is intended for individuals with six months or more of computer technician work experience. The A+ exam is administered by Sylvan Prometric off campus and has a fee associated with the exam. The courses listed below change frequently because of new versions of software, so students are advised to consult with the faculty in the computer networking/computer technical support department.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate. Certificate requirements are available in the evening and some are offered in the day and on weekends.

**required courses**
- COMTC-110 Introduction to Computer Hardware/Software ........................................4 units
- COMTC-118 Introduction to Operating Systems ...........................................................................4
- CNT-105 Computer Networking Hardware/Software ..........................................................3
- CNT-114 Microsoft Windows Operating System Essentials/Administration ..........................3

**total minimum required units** ......................................................... 14

**COMTC-110 Introduction to Computer Hardware/Software**

4 units  LR  
- 54 hours lecture/54 hours laboratory per term  
- Note: Students may petition to repeat this course when software or hardware is changed  
- Formerly COMTC-110B  

This is an introductory level course for students who have no computer hardware experience. Students will build and configure a variety of computer systems, and learn how to do basic hardware and operating system troubleshooting and repair. This course will also include topics in networking, printers, data acquisition and robotic controls. CSU

**COMTC-115 A+ Exam Preparation**

2 units  SC  
- 36 hours lecture/18 hours laboratory per term  
- Recommended: COMTC-110 or equivalent  

This course will cover the topics that are on the A+ computer technician exam. Students will learn the scope of the exam by taking practice exams, discussion of objectives, and concentrating on the areas that they need improvement of their knowledge. This course compliments the COMTC-110-Introduction to Computer Hardware/Software, COMTC-118-Introduction to Operating Systems and CNT-105-Computer Networking Hardware/Software courses. CSU

**COMTC-118 Introduction to Operating Systems**

4 units  LR  
- 54 hours lecture/54 hours laboratory per term  
- Note: Students may petition to repeat this course when software or hardware is changed  

This course combines theory with hands-on experience in an introduction to central processing units (CPU), hard disk controllers, magnetic data storage, various file systems, and file maintenance tasks. This course will introduce students to the procedures involved in supporting various versions of Windows, DOS and LINUX operating systems. CSU

**COMTC-120 Computer Systems Troubleshooting**

4 units  LR  
- 54 hours lecture/54 hours laboratory per term  
- Prerequisite: COMTC-110 and COMTC-118 or equivalents  

This advanced level course provides instruction in computer systems troubleshooting and configuration for both hardware and software. Students will learn problem-solving techniques and how to solve problems using diagnostic software and hardware. Troubleshooting techniques will be applied through laboratory exercises. CSU

**COMTC-150 Topics in Computer Service**

3-4 units  SC  
- Variable hours  

A supplemental course in computer service technology to provide a study of current concepts and practices in computer servicing and related subjects. Specific topics will be announced in the schedule of classes. CSU

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**CONSTRUCTION – CONST**

Tish Young, dean  
Physical Sciences and Engineering Division  
Physical Sciences Building, Room 263

Possible career opportunities

Students completing a certificate in construction are qualified for positions in middle management in the building and construction inspection field, and in supervision for the construction industry.

Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.
Program and Course Descriptions

CONSTRUCTION

Associate in science degree
Construction

Specializations:
- Construction management
- Construction and building inspection
- Construction and supervision and superintendency

Certificates of achievement
Construction and building inspection
Construction management
Construction and supervision and superintendency

Associate in science degree – Construction

Upon successful completion of one of the areas of specialization, the student will have the necessary knowledge and skills for a career in building or construction inspection, or for supervision responsibilities in the construction industry. This program is also valuable for those already employed in the field who wish to upgrade their skills.

To earn an associate in science degree with a major in construction, students must complete each course used to meet the major requirement with a “C” grade or higher and complete general education requirements as listed in the catalog. A student is eligible for graduation with an associate in science degree after the satisfactory completion of one of three areas of specialization, general education requirements and degree-applicable elective coursework for a total of 60 units. Degree requirements can be completed by attending classes in the day, the evening, or both. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer. DVC construction students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU C.E.).

Students are limited to one associate in science degree in construction regardless of the number of specializations completed. Multiple certificates of achievement may be awarded.

Construction management specialization

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-244</td>
<td></td>
</tr>
<tr>
<td>Architectural Practice and Working Drawings I ........................................... 3</td>
<td></td>
</tr>
<tr>
<td>BUS-101</td>
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<tr>
<td>Business English ................................................................. 3</td>
<td></td>
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<tr>
<td>COMSC-100</td>
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<tr>
<td>Introduction to Computers and Information Systems ................................... 3</td>
<td></td>
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<tr>
<td>COMSC-100L</td>
<td></td>
</tr>
<tr>
<td>Introduction to Computer Software ...................................................... 1</td>
<td></td>
</tr>
<tr>
<td>CONST-135</td>
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<tr>
<td>Construction Processes (Residential) .................................................. 4</td>
<td></td>
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<tr>
<td>CONST-136</td>
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<tr>
<td>Construction Processes (Commercial) .................................................. 4</td>
<td></td>
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<tr>
<td>CONST-144</td>
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<tr>
<td>Materials of Construction .............................................................. 3</td>
<td></td>
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<tr>
<td>CONST-244</td>
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<tr>
<td>Estimating - Residential ................................................................. 3</td>
<td></td>
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<tr>
<td>CONST-273</td>
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<tr>
<td>Construction Management ................................................................. 3</td>
<td></td>
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<tr>
<td>CONST-276</td>
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<tr>
<td>Legal Aspects of the Construction Industry ......................................... 3</td>
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<tr>
<td>MATH-120</td>
<td></td>
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<tr>
<td>Intermediate Algebra ............................................................ 5</td>
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<td>PHYS-110</td>
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<td>Elementary Physics ................................................................. 3</td>
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<td><strong>total minimum required units</strong></td>
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Construction and building inspection specialization

<table>
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<td>CONST-114</td>
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<tr>
<td>Blueprint Reading ................................................................. 3</td>
<td></td>
</tr>
<tr>
<td>CONST-124</td>
<td></td>
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<tr>
<td>Construction Details and Specifications ......................................... 3</td>
<td></td>
</tr>
<tr>
<td>CONST-170</td>
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<tr>
<td>Fundamentals of Building Inspection ........................................... 3</td>
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<td>CONST-181</td>
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<tr>
<td>Building Code Interpretation: Non-Structural .................................... 3</td>
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<td>CONST-182</td>
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<td>Building Code Interpretation: Structural ......................................... 3</td>
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<td>CONST-183</td>
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<td>Title 24: Energy Conservation Codes ............................................. 3</td>
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<td>CONST-191</td>
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<tr>
<td>Plumbing Code Interpretation ........................................................ 3</td>
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<td>Electrical Codes: Articles 90-398 .................................................. 3</td>
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<td>CONST-267</td>
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<td>Electrical Codes: Articles 400-830 .................................................. 3</td>
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Construction and supervision and superintendency specialization

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<tr>
<td>Introduction to Management Studies .................................................. 3</td>
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<td>BUSMG-121</td>
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<tr>
<td>Practices and Concepts of Supervision ........................................... 3</td>
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<tr>
<td>CONST-114</td>
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<tr>
<td>Blueprint Reading ................................................................. 3</td>
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<td>CONST-116</td>
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<tr>
<td>Plane Surveying ................................................................. 3</td>
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<td>CONST-124</td>
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<tr>
<td>Construction Details and Specifications ......................................... 3</td>
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<td>CONST-244</td>
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<tr>
<td>Estimating – Residential ............................................................. 3</td>
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<td>CONST-245</td>
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<td>Estimating – Commercial ............................................................ 3</td>
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<td>Legal Aspects of the Construction Industry ....................................... 3</td>
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<td><strong>plus at least 3 units from:</strong></td>
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<tr>
<td>CONST-110</td>
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<td>CONST-136</td>
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<td>Building Code Interpretation: Non-Structural .................................... 3</td>
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<td>COOP-170</td>
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<td>Occupational Work Experience Education ........................................... 1-4</td>
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<td><strong>total minimum required units</strong></td>
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</tr>
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</table>
Certificate of achievement - Construction and building inspection

This program is designed to prepare students for a career in building or construction inspection, and it is also valuable for those already employed in the field who wish to upgrade their skills.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Certificate requirements can be completed by attending classes in the day, the evening, or both.

required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
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<tr>
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<tr>
<td>CONST-170</td>
<td>3</td>
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<tr>
<td>CONST-181</td>
<td>3</td>
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<tr>
<td>CONST-182</td>
<td>3</td>
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<tr>
<td>CONST-183</td>
<td>3</td>
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<tr>
<td>CONST-191</td>
<td>3</td>
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<tr>
<td>CONST-192</td>
<td>3</td>
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<tr>
<td>CONST-266</td>
<td>3</td>
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<tr>
<td>CONST-267</td>
<td>3</td>
</tr>
<tr>
<td>CONST-273</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 33

Certificate of achievement - Construction management

This two-year program is designed to prepare students for positions in middle management or as technicians in the construction industry, working with a contractor, architect, engineer, or supplier and including such duties as material takeoff, estimating costs, purchasing, and timekeeping.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Certificate requirements can be completed by attending classes in the day, the evening, or both.

required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ARCHI-244</td>
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<tr>
<td>BUS-101</td>
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<td>COMSC-100</td>
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<td>COMSC-100L</td>
<td>1</td>
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<tr>
<td>CONST-135</td>
<td>4</td>
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<tr>
<td>CONST-136</td>
<td>4</td>
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<tr>
<td>CONST-144</td>
<td>3</td>
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<tr>
<td>CONST-244</td>
<td>3</td>
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<tr>
<td>CONST-273</td>
<td>3</td>
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<tr>
<td>CONST-276</td>
<td>3</td>
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<tr>
<td>MATH-120</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-110</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 38
**CONST-124** Constructure Details and Specifications
3 units SC
- 54 hours lecture per term
Advanced study of construction detailing and specifications for building systems from foundations to roofs, including windows and doors, thermal and moisture protection, stairs and elevators and metal fabrications for wood frame, reinforced concrete, structural steel, and heavy timber buildings. Interpretation and sketching of details as well as an introduction to the general conditions for the construction contract. Techniques required to produce construction drawings and specifications conforming to current building codes and standards, including using manual drawing techniques and computer aided drafting. CSU

**CONST-135** Construction Processes (Residential)
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Note: This course will benefit anyone wishing to buy, build, maintain, or sell a house. Credit by examination option available.
Introduction to the basic concepts of the construction industry. A study of the processes of light wood-frame construction, covering code requirements in construction. Areas of focus include quantity analysis, work activity sequencing and scheduling. This course lays the foundation for further study of other construction courses. CSU

**CONST-136** Construction Processes (Commercial)
4 units SC
- 54 hours lecture/54 hours laboratory per term
A study of the processes of heavy construction including review of the working plans/drawings, construction sites, layout, substructures and superstructures made of concrete, steel, masonry and wood. CSU

**CONST-144** Materials of Construction
3 units SC
- 54 hours lecture per term
- Note: Same as ARCHI-144
A study of the performance characteristics of construction materials. Covers testing concepts and procedures. Includes basic properties of metals, concrete, timber, masonry, and roofing materials with emphasis on construction applications. CSU

**CONST-150** Topics in Construction
0.3-4 units SC
- Variable hours
A supplemental course in construction designed to provide a study of current concepts and problems in construction. Specific topics to be announced in the schedule of classes. CSU

**CONST-170** Fundamentals of Building Inspection
3 units SC
- 54 hours lecture per term
A study of basic construction inspection procedures, and the inspector’s legal responsibility. Covered topics include: inspecting structures, occupancy types, safety, and proper record keeping. CSU

**CONST-180** Building Codes Use and Occupancy Types
3 units SC
- 54 hours lecture per term
Acquaints the student with legal requirements associated with building classification. Development of checklists and knowledge of a nonstructural plan check review. CSU

**CONST-181** Building Code Interpretation: Non-Structural
3 units SC
- 54 hours lecture per term
Acquaints the student with legal requirements associated with building inspection. Development of checklists and knowledge of a nonstructural plan check review. CSU

**CONST-182** Building Code Interpretation: Structural
3 units SC
- 54 hours lecture per term
- Recommended: MATH-090 or equivalent
Acquaints the student with legal requirements associated with building inspection. Development of checklists and knowledge of a structural plan check review. CSU

**CONST-183** Title 24: Energy Conservation Codes
3 units SC
- 54 hours lecture per term
This course is an overview of Title 24 energy conservation and energy compliance codes. Focus of the course is on building plan inspection and construction field inspection. Course includes energy projects, streamlining energy compliance forms review, case studies and reviewing plan checking and building inspection procedures. CSU
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>SC</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-191</td>
<td>Plumbing Code Interpretation</td>
<td>3</td>
<td>SC</td>
<td>54 hours lecture per term. Note: Students may petition to repeat when code changes. Interpretation, understanding and application of codes and standards as they apply to construction of plumbing systems. CSU</td>
</tr>
<tr>
<td>CONST-192</td>
<td>Mechanical Code Interpretation</td>
<td>3</td>
<td>SC</td>
<td>54 hours lecture per term. Acquaints the students with legal requirements associated with building inspection. Interpretation, understanding and application of codes and standards as they apply to construction of mechanical systems. CSU</td>
</tr>
<tr>
<td>CONST-244</td>
<td>Estimating - Residential</td>
<td>3</td>
<td>SC</td>
<td>54 hours lecture per term. Recommended: CONST-114 or CONST-135 or equivalent A basic course in estimating cost of labor and materials for residential construction. CSU</td>
</tr>
<tr>
<td>CONST-245</td>
<td>Estimating - Commercial</td>
<td>3</td>
<td>SC</td>
<td>54 hours lecture per term. Recommended: CONST-114 and CONST-136 or equivalents A course in estimating quantities of materials and costs of materials, labor, and miscellaneous items for commercial buildings. CSU</td>
</tr>
<tr>
<td>CONST-266</td>
<td>Electrical Codes: Articles 90-398</td>
<td>3</td>
<td>SC</td>
<td>54 hours lecture per term. Note: Same as ELECT-266. Students may petition to repeat when code changes. Interpretation of the National Electrical Code for general requirements, wiring and protection, wiring methods and materials (articles 90-398). Safety installation practices will be applied.</td>
</tr>
<tr>
<td>CONST-267</td>
<td>Electrical Codes: Articles 400-830</td>
<td>3</td>
<td>SC</td>
<td>54 hours lecture per term. Note: Same as ELECT-267. Students may petition to repeat when code changes. Interpretation of the National Electrical Code for equipment for general use, special occupancies and special equipment (articles 400-830). Safety installation practices will be applied.</td>
</tr>
<tr>
<td>CONST-273</td>
<td>Construction Management</td>
<td>3</td>
<td>SC</td>
<td>54 hours lecture per term. Introduction to and application of administrative procedures, contracts, plans and specifications, schedules, diaries, inspections, report writing, and other forms of communication in the construction field. CSU</td>
</tr>
<tr>
<td>CONST-276</td>
<td>Legal Aspects of the Construction Industry</td>
<td>3</td>
<td>SC</td>
<td>54 hours lecture per term. A summary of the legal implications of the duties and responsibilities of a construction supervisor, superintendent, or contractor. Attention will be given to contracts and their interpretations. Emphasis on the practical aspects of legal theories, codes, and cases applied to the construction industry. CSU</td>
</tr>
<tr>
<td>CONST-298</td>
<td>Independent Study</td>
<td>.5-3</td>
<td>SC</td>
<td>Variable hours. Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered. An opportunity for advanced students to study special interests under the direction of the faculty. CSU</td>
</tr>
<tr>
<td>CONST-299</td>
<td>Student Instruction Assistant</td>
<td>.5-3</td>
<td>SC</td>
<td>Variable hours. Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor. Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU</td>
</tr>
</tbody>
</table>
Students may earn units for learning on-the-job through Cooperative Education. It is part of the total educational process that assists students in exploring and wisely choosing a career, preparing for full-time employment, and advancing in careers of their choice. The course is designed for students whose jobs relate to their college major or career goals and provides on-the-job training in business and industrial establishments under supervision of a college instructor and is facilitated by the use of learning objectives.

Beth Hauscarriague, dean
Counseling Division
Student Services Center, Room 203

Theses courses are for students who are working full or part-time and interested in earning units while gaining practical work experience, either for pay, as interns, or as volunteers. College credit is granted for the following:

**COOP-160**

Students who are employed but have not declared a major or whose jobs are unrelated to their major. COOP-170: Students who are employed and whose jobs are related to their major. COOP-180: Students who are participating in internship or volunteer opportunities in jobs that are related to their major.

**COOP-160  General Work Experience Education**

1-3 units SC

- May be repeated three times
- Variable hours
- Note: In order to enroll in a COOP course, students must be employed, register for the course, complete an online Employment Form, participate in an orientation, and receive approval from Career and Employment Services. Students may earn 1 unit for 5 hours work per week or 75 hours work per term. Employment Form can be accessed at [www.dvc.edu/coop](http://www.dvc.edu/coop). Incomplete grades are not awarded for COOP. Students may repeat to a maximum of 16 units; an appeal will be required after 3 repetitions.

**COOP-170  Occupational Work Experience Education**

1-4 units SC

- May be repeated three times
- Variable hours
- Note: In order to enroll in a COOP course, students must be employed, register for the course, complete an online Employment Form, participate in an orientation, and receive approval from Career and Employment Services. Students may earn 1 unit for 5 hours work per week or 75 hours work per term. Employment Form can be accessed at [www.dvc.edu/coop](http://www.dvc.edu/coop). Incomplete grades are not awarded for COOP. Students may repeat to a maximum of 16 units; an appeal will be required after 3 repetitions.

**COOP-180  Internship in Occupational Work Experience Education**

1-4 units SC

- May be repeated three times
- Variable hours
- Note: In order to enroll in the COOP-180 course, students must be interning or volunteering, register for the course, complete an online Employment Form, participate in an orientation, and receive approval from Career and Employment Services. Students may earn 1 unit for 5 hours work per week or 75 hours work per term (paid work) or 1 unit for 4 hours work per week or 60 hours work per term (unpaid work). Employment Form can be accessed at [www.dvc.edu/coop](http://www.dvc.edu/coop). Incomplete grades are not awarded for COOP. Students may repeat to a maximum of 16 units; an appeal will be required after 3 repetitions.

- Formerly COOP-170A

COOP-180 is a supervised internship in a skilled or professional level assignment in the student’s major field of study or area of career interest. Under the supervision of a college instructor, students will engage in on-the-job and other learning experiences that contribute to their employability skills and occupational or educational goals. CSU
COUNSELING – COUNS
Beth Hauscarriague, dean
Counseling Division
Student Services Center, Room 203

Possible career opportunities
Diablo Valley College’s counseling courses are designed to assist students in identifying educational and career goals, and enhancing their success by way of instruction in career and educational planning, and student success strategies.

COUNS-075  Topics in College Readiness
.3-4 units  P/NP
• Non degree applicable
• Variable hours
A supplemental course which provides a variety of topics for students preparing for college-level work. Specific topics will be announced in the schedule of classes.

COUNS-095  Orientation to College
.3-2 units  P/NP
• Variable hours
• Note: Completion of English and math assessment four days prior to this course will facilitate appropriate course selection. Please bring a print-out of your assessment results to the COUNS-095 Orientation to College course. We also need you to view the DVC online catalog and schedule of classes before coming to class.
• Formerly COUNS-105
An introduction to college which is designed to provide students with a concrete plan for succeeding in college. Topics include: identification of educational and career goals, strategic use of student services, academic assessment (effective course selecting and scheduling), geographical orientation, counseling and advising.

COUNS-096  Orientation to College for Student-Athletes
.3-2 units  P/NP
• Variable hours
• Note: Completion of English and math assessment four days prior to this course will facilitate appropriate course selection
• Formerly COUNS-106
An introduction to college for student-athletes, designed to provide students with a concrete plan for enrolling and succeeding in college. Topics include: overview of the higher education system in California, identification of educational and career goals, strategic use of student services, academic assessment, effective course selection and scheduling, geographical orientation, counseling and advising, NCAA, COA (Commission on Athletics) and DVC regulations as well as campus services for student-athletes will be emphasized.

COUNS-120  Student Success
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
An intensive course designed to assist students to identify and develop critical thinking and problem-solving skills that will facilitate their adjustment to the college environment and the productive pursuit of their educational objectives. The goal is to develop effective behavior patterns through self-evaluation related to many relevant areas such as motivation and discipline, memory development, time management, resource utilization, effective student behavior, and handling social and personal issues that face many college students. CSU, UC

COUNS-130  Transfer Transitions
1.5 units  SC
• 27 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
Through this course students research, evaluate and develop a transfer plan that is well organized and specific to the individual’s life circumstance and educational goals. Students explore the world of transfer from academic, financial, and personal development perspectives. A key component of this course is learning research skills and strategies using a variety of techniques to find, retrieve and evaluate transfer planning information. CSU

COUNS-150  Topics in Counseling
.3-4 units  SC
• Variable hours
A supplemental course designed to provide personal and social development skills related to academic issues. Specific topics will be announced in the schedule of classes. CSU

COUNS-155  Topics in Group Counseling
.3-4 units  SC
• Variable hours
An interpersonal experience designed to develop self-awareness and to increase understanding of and competence in interpersonal relationships. CSU
CULINARY ARTS – CULN

Rachel Westlake, dean
Business Division
Math Building, Room 267

Possible career opportunities
The culinary arts program provides professional training for employment as a chef, culinary supervisor, cookbook author, recipe taster, cook, kitchen manager, food server, caterer, food researcher, banquet chef, dining room manager, food stylist, menu planner, community nutrition specialist, and school foodservice specialist.

The baking program is designed to prepare students to work as pastry chefs in local restaurants, hotels, resorts, bakeries, and catering establishments. Career options include bakery production finisher, pastry decorator, caterer, baker assistant, bakery entrepreneur, and bakery chef at grocery food chains, cafes, restaurants, bakeries, hospitals, resorts, child care facilities, cafeterias, food preparation centers, and catering facilities.

The restaurant management program prepares students to enter the restaurant field as a manager-trainee in a food service establishment. Career options include: restaurant owner/operator, hotel banquet manager, dining room manager, purchasing specialist, catering manager, and food editor. Some career options may require more than two years of college study.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree - Hospitality studies
The associate in science degree in hospitality studies prepares students for entry into mid-level employment in one of three specialty areas of the hospitality and culinary arts industry: baking and pastry, culinary arts, restaurant management. This in-depth, hands-on program of study prepares students for a professional hospitality and culinary career in a broad scope of industry opportunities in the following areas of specialization:

Baking and pastry:
For over 30 years, DVC has been successfully preparing students for professional careers in small and large bakeries, specialty pastry shops, catering and dessert preparation in restaurants. Diablo Valley College’s baking and pastry program offers an in-depth, hands-on learning curriculum where students gain both knowledge and experience through the hotel and restaurant management program’s technical facilities. In addition to training at the DVC facilities, students gain experience working outside the college through a required internship program. DVC’s associate degree in hospitality studies with a specialization in baking and pastry is designed primarily for those students who desire to complete a two-year degree. General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer. Students who are interested in pursuing a management-focused program in hospitality should see a counselor and consider the General Education Requirements Options 2 or 3.

Culinary arts:
For over 30 years, DVC has been successfully preparing students for professional culinary careers. Accredited by the American Culinary Federation since 1990, Diablo Valley College’s culinary arts program offers an in-depth, hands-on learning curriculum where students gain both knowledge and experience in the hotel and restaurant management program’s technical facilities. In addition to training at the DVC facilities, students gain experience working outside the college through a required internship program. DVC’s associate degree in hospitality studies with a specialization in culinary arts is designed primarily for those students who desire to complete a two-year degree. General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer. Students who are interested in pursuing a management-focused program in hospitality should see a counselor and consider the General Education Requirements Options 2 or 3.

Restaurant management:
For over 30 years, DVC has been successfully preparing students for professional careers in restaurant management. Accredited by the American Culinary Federation since 1990, Diablo Valley College’s restaurant management program offers an in-depth, hands-on learning curriculum where students gain both knowledge and experience through the hotel and restaurant management program’s technical facilities. Restaurant management students work and learn in a fully equipped food production kitchen, a demonstration laboratory, a retail pastry shop and a 130-seat restaurant.
that is open to the public. In addition to training at the DVC facilities, students gain experience working outside the college through a required internship program. DVC’s associate degree in hospitality studies with a specialization in restaurant management is geared primarily towards DVC’s culinary students desiring some additional management coursework. Students who are interested in pursuing a management-focused program in hospitality should expect to complete a four-year degree program at a university. These students should see a counselor and consider the General Education Requirements Options 2 or 3.

Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file in the Culinary Department Office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. To earn an associate in science degree, students must complete each course used to meet a certificate requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the degree.

Students are limited to one associate in science degree regardless of the number of specializations completed. Multiple certificates may be awarded.

**Major Requirements - Culinary Arts**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CULN-105</td>
<td>Introduction to the Kitchen</td>
<td>0.5</td>
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<tr>
<td>CULN-110</td>
<td>Orientation to Hospitality</td>
<td>3</td>
</tr>
<tr>
<td>CULN-115</td>
<td>Culinary Mathematics</td>
<td>1.5</td>
</tr>
<tr>
<td>CULN-120</td>
<td>Fundamentals of Cuisine</td>
<td>5</td>
</tr>
<tr>
<td>CULN-153</td>
<td>Safety and Sanitation</td>
<td>2</td>
</tr>
<tr>
<td>CULN-185</td>
<td>Nutritional Guidelines in Food Preparation</td>
<td>2</td>
</tr>
<tr>
<td>CULN-192</td>
<td>Purchasing Operations and Systems Laboratory</td>
<td>2.5</td>
</tr>
<tr>
<td>CULN-195</td>
<td>Supervisory Management in Food Service</td>
<td>3</td>
</tr>
<tr>
<td>CULN-224</td>
<td>Catering Business and Operations</td>
<td>2</td>
</tr>
</tbody>
</table>

**Plus at least 2 units from:**

- COOP-170 Occupational Work Experience Education | 1-4
- COOP-180 Internship in Occupational Work Experience Education | 1-4
- CULN-298 Independent Study | 0.5-3
- CULN-299 Student Instructional Assistant | 0.5-3

**Plus at least 2.5 units from:**

- CULN-225 Laboratory Topics in Catering and Special Events | 0.3-4

Choose one of the following three specialization areas:

### Baking and Pastry

**Required Courses - Baking and Pastry**

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<tr>
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<tbody>
<tr>
<td>CULN-180</td>
<td>Fundamentals of Baking</td>
<td>3.5</td>
</tr>
<tr>
<td>CULN-280</td>
<td>Advanced Pastry and Baking</td>
<td>5</td>
</tr>
</tbody>
</table>

**Plus at least 2 units from:**

- CULN-150* Topics in Culinary Arts | 0.3-4
- CULN-213 Seasonal Spring Desserts | 1
- CULN-214 Seasonal Fall Desserts | 1
- CULN-215 Decorative Confectionary Showpieces | 1

### Certificate of Achievement - Baking and Pastry

This in-depth training program prepares students for many entry-level positions in small and large bakeries, specialty pastry shops, dessert catering, and dessert preparation in restaurants. Our graduates enter the baking and pastry field, and many have started their own businesses.

Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file in the Culinary Department Office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may only be completed by attending a combination of day and evening classes.

**Required Courses - Certificate of Achievement**

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</table>
plus at least 2 units from:
CULN-150* Topics in Culinary Arts ........................................... 0.3-4
CULN-213 Seasonal Spring Desserts ........................................... 1
CULN-214 Seasonal Fall Desserts .............................................. 1
CULN-215 Decorative Confectionary Showpieces ......................... 1

plus at least 2.5 units from:
CULN-225 Laboratory Topics in Catering and Special Events ......... 0.3-4

plus at least 2 units from:
COOP-170 Occupational Work Experience Education...................... 1-4
COOP-180 Internship in Occupational Work .................................. 1-4
CULN-298 Independent Study .................................................... 0.5-3
CULN-299 Student Instructional Assistant .................................... 0.5-3

total minimum required units 46.5

*Note: Topics for CULN-150 vary. Contact the Culinary Department to verify if a CULN-150 course meets the specific requirement for the degree.

Certificate of achievement - Culinary arts

This in-depth, hands-on training program prepares students for a professional culinary career. Our certificate program is accredited by the American Culinary Federation Educational Institute, a national organization of professional chefs. Our graduates enter the culinary field, and many have progressed to the position of executive chef.

Culinary and food service students must have an up to date record of satisfactory tuberculin (TB) screening on file in the Culinary Department Office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may only be completed by attending a combination of day and evening classes.

required courses
CULN-105 Introduction to the Kitchen .................................. 0.5
CULN-110 Orientation to Hospitality ........................................ 3
CULN-115 Culinary Mathematics ............................................ 1.5
CULN-120 Fundamentals of Cuisine ....................................... 5
CULN-127 Garde Manger ....................................................... 2
CULN-153 Safety and Sanitation ............................................. 2
CULN-154 Menu Development and Planning ......................... 2
CULN-160 Fundamentals of Beverage, Wine and Spirits ............ 3
CULN-167 Restaurant Operations in the Dining Room ............. 3
CULN-175 Meat, Poultry and Fish Fabrication ......................... 2
CULN-180 Fundamentals of Baking ......................................... 3.5
CULN-185 Nutritional Guidelines in Food Preparation .............. 2
CULN-192 Purchasing Operations and Systems Laboratory ....... 2.5
CULN-195 Supervisory Management in Food Service ............... 3
CULN-220 Advanced Cuisine .................................................. 5
CULN-224 Catering Business and Operations ......................... 2

plus at least 2.5 units from:
CULN-225 Laboratory Topics in Catering and Special Events ... 0.3-4

Certificate of achievement - Restaurant management

Our in-depth, hands-on training program prepares students to begin their careers in restaurant management. Our graduates enter the hospitality industry, and many progress to management positions.

Culinary and food service students must have a current record of satisfactory tuberculin (TB) screening on file in the Culinary Department Office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may only be completed by attending a combination of day and evening classes.

required courses
CULN-105 Introduction to the Kitchen .................................. 0.5
CULN-110 Orientation to Hospitality ........................................ 3
CULN-115 Culinary Mathematics ............................................ 1.5
CULN-120 Fundamentals of Cuisine ....................................... 5
CULN-153 Safety and Sanitation ............................................. 2
CULN-154 Menu Development and Planning ......................... 2
CULN-160 Fundamentals of Beverage, Wine and Spirits ............ 3
CULN-167 Restaurant Operations in the Dining Room ............. 3
CULN-180 Fundamentals of Baking ......................................... 3.5
CULN-185 Nutritional Guidelines in Food Preparation .............. 2
CULN-192 Purchasing Operations and Systems Laboratory ....... 2.5
CULN-195 Supervisory Management in Food Service ............... 3
CULN-201 Principles of Food, Beverage, and Cost Controls ....... 3
CULN-216 Food and Wine Pairing ......................................... 1.5
CULN-220 Advanced Cuisine .................................................. 5
CULN-224 Catering Business and Operations ......................... 2

plus at least 2.5 units from:
CULN-225 Laboratory Topics in Catering and Special Events ... 0.3-4

CULINARY ARTS
plus at least 2 units from:

- COOP-170 Occupational Work Experience Education...1-4
- COOP-180 Internship in Occupational Work Experience Education..................................1-4
- CULN-298 Independent Study..........................0.5-3
- CULN-299 Student Instructional Assistant...............0.5-3

**Total minimum required units** 47

*Note: DVC’s restaurant management certificate is geared primarily toward DVC’s culinary students desiring some additional management coursework. Students who are interested in pursuing a management-focused program in hospitality should expect to complete a four-year degree program at a university.*

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**CULN-105 Introduction to the Kitchen**

.5 unit SC
- 27 hours laboratory per term
- **Note:** Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course prepares students to begin the culinary arts program. It is for students who do not have familiarity with kitchen knife handling and working in the kitchen. This course provides an introduction to basic skills and safety practices. CSU

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**CULN-110 Orientation to Hospitality**

3 units SC
- 54 hours lecture per term
- **Note:** Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course provides an introduction to career opportunities in food service, explores trade publications and professional organizations, and presents the basic organization and function of departments within hospitality and food service establishments. CSU

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**CULN-115 Culinary Mathematics**

1.5 units LR
- 27 hours lecture per term
- **Note:** Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course focuses on the application of math competencies to specific business situations in the food service industry. CSU

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**CULN-120 Fundamentals of Cuisine**

5 units SC
- 270 hours laboratory per term
- **Prerequisite:** CULN-105 or equivalent
- **Co-requisite:** CULN-153 or equivalent
- **Recommended:** Eligibility for ENGL-122 or equivalent
- **Note:** Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course builds on basic student skills in knife, tool and culinary equipment handling, introduces basics of food preparation, and provides a working knowledge of laws and regulations relating to safety and sanitation in the kitchen. The emphasis is on quantity food service. CSU

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**CULN-127 Garde Manger**

2 units SC
- 18 hours lecture/54 hours laboratory per term
- **Prerequisite:** CULN-120 or equivalent
- **Note:** Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

A study of the artistic side of cold food preparation from basic garnishes to advanced forcemeat preparations such as galantines, pates and mousses. Emphasis on decorated plates, buffets, and food show competitions. CSU

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**CULN-150 Topics in Culinary Arts**

.3-4 units SC
- Variable hours
- **Note:** Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

A supplemental course in culinary arts to provide a study of current concepts and problems in culinary arts and related subdivisions. Specific topics will be announced in the schedule of classes. CSU
CULN-153  Safety and Sanitation
2 units SC
- 36 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

A course to develop a working knowledge of the basic principles of safety and sanitation and their application in food service operations. Effective hygiene habits and food handling practices are reinforced, for protection of consumers. This course must be taken before or concurrently with the first culinary laboratory course. CSU

CULN-154  Menu Development and Planning
2 units SC
- 36 hours lecture per term
- Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course provides learners with an opportunity to plan and develop basic restaurant menus, displaying a diversity of techniques and flavors within a variety of food service establishments. Healthy menus, culturally diverse menus, seasonal and regional menus are addressed. CSU

CULN-160  Fundamentals of Beverage, Wine and Spirits
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course provides an extensive examination of beverage service operations and control, basic production and types of wines and spirits, merchandising, and regulations concerning service of alcoholic and non-alcoholic beverages, coffee and tea. CSU

CULN-167  Restaurant Operations in the Dining Room
3 units SC
- 162 hours laboratory per term
- Co-requisite: CULN-153 (may be taken previously) or equivalent
- Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at first class meeting.

Principles and techniques of dining room service and management, including various table settings and methods of service. This course provides practical experience in the fundamentals of dining room service, including rules and methods of service, handling various forms of food service, and conducting basic dining room management and planning. CSU

CULN-175  Meat, Poultry and Fish Fabrication
2 units SC
- 36 hours lecture per term
- Note: Culinary and food service students must have a current record of satisfactory TB screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at first class meeting.

This course provides students with a comprehensive meat identification process, including cuts, buying and ordering procedures, nutrition data, food safety and storage, and USDA grading standards. CSU

CULN-180  Fundamentals of Baking
3.5 units SC
- 18 hours lecture/135 hours laboratory per term
- Prerequisite: CULN-105 or equivalent (may be taken concurrently)
- Co-requisite: CULN-153 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at first class meeting.

An applied and theoretical study of basic principles of commercial baking as practiced in hotels, restaurants and retail bakeries. Students apply fundamentals of baking science to the preparation of a variety of products, learning to use and care for equipment normally found in the bakeshop or baking area. CSU
CULN-185  Nutritional Guidelines in Food Preparation
2 units  SC
• 36 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

Introduction to food composition, dietary guidelines, recipe modification, food cooking and storage techniques for nutrient retention, and contemporary nutritional issues. CSU

CULN-192  Purchasing Operations and Systems Laboratory
2.5 units  SC
• 144 hours laboratory per term
• Co-requisite: CULN-153 (may be taken previously) or equivalent
• Recommended: CULN-115 or MATH-090 and eligibility for ENGL-122 or equivalents
• Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

An application of principles in inventory control management, storage, and receiving. Fundamentals of purchasing based on analysis of quality, yield, cost of food and merchandise used in food service, control of purchases, receiving, storing, and issuing procedures using current computer applications. CSU

CULN-195  Supervisory Management in Food Service
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course focuses on application of supervisory management principles to specific business situations in food services. CSU

CULN-201  Principles of Food, Beverage, and Cost Controls
3 units  SC
• 54 hours lecture per term
• Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course prepares students to apply cost control measures in restaurant and beverage management. Key principles and concepts are presented, and cost controls are demonstrated for each phase of beverage and food service operations. CSU

CULN-213  Seasonal Spring Desserts
1 unit  SC
• 9 hours lecture/9 hours laboratory per term
• Recommended: Eligibility for ENGL-116 and ENGL-118 or equivalents
• Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course is a study of basic pastries, basic pastry components and desserts, including practical applications, specific to the spring season, as related to the hospitality and food service industry, restaurants, wholesale and retail bakeries/pastry shops. CSU

CULN-214  Seasonal Fall Desserts
1 unit  SC
• 9 hours lecture/9 hours laboratory per term
• Recommended: Eligibility for ENGL-116 and ENGL-118 or equivalents
• Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course is a study of basic pastries, basic pastry components and desserts, including practical applications, specific to the fall season, as related to the hospitality and food service industry, restaurants, wholesale and retail bakeries/pastry shops. CSU
CULINARY ARTS

CULN-215   Decorative Confectionary Showpieces
          1 unit  SC
          • 18 hours lecture per term
          • Recommended: CULN-180 or equivalent
          • Note: Culinary and food service students must have a
            current record of satisfactory tuberculosis (TB) screen-
            ing on file with the culinary offices by the beginning
            of classes. Students are required to supply their own
            equipment and uniforms depending on the class. See
            instructor at the first class meeting.

A course in the methodology of sugar work and advanced
confectionary arts. CSU

CULN-216   Food and Wine Pairing
          1.5 units  SC
          • 27 hours lecture per term
          • Note: Culinary and food service students must have a
            current record of satisfactory tuberculosis (TB) screen-
            ing on file with the culinary offices by the beginning
            of classes. Students are required to supply their own
            equipment and uniforms depending on the class. See
            instructor at the first class meeting.

This course prepares students planning careers in restaur-
antly management to present wines that complement menu
offerings. CSU

CULN-220   Advanced Cuisine
          5 units  SC
          • 270 hours laboratory per term
          • Prerequisite: CULN-120 or equivalent
          • Recommended: Eligibility for ENGL-122 or equivalent
          • Note: Culinary and food service students must have a
            current record of satisfactory tuberculosis (TB) screen-
            ing on file with the culinary offices by the beginning
            of classes. Students are required to supply their own
            equipment and uniforms depending on the class. See
            instructor at the first class meeting.

This course builds upon student skills honed in the fun-
damentals of cuisine course, emphasizing preparation of
individual plates. Seasonal cooking and market variations,
healthy cooking, curing meats, preparing flavored oils and
dressings, and composition of effective menu items are in-
tegrated into the food preparation activities. CSU

CULN-224   Catering Business and Operations
          2 units  SC
          • 36 hours lecture per term
          • Note: Culinary and food service students must have a
            current record of satisfactory tuberculosis (TB) screen-
            ing on file with the culinary offices by the beginning
            of classes. Students are required to supply their own
            equipment and uniforms depending on the class. See
            instructor at the first class meeting.

An introduction to operating a catering business including
effective client relations, event planning, pricing and cost
controls, legal issues, equipment requirements and menu
planning for a variety of events such as banquets, ethnic
and a la carte affairs. CSU

CULN-225   Laboratory Topics in Catering and
Special Events
          .3-4 units  SC
          • Variable hours
          • Co-requisite: CULN-153 or equivalent
          • Recommended: CULN-120 and eligibility for ENGL-122
            or equivalents
          • Note: Culinary and food service students must have a
            current record of satisfactory tuberculosis (TB) screen-
            ing on file with the culinary offices by the beginning
            of classes. Students are required to supply their own
            equipment and uniforms depending on the class. See
            instructor at the first class meeting.

A catering applications course integrating catering funda-
mentals with specific events and themes. Events will vary
by course section. Students will apply their food preparation
and service skills to different needs of catering clients. Refer
to the schedule of classes for the specific section offering.
CSU

CULN-226   California Cuisine
          2 units  LR
          • 27 hours lecture/27 hours laboratory per term
          • Recommended: Eligibility for ENGL-122 or equivalent
          • Note: Culinary and food service students must have a
            current record of satisfactory tuberculosis (TB) screen-
            ing on file with the culinary offices by the beginning
            of classes. Students are required to supply their own
            equipment and uniforms depending on the class. See
            instructor at the first class meeting.

California cuisine explores the current California trend
of local, regional, and seasonal ingredients used today.
Students will learn culinary methods and practically apply
them to produce their own menus and demonstrate in class
their finished product. CSU

CULN-228   International Cuisine
          2 units  SC
          • 27 hours lecture/27 hours laboratory per term
          • Recommended: Eligibility for ENGL-122 or equivalent
          • Note: Culinary and food service students must have a
            current record of satisfactory tuberculosis (TB) screen-
            ing on file with the culinary offices by the beginning
            of classes. Students are required to supply their own
            equipment and uniforms depending on the class. See
            instructor at the first class meeting.

Introduction to and presentation of cuisines from around
the world in cultural, social and historical frameworks.
Emphasis will be on cultural contrast that reflects the ethnic
culinology of at least three non-European countries (e.g.
Egypt, China, and India). This course will develop an under-
standing of ethnic cuisine in today’s multi-cultural society
and its significance and influence on (North) American cul-
ture. CSU
CULN-280  Advanced Pastry and Baking
5 units SC
- 27 hours lecture/189 hours laboratory per term
- Prerequisite: CULN-180 or equivalent
- Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

Advanced theory and technique in pastry and baking, including fruit desserts, spoon desserts, tarts, pies, plated desserts, frozen desserts, modernist desserts, decorated cakes, and light and low-calorie desserts. CSU

CULN-298  Independent Study
.5-3 units SC
- Variable hours
- Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the Culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting. Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond the courses offered. CSU

An opportunity for advanced students to study special interests under the direction of the faculty.

CULN-299  Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor. Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

DANCE – DANCE

Christine Worsley, dean
Kinesiology, Athletics and Dance Division
Physical Education Office Building, Room 104

Possible career opportunities
Students who receive a degree in dance can not only pursue a career as a professional dancer in commercial dances onstage and in film, but they may also seek careers as dance therapists, dance instructors, or choreographers. Degree recipients can apply their knowledge of dance in areas such as arts administration, studio management, arts grant writing, and dance notators for dance companies.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Dance

Associate in arts degree - Dance

The associate in arts degree in dance is a comprehensive two-year course of study that exposes students to all aspects of the dance discipline. Students will be provided with a solid foundation in dance movement, performance and theory, as well as an opportunity to explore related types of performing arts such as drama and music. Students will improve the technical aspects of their dance technique, gain knowledge in compositional methodology, and perform in dance concerts.

Students may apply this knowledge to work in areas such commercial dance, choreography, dance therapy and dance instruction. Students wishing to pursue a career in the field of dance should consider this two year program as it provides preparation for immediate entry into some of the areas listed above and provides a basic foundation for transfer to baccalaureate degrees necessary in other dance disciplines.

While most of the dance major requirements are transferable and many meet prerequisites required of dance majors, this degree is not designed as a transfer curriculum. Students may use any of the three general education patterns for this degree (DVC, IGETC, CSU-G.E.). Students who wish to transfer to four-year institutions must consult with program faculty and college counselors to insure that the requirements for transfer to the four-year institutions of their choice are met. Students who intend to transfer are advised to
select either General Education Option 2 (IGETC) or General Education 3 (CSU G.E.) General Education Option 1 (DVC G.E.) is appropriate for students who do not intend to transfer.

To earn an associate in arts degree with a major in dance, students must complete each course used to meet a major requirement with a “C” grade or higher and complete all general education requirements as listed in the catalog. Certain courses may satisfy both a major and general education requirements; however the units are only counted once.

**complete at least 2 units from 2 different disciplines:**

**DANCE-212** Ballet I .......................................................... 1
**DANCE-222** Jazz Dance I .................................................. 1
**DANCE-232** Modern Dance I ............................................. 1

**plus at least 2 units from 2 different disciplines:**

**DANCE-213** Ballet II .......................................................... 1
**DANCE-223** Jazz Dance II .................................................. 1
**DANCE-233** Modern Dance II ............................................. 1

**plus at least 2 units from 2 different disciplines:**

**DANCE-216** Pointe Technique ............................................ 1
**KNDAN-105A** Beginning Pilates Mat Work ......................... 0.5-2
**KNDAN-155** World Dance Topics .................................... 0.3-4
**KNDAN-160A** Beginning Tap Dance .................................. 0.5-2
**KNDAN-160B** Intermediate Tap Dance ............................... 0.5-2
**KNDAN-162** Broadway Dance .......................................... 0.5-2
**KNDAN-164A** Beginning Ballroom/Social Dance .................. 0.5-2
**KNDAN-166** Swing Dance ................................................. 0.5-2
**KNDAN-168A** Beginning Salsa and Latin Dance ................... 0.5-2

*at least one unit required*

**plus at least 2 additional units from any of the core technique courses listed above**

**total core technique requirements** 8

**core theory and performance requirements:**

**DANCE-201** Western Dance History: 20th Century to Present ................................................. 3
**DANCE-205** Music Theory for Dancers ................................ 2
**DANCE-240** Dance Choreography ....................................... 2
**DANCE-242** Repertory Dance Production ............................ 2
**DANCE-246** Dance Production ............................................. 2

**plus at least 2 units from the following:**

**DRAMA-111** Fundamentals of Stage Production – Lighting .............................................................. 3
**DRAMA-112** Stage Makeup ............................................... 2
**DRAMA-113** Introduction to Costume Design ..................... 2.5
**DRAMA-122** Basic Principles of Acting ............................... 3
**DRAMA-200** Introduction to Technical Theater .................. 3

**art/music/humanities requirements:**

**complete at least 3 units from:**

**DRAMA-140** History of the Theater: Pre-Greek to 17th Century ......................................................... 3
**DRAMA-141** History of the Theater: 17th Century to Present ................................................................. 3
**DRAMA-180** Literature of World Drama: Pre-Greek to 17th Century .......................................................... 3
**DRAMA-181** Literature of World Drama: 17th Century to Present ............................................................ 3
**HUMAN-105** Introduction to Humanities: Arts and Ideas .... 3
**MUSIC-114** World Music ..................................................... 3

**total minimum required units** 24

**recommended electives:**

**DRAMA-139** Introduction to the Theater ........................... 3
**DRAMA-200** Introduction to Technical Theater ................. 3
**KINES-240** Principles of Optimizing Human Performance ........ 3
**KNACT-114** Stretch and Yoga for Sports ......................... 0.5-2
**KNACT-110A** Beginning Hatha Yoga ................................. 0.5-2
**NUTRI-120** Sports Nutrition: Fueling the Athlete .......... 3
**PHYS-110** Elementary Physics ........................................... 3

**DANCE-201 Western Culture Dance History:**

**20th Century to Present**

3 units  SC

- 54 hours lecture per term
- **Recommended: Eligibility for ENGL-122 or equivalent**

This is a course that investigates the role of dance in Western culture from the beginning of the 20th century through the present day. Historic styles and movements of dance including the Diaghilev period of ballet and the development of modern dance are discussed, including their influence on present-day ballet, modern, and contemporary dance practice. CSU, UC

**DANCE-205 Music Theory for Dancers**

2 units  SC

- 18 hours lecture/54 hours laboratory per term
- **Note: Previous experience in any dance technique is suggested**

This is an introductory course in music and its relationship to dance and dancers. It explores the use of rhythm, meter, measure and other compositional elements of music. The objective is for the dancer to apply the compositional elements of music to the choreography and dance performance. CSU, UC
DANCE-212 Ballet I  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: KNDAN-110 or equivalent  
- Formerly DANCE-133  
This is an intermediate course in ballet dance. It will focus on intermediate ballet barre, center adagio, allegro work, and across the floor combinations. Students will also learn the history of classical ballet works and their influence on the ballet dancer and current ballet styles. CSU, UC

DANCE-213 Ballet II  
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-212 or equivalent  
- Formerly DANCE-134  
This is an advanced course in ballet dance. It will focus on advanced ballet barre, center adagio, allegro work, and across-the-floor combinations. Students will also learn basic choreographic principles as they relate to ballet. CSU, UC

DANCE-214 Ballet III  
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-213 or equivalent  
- Formerly DANCE-165  
This is an advanced/pre-professional course in ballet dance. It will focus on advanced ballet barre, center adagio, allegro work, and across-the-floor combinations at the pre-professional level. Students will learn classical ballet variations and basic pas de deux techniques as they relate to classical ballet. CSU, UC

DANCE-216 Pointe Technique  
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-212 or KNDAN-110 or equivalent  
- Formerly DANCE-135  
This is a course in classical ballet training through the application of pointe technique. The class will focus on line, musicality, sequences, strength and grace as it relates to pointe technique. The historical origins of the pointe shoe, pointe work, conceptual principles of pointe ballet as an art form, and the anatomical structure of the lower extremities are also presented. CSU, UC

DANCE-222 Jazz Dance I  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: KNDAN-120 or equivalent  
- Formerly DANCE-137  
This is an intermediate course in jazz dance. It will focus on Broadway, Lyrical, Hip-Hop and contemporary styles. The students will also learn the history of jazz dance on stage, movie, and videos and its influence on the jazz dancer and current jazz dance styles. CSU, UC

DANCE-223 Jazz Dance II  
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-222 or equivalent  
- Formerly DANCE-138  
This is an advanced course in jazz dance. It will focus on advanced jazz dance from Broadway, Lyrical, Hip-Hop and contemporary styles. Students will also learn basic choreographic principles as they relate to jazz dance. CSU, UC

DANCE-224 Jazz Dance III  
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-223 or equivalent  
- Formerly DANCE-139  
This is an advanced/pre-professional course in jazz dance. It will focus on advanced jazz dance from Broadway, Lyrical, Hip-Hop and contemporary styles utilizing pre-professional dance performance skills. Students will also use choreographic principles as they relate to jazz dance to enhance their performance potential. CSU, UC

DANCE-232 Modern Dance I  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: KNDAN-130 or equivalent  
- Formerly DANCE-144  
This is an intermediate course in modern dance. It will focus on intermediate axial and locomotor movements, styles from early modern, post-modern, and contemporary modern innovators. The students will also learn the history of modern dance and its influence on the modern dancer and current modern dance styles. CSU, UC

DANCE-233 Modern Dance II  
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-232 or equivalent  
- Formerly DANCE-145  
This is an advanced course in modern dance. It will focus on advanced axial and locomotor movements, styles from early modern, post-modern, and contemporary modern innovators. Students will also learn choreographic principles as they relate to modern dance. CSU, UC

DANCE-234 Modern Dance III  
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-233 or equivalent  
- Formerly DANCE-146  
This is an advanced/pre-professional course in modern dance. It will focus on advanced performance level axial and locomotor movements, styles from early modern, post-modern, and contemporary modern innovators with an emphasis on pre-professional performance quality. Students will also use choreographic principles as they relate to modern dance to enhance their performance potential. CSU, UC
DANCE-240 Dance Choreography
2 units SC
- 18 hours lecture/54 hours laboratory per term
- Formerly PEDAN-140
This is a course that develops choreographic skills through dance movement phrasing, spatial design and relationships, rhythm, theme and development, concert, solo and group work. Students will learn to critically evaluate choreographic dance components through analysis and presentation in the classroom. CSU, UC

DANCE-242 Repertory Dance Production
1.5 units SC
- 72 hours laboratory by arrangement per term
- Recommended: Previous dance experience or equivalent
- Formerly DACCE-244
This is a dance performance class with an emphasis on experiential learning from participation in the planning, staging, rehearsing and performing of a faculty-choreographed dance production. CSU, UC

DANCE-243 Repertory Dance Production - Tech Week
.5 unit SC
- 36 hours laboratory by arrangement per term
- Co-requisite: DANCE-242 or equivalent
This course prepares students for a dance performance with an emphasis on the mastery and presentation of faculty-choreographed compositions presented to a live audience in a professional theater space. CSU

DANCE-246 Dance Production
1.5 units SC
- 72 hours laboratory per term
- Formerly DANCE-245
This is a course that involves the creation and staging of original student dance compositions. It includes the study of theory and technique with emphasis on dance as a performing art and participation in the technical and business aspects of a student production. A final dance concert performed by the students will culminate the term’s work. CSU, UC

DANCE-247 Dance Production - Tech Week
.5 unit SC
- 36 hours laboratory by arrangement per term
- Co-requisite: DANCE-246 or equivalent
This course prepares students for a dance performance with an emphasis on the mastery and presentation of original student dance compositions presented to a live audience in a professional theater space. CSU

DANCE-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

DENTAL ASSISTING – DENTL
Tish Young, dean
Biological and Health Sciences Division
Physical Sciences Building, Room 263

Possible career opportunities
The dental assisting program provides an excellent path for those interested in a variety of professions in the dental field. The Diablo Valley College dental assisting program prepares students to work in a dental office as an essential member of the dental team. Employment opportunities for the graduates include, but are not limited to: chairside assistant or front office administrator for dental offices or clinics, x-ray technician for dental radiation laboratories, agent for dental insurance companies, laboratory technician for dental laboratories, product representative for dental product manufacturers or marketing agent for dental supply companies. The DVC dental assisting program is approved by the Dental Board of California and accredited by the American Dental Association (ADA). This qualifies the student upon graduation to take state as well as national board examinations to become a licensed Registered Dental Assistant in California (RDA) and a Certified Dental Assistant (CDA). Other options for continuing education and licensing allow Registered Dental Assistant to specialize and become a Registered Dental Assistant in Extended Functions (RDAEF). Other career options include study to become a Registered Dental Hygienist (RDH), or a dentist (DDS or DMD).

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.
**Dental Assisting Program**

Dental assisting classes are taught during the day; however, the general education courses required for the certificate or degree may be taken in the evening or at an alternate location.

The Diablo Valley College dental assisting program is approved by the Dental Board of California and accredited by the Commission on Dental Accreditation of the American Dental Association (ADA), and the United States Department of Education. Students completing the degree or certificate program in dental assisting are eligible to take the California State written and practical examination and obtain their Registered Dental Assisting (RDA) license and take their national Certified Dental Assistant examination to become a Certified Dental Assistant (CDA).

The 11 month program is scheduled to begin each fall term in August and the dental assisting courses will be completed by the middle of June. The two terms and two week summer session include classroom instruction as well as clinical experience in the DVC dental clinic, UOP Dental School and various dental offices.

In addition to the dental assisting classes the program requires nine units of general education that must be completed prior to applying to take the state license and national examinations.

To be eligible for enrollment in the dental assisting program, students must complete the prerequisite course DENTL-120, which is offered in the first two weeks of June. Students in the program must complete a health care provider cardio-pulmonary resuscitation with AED course and have a valid copy of their certification card on file in the dental assisting department by the first day of class in August.

Associate degree requirements generally can be completed in two years of full-time study. Some courses may meet lower division requirements for a baccalaureate degree at selected campuses of CSU or the bachelor of arts degree in health administration at private universities. Interested students should consult with the dental instructors or with the college counselors for more information.

To earn an associate in science degree with a major in dental assisting, students must complete each course used to meet a major requirement with a “C” grade or higher and complete all general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**Certificate of Achievement - Dental Assisting**

**Program Prerequisite:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENTL-120</td>
<td>0.3</td>
</tr>
</tbody>
</table>

**Note:** It is strongly recommended to complete one of the required general education or English courses prior to entering the registered dental assisting program in the fall term. Refer to general education courses below.

**Major Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM-121* Persuasion and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-171 Oral Facial Structures and Body Systems</td>
<td>4</td>
</tr>
<tr>
<td>DENTL-172 Dental Radiography I</td>
<td>2.5</td>
</tr>
<tr>
<td>DENTL-173 Dental Operative Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-174 Dental Materials and Laboratory Procedures</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-175 Infection Control/Oral Documentation/Theories of Dental Assisting</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-180 Office Management</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-181 Dental Emergencies, Pharmacology and Oral Pathology</td>
<td>2</td>
</tr>
<tr>
<td>DENTL-182 Dental Radiography II</td>
<td>2.5</td>
</tr>
<tr>
<td>DENTL-183 Advanced Dental Operative Procedures</td>
<td>4.5</td>
</tr>
<tr>
<td>DENTL-184 Clinical Experience</td>
<td>7</td>
</tr>
<tr>
<td>DENTL-191 Pit and Fissure Sealants for the RDA</td>
<td>1.5</td>
</tr>
<tr>
<td>ENGL-122* Freshman English: Composition and Reading</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-122* Psychology in Modern Life</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Minimum Required Units:** 45.3

*Students are expected to take one or two of these courses in the summer prior to entering the program.

**Certificate of Achievement - Dental Assisting**

**Program Prerequisite:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENTL-120</td>
<td>0.3</td>
</tr>
</tbody>
</table>

**Note:** It is strongly recommended to complete one of the required general education or English courses prior to entering the Registered Dental Assisting Program in the fall term. Refer to general education courses below.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENTL-171 Oral Facial Structures and Body Systems</td>
<td>4</td>
</tr>
<tr>
<td>DENTL-172 Dental Radiography I</td>
<td>2.5</td>
</tr>
<tr>
<td>DENTL-173 Dental Operative Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-174 Dental Materials and Laboratory Procedures</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-175 Infection Control/Oral Documentation/Theories of Dental Assisting</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-180 Office Management</td>
<td>3</td>
</tr>
<tr>
<td>DENTL-181 Dental Emergencies, Pharmacology and Oral Pathology</td>
<td>2</td>
</tr>
<tr>
<td>DENTL-182 Dental Radiography II</td>
<td>2.5</td>
</tr>
<tr>
<td>DENTL-183 Advanced Dental Operative Procedures</td>
<td>4.5</td>
</tr>
<tr>
<td>DENTL-184 Clinical Experience</td>
<td>7</td>
</tr>
<tr>
<td>DENTL-191 Pit and Fissure Sealants for the RDA</td>
<td>1.5</td>
</tr>
</tbody>
</table>
### DENTAL ASSISTING

**plus at least 3 units from:**
- BUS-101* Business English ........................................... 3
- ENGL-118* College Writing Development ......................... 3
- ENGL-122* Freshman English: Composition and Reading ........ 3

**plus at least 3 units from:**
- PSYCH-101* Introduction to Psychology ............................. 3
- PSYCH-122* Psychology in Modern Life .............................. 3

**total minimum required units** 45.3

* Students are expected to take one or two of these courses in the summer prior to entering the program. Those considering applying to the dental hygiene program are required to take English 122, Psychology 122 and Speech 121 unless they hold a baccalaureate degree or higher.

**Recommended course**

DENTL-110 Overview of the Dental Profession ................. 1.5 (Offered mid-spring term)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENTL-110</td>
<td>Overview of the Dental Profession</td>
<td>1.5</td>
</tr>
<tr>
<td>DENTL-120</td>
<td>Orientation to the Registered Dental Assisting Program</td>
<td>1.5</td>
</tr>
<tr>
<td>DENTL-150</td>
<td>Topics in Dental Assisting</td>
<td>3-4</td>
</tr>
<tr>
<td>DENTL-171</td>
<td>Oral Facial Structures and Body Systems</td>
<td>4</td>
</tr>
<tr>
<td>DENTL-172</td>
<td>Dental Radiography I</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**DENTL-110 Overview of the Dental Profession**

1.5 units P/NP
- 27 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: This course is open to all students

An overview of the dental profession with special emphasis on assisting, hygiene and dental technology concepts. This course may be particularly helpful to the students desiring to enter dental assisting, dental hygiene or dental technology programs. CSU

**DENTL-120 Orientation to the Registered Dental Assisting Program**

1.5 units P/NP
- 6 hours lecture per term
- Note: Students must complete health requirements before the beginning of the fall term. This will allow the student to work on one another, on patients in the clinic, or patients at the University of the Pacific Dental School, and in the dental internship offices.

This course is designed for all students interested in enrolling into the registered dental assisting program. The orientation course will provide the student with detailed enrollment information and the health protocol standards for the registered dental assistant student. Emphasis will be placed on laboratory asepsis, infection control and disease transmission. Information will be given on the supplies and equipment needed for disease prevention in compliance with regularity agencies such as the Dental Board of California, Center for Disease Control and Prevention (CDC) and the Occupational Safety and Health Administration (OSHA). Career pathways of dental assisting, registered dental assisting, professionalism, malpractice insurance and dental assisting organizations will be discussed. Guidelines from the Dental Practice Act Rules and Regulations will be presented in relationship to the dental assistant, registered dental assistant, and the registered dental assistant in extended functions. CSU

**DENTL-150 Topics in Dental Assisting**

3-4 units SC
- Variable hours

A supplemental course in dental assisting to provide a study of current concepts and methods in dental assisting and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

**DENTL-171 Oral Facial Structures and Body Systems**

4 units LR
- 54 hours lecture/36 hours laboratory per term
- Prerequisite: DENTL-120 and current American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current enrollment in the DVC Registered Dental Assisting program, current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR Certificate (Basic Life Support for Healthcare Provider with AED) are required

Introduction to general anatomy, body systems, and monitoring patient sedation as related to respiratory and cardiovascular systems. Head and neck anatomy with emphasis on the teeth and their supporting structures. CSU

**DENTL-172 Dental Radiography I**

2.5 units LR
- 36 hours lecture/36 hours laboratory per term
- Prerequisite: DENTL-120 and current American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current enrollment in the DVC Registered Dental Assisting program, current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR Certificate (Basic Life Support for Healthcare Provider with AED) are required

Principles of oral radiography to include pre-clinical and clinical application of procedures involved in exposing, processing, mounting and interpretation of dental radiographs. Emphasis will be placed on radiation safety, infection control procedures, management of waste and other related environmental hazards. Introduction to digital radiography. The dental assistant’s role in radiography and exposing patients as it pertains to the Dental Practice Act (DPA), State of California. CSU
**DENTL-173 Dental Operative Procedures I**
3 units LR
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: DENTL-120 and current American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current enrollment in the DVC Registered Dental Assisting program, current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR Certificate (Basic Life Support for Healthcare Provider with AED) are required

Principles of chairside assisting. Operative procedures which include chairside responsibilities, instrument identification, tray setups, four-handed techniques, and sequences of general dentistry procedures. Identification, care and maintenance of the operatory and equipment. CSU

**DENTL-174 Dental Materials and Laboratory Procedures**
3 units LR
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: DENTL-120 and American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current enrollment in the DVC Registered Dental Assisting program, current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR Certificate (Basic Life Support for Healthcare Provider with AED) are required

The study, manipulation, and safe handling of dental materials used in operative and restorative dentistry. Characteristics, manipulation, and safe handling of dental laboratory materials and equipment and usage of instruments will also be presented. Emphasis on infection control and safety standards as well as hazards control protocols are stressed throughout the course. CSU

**DENTL-175 Infection Control/Oral Documentation/ Theories of Dental Assisting**
3 units LR
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: DENTL-120 and American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current enrollment in the DVC Registered Dental Assisting program, current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR Certificate (Basic Life Support for Healthcare Provider with AED) are required

Emphasis will be placed on clinical infection control procedures (disinfection, instrument processing and sterilization, waste disposal, types of diseases of particular concern to the dental team, prevention of disease transmission), related national and state regulatory and advisory agencies, and related legal and ethical concerns. Topics also include: documenting medical/dental health histories; taking and record-
DENTL-182 Dental Radiography II
2.5 units LR
- 27 hours lecture/54 hours laboratory per term
- Prerequisite: DENTL-172 and current American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current CPR certificate (Basic Life Support for Healthcare Provider with AED)

Emphasizes patient management and radiation safety. Infection control procedures in accordance with OSHA and CDC guidelines and regulations from the Dental Board of California. Perform and evaluate various types of intraoral and extra-oral radiographs and interpretation thereof. Advanced principles and practices of dental radiography with emphasis on technique and diagnostic quality of dental x-rays. Continuation of various digital radiography techniques. The dental assistant’s role in radiography and in exposing patients as it pertains to the Dental Practice Act (DPA), state of California. CSU

DENTL-183 Advanced Dental Operative Procedures
4.5 units LR
- 63 hours lecture/72 hours laboratory per term
- Prerequisite: DENTL-173 and current American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current CPR certificate (Basic Life Support for Healthcare Provider with AED)

Advanced studies and manipulative skills in the specialties of dentistry. These specialties include: orthodontics, pediatrics, oral surgery, periodontics, endodontics, prosthodontics, and public health. Board approved coronal polish and community service dental health projects. CSU

DENTL-184 Clinical Experience
7 units LR
- 36 hours lecture/288 hours laboratory per term
- Prerequisite: DENTL-174 and current American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current CPR certificate (Basic Life Support for Healthcare Provider with AED)

Dental assisting experience with emphasis on private dental practices to include: dental office evaluation, job expectations, interviewing skills, resume writing, employment evaluations and agreements. Written and practical mock exams will be conducted in preparation for State and National Board exams upon completion of the program. Two week pre-clinical review prior to internship rotation. CSU

DENTL-190 Ultra Sonic Scaling for Orthodontic Procedures for the RDA
1 unit LR
- 9 hours lecture/18 hours laboratory per term
- Prerequisite: DENTL-183 and current American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Note: Current enrollment in the DVC Registered Dental Assisting program, current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR Certificate (Basic Life Support for Healthcare Provider with AED) are required

Theory and utilization of an ultrasonic scaler for the removal of excess supragingival cement from the coronal surfaces of teeth undergoing orthodontic treatment as described by the Dental Board of California. Emphasis will be placed on following standard precautionary principles and infection control protocols before, during and after the procedure. CSU

DENTL-191 Pit and Fissure Sealants for the RDA
1.5 units SC
- 9 hours lecture by arrangement/54 hours laboratory by arrangement per term
- Prerequisite: DENTL-183 and current American Heart Association or American Red Cross Basic Life Support with Defibrillator Certificate or equivalents
- Note: Current enrollment in the DVC Registered Dental Assisting program, current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR Certificate (Basic Life Support for Healthcare Provider with AED) are required

This course presents the theory, utilization, preparation and application of dental pit and fissure sealants for Registered Dental Assistants as outlined by the Committee on Dental Auxiliaries (COMDA) and the Dental Board of California (DBC). Emphasis will be placed on following standard precautionary principles and infection control protocols before, during and after procedure. CSU

DENTL-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU
DENTAL HYGIENE – DENHY

Tish Young, dean
Biological and Health Sciences Division
Physical Sciences Building, Room 263

Possible career opportunities
While most dental hygienists find employment in general dental practices, opportunities for employment also exist in specialty practices such as periodontics or pediatric dentistry. Hygienists may be employed to provide dental hygiene services for patients in hospitals, nursing homes and public health clinics.

With additional education, dental hygienists can choose to pursue a teaching career in a dental school or a dental hygiene education program. Research careers, office management, business administration and clinical practice careers, in school or public health programs, also generally require additional education.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Dental hygiene

Certificate of achievement
Dental hygiene

Associate in science degree - Dental hygiene
This two-year program of classroom instruction and clinical experience prepares students to perform the educational, clinical (teeth cleaning), and laboratory responsibilities of a dental hygienist. Students are prepared to take the National Board Examination, California Registered Dental Hygiene State Board Examination as well as board examinations in other states. The program is accredited by Commission on Dental Accreditation (CODA) of the American Dental Association and by the United States Department of Education and approved by the California State Board of Dental Examiners.

To be eligible for enrollment into the dental hygiene program applicants must complete the specified prerequisite courses prior to submitting an application. All science prerequisite courses must be taken within the last seven years.

To earn a degree, students must complete the A.S. degree requirements (unless they already hold this or a higher degree) and achieve a “C” grade or higher in each of the required courses. Dental hygiene required program courses are only available in the day. However, required general education courses are available in the day or evening. It is highly recommended that students complete the general education courses as required by CODA prior to application and have an overall GPA of 3.0 or higher. Certain courses may satisfy both prerequisite/major and general education requirements; however, the units are only counted once.

Students in the dental hygiene program must present a current cardiopulmonary resuscitation card and results of a recent physical examination providing evidence of good health including tuberculosis clearance and immunization at the beginning of their first term. For dental hygiene program information and an application packet for enrollment contact the Dental Hygiene Department, Counseling Office or DVC website.

major requirements

<table>
<thead>
<tr>
<th>program prerequisites or equivalents</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-120* Introduction to Human Anatomy and Physiology</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-108* Introductory Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-109* Introduction to Organic and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>ENGL-122 Freshman English: Composition and Reading</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI-160* Nutrition: Science and Applications</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 4 units from:</td>
<td></td>
</tr>
<tr>
<td>BIOSC-119* Fundamentals of Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-146* Principles of Microbiology</td>
<td>5</td>
</tr>
</tbody>
</table>

*These courses must have been completed within the past seven years.

program requirements

| DENHY-101 Dental Hygiene Orientation                                           | 0.3   |
| DENHY-120 Introduction to Dental Hygiene: Theory, Process of Care and Practice | 1     |
| DENHY-121 Introduction to Comprehensive Clinical Dental Hygiene Care           | 5     |
| DENHY-122 Clinical Dental Hygiene                                              | 5     |
| DENHY-123 Oral Health Care Education                                           | 2     |
| DENHY-124 Fundamentals of Radiology for the Dental Hygienist                   | 2     |
| DENHY-125 Head and Neck Anatomy, Histology, and Embryology                    | 4     |
| DENHY-126 Dental Morphology                                                     | 2     |
| DENHY-127 Infection Control: Theory, Practice and Communication                | 2     |
| DENHY-128 Periodontics for the Dental Hygienian                                | 2     |
| DENHY-129 Contemporary Dental Materials for the Dental Hygienist              |       |
| DENHY-131 Local Anesthesia                                                     | 1     |
| DENHY-134 Evaluation of Scientific Research                                    | 1     |
| DENHY-135 Pharmacology for the Dental Hygienian                                | 3     |

*These courses must have been completed within the past seven years.
DENTAL HYGIENE

DENHY-219 Pathology ............................................. 2
DENHY-223 Ethics, Jurisprudence, and Practice
Management ............................................. 2
DENHY-225 Community Oral Health................................. 2
DENHY-226 Community Oral Health Service Learning........1.5
DENHY-227 Advanced Periodontal Dental Hygiene Care II ....... 2
DENHY-230 Advanced Clinical Dental Hygiene Care I.......... 6
DENHY-231 Advanced Clinical Dental Hygiene Care II .......... 6.5
PSYCH-122 Psychology in Modern Life.......................... 3
SOCIO-120 Introduction to Sociology............................. 3

plus at least 3 units from:
COMM-120 Public Speaking ........................................ 3
COMM-121 Persuasion and Critical Thinking....................... 3

total minimum required units - program 62.8

Certificate of achievement - Dental hygiene

This two-year program of classroom instruction and clinical experience prepares students to perform the educational, clinical (teeth cleaning), and laboratory responsibilities of a dental hygienist. Students are prepared to take the National Board Examination, California Registered Dental Hygiene State Board Examination and many other state board examinations. The program is accredited by the Commission on Dental Accreditation (CODA) of the American Dental Association and by the United States Department of Education and approved by the California State Board of Dental Examiners.

To be eligible for enrollment into the dental hygiene program applicants must complete the specified prerequisite courses prior to submitting an application. All science prerequisite courses must be taken within the last seven years.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Dental hygiene required program courses are only available in the day. Required general education courses are available in the day or evening. It is highly recommended that students complete the general education courses as required by CODA prior to application and have an overall GPA of 3.0 or higher.

Students in the dental hygiene program must present a current cardiopulmonary resuscitation card and results of a recent physical examination providing evidence of good health including tuberculosis clearance and immunizations at the beginning of their first term. For dental hygiene program information and an application packet for enrollment contact the Dental Hygiene Department, Counseling Office or DVC website.

program prerequisites or equivalents:
BIOSC-120* Introduction to Human Anatomy and Physiology ............................................. 5
CHEM-108* Introductory Chemistry.................................. 4
CHEM-109* Introduction to Organic and Biochemistry ....... 4
ENGL-122 Freshman English: Composition and Reading............................................. 3
NUTRI-160* Nutrition: Science and Applications............. 3

plus at least 4 units from:
BIOSC 119* Fundamentals of Microbiology ......................... 4
BIOSC 146* Principles of Microbiology ............................ 5

* These courses must have been completed within the past seven years.

required dental hygiene program courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM-120</td>
<td>Public Speaking</td>
<td>3</td>
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<tr>
<td>DENHY-101</td>
<td>Dental Hygiene Orientation</td>
<td>0.3</td>
</tr>
<tr>
<td>DENHY-120</td>
<td>Introduction to Dental Hygiene: Theory, Process of Care and Practice</td>
<td>1.5</td>
</tr>
<tr>
<td>DENHY-121</td>
<td>Introduction to Comprehensive Clinical Dental Hygiene Care</td>
<td>5</td>
</tr>
<tr>
<td>DENHY-122</td>
<td>Clinical Dental Hygiene</td>
<td>5</td>
</tr>
<tr>
<td>DENHY-123</td>
<td>Oral Health Care Education</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-124</td>
<td>Fundamentals of Radiology for the Dental Hygienist</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-125</td>
<td>Head and Neck Anatomy, Histology, and Embryology</td>
<td>4</td>
</tr>
<tr>
<td>DENHY-126</td>
<td>Dental Morphology</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-127</td>
<td>Infection Control: Theory, Practice and Communication</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-128</td>
<td>Periodontics for the Dental Hygienist</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-129</td>
<td>Contemporary Dental Materials for the Dental Hygienist</td>
<td>1.5</td>
</tr>
<tr>
<td>DENHY-131</td>
<td>Local Anesthesia</td>
<td>1</td>
</tr>
<tr>
<td>DENHY-134</td>
<td>Evaluation of Scientific Research</td>
<td>1</td>
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<tr>
<td>DENHY-135</td>
<td>Pharmacology for the Dental Hygienist</td>
<td>3</td>
</tr>
<tr>
<td>DENHY-219</td>
<td>Pathology</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-223</td>
<td>Ethics, Jurisprudence, and Practice Management</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-225</td>
<td>Community Oral Health</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-226</td>
<td>Community Oral Health Service Learning</td>
<td>1.5</td>
</tr>
<tr>
<td>DENHY-227</td>
<td>Advanced Periodontal Dental Hygiene Care</td>
<td>2</td>
</tr>
<tr>
<td>DENHY-230</td>
<td>Advanced Clinical Dental Hygiene Care I</td>
<td>6</td>
</tr>
<tr>
<td>DENHY-231</td>
<td>Advanced Clinical Dental Hygiene Care II</td>
<td>6.5</td>
</tr>
<tr>
<td>PSYCH-122</td>
<td>Psychology in Modern Life</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-120</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units - program 62.8

recommended courses:
DENTL-110 Overview of the Dental Profession ................. 1.5
The following courses are open only to those accepted into the dental hygiene program.

**DENHY-101 Dental Hygiene Orientation**

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>P/NP</td>
<td>6 hours lecture/12 hours laboratory per term</td>
</tr>
</tbody>
</table>

- **Note:** Only students who are accepted into the dental hygiene program (or accepted as an alternate) will be allowed to register for this course. See the catalog or website for program information.

This course is an overview of dental hygiene curriculum, dental terminology, introduction to instrumentation skills and areas of planning and time management for the dental hygiene student. CSU

**DENHY-120 Introduction to Dental Hygiene: Theory, Process of Care and Practice**

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>LR</td>
<td>18 hours lecture per term</td>
</tr>
</tbody>
</table>
- **Prerequisite:** BIOSC-146 and DENHY-101 or equivalents

An introduction to the evolving profession of dental hygiene, the conceptual framework for dental hygiene and the dental hygiene process for the promotion of oral health and wellness. The course will focus on the dental hygiene human needs conceptual model and its application to the dental hygiene process of care. While all eight human needs related to dental hygiene care will be addressed, special focus will be given to assessment of the human needs for integrity of the skin and mucous membrane and a biologically sound and functional dentition. In addition, dental hygiene diagnosis and identification of dental hygiene interventions will be included. CSU

**DENHY-121 Introduction to Comprehensive Clinical Dental Hygiene Care**

<table>
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<th>Units</th>
<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>5</td>
<td>LR</td>
<td>54 hours lecture/108 hours laboratory per term</td>
</tr>
</tbody>
</table>
- **Prerequisite:** DENHY-101 or equivalent
- **Note:** TB clearance and medical exam

Introduction to the dental hygiene process, technical skills and procedures used in the clinical practice of dental hygiene. Clinical competency development will focus on client assessments, dental hygiene diagnosis, treatment planning, case presentation and implementation of instrumentation techniques for providing prevention-oriented and therapeutic dental hygiene care. Post treatment evaluation is also emphasized. CSU

**DENHY-122 Clinical Dental Hygiene**

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<tr>
<th>Units</th>
<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>5</td>
<td>LR</td>
<td>48 hours lecture/126 hours laboratory per term</td>
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</tbody>
</table>
- **Prerequisite:** DENHY-101 or equivalent
- **Note:** Current certificate in CPR required

Application of the dental hygiene process of care guided by the human needs conceptual model to promote oral health and wellness. The course includes laboratory and clinical experiences in client assessments, problem identification (dental hygiene diagnosis), dental hygiene care planning, case presentation and implementation of dental hygiene care (preventive and therapeutic procedures, oral health education). Evaluation of dental hygiene care/oral health goals attainment is also emphasized as an essential component of the dental hygiene process. This course has an emphasis on case study development in relationship to client care needs and treatment planning. CSU

**DENHY-123 Oral Health Care Education**

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>2</td>
<td>LR</td>
<td>36 hours lecture per term</td>
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</tbody>
</table>
- **Prerequisite:** DENHY-101 and NUTRI-160 or equivalents

This course is designed to introduce the principles, theory, and practice of oral hygiene care. The focus is to develop educational techniques and technical skills that can be used to assist individuals and groups in becoming integrally involved in their dental/oral care. This course will also focus on gaining information and the application of information related to oral health care to help the student make informed decisions regarding oral health promotion and disease prevention. Personal mechanical removal of bacterial plaque through the use of toothbrushes and other oral physiotherapy aids is introduced. Case studies will be used to enhance the learning experience (i.e. critical thinking and problem solving skills). CSU

**DENHY-124 Fundamentals of Radiology for the Dental Hygienist**

<table>
<thead>
<tr>
<th>Units</th>
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<th>Description</th>
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<tbody>
<tr>
<td>2</td>
<td>LR</td>
<td>18 hours lecture/54 hours laboratory per term</td>
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</table>
- **Prerequisite:** DENHY-101 and CHEM-108 or equivalents

The study of radiology includes principles of radiation physics, biology, radiation safety, imaging theory, analysis of radiographs and quality assurance. The course focuses on application of the principles of radiology for assessment of the teeth and surrounding structures as an integral component of dental hygiene care and for use in collaborating with other dental professionals to ensure comprehensive oral health care. Contemporary alternative imaging modalities will also be discussed. The laboratory component includes development of values, attitudes and skills to produce radiographs of the highest technical quality with minimum client and operator exposure. CSU

**DENHY-125 Head and Neck Anatomy, Histology, and Embryology**

<table>
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<tr>
<th>Units</th>
<th>Type</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>LR</td>
<td>54 hours lecture/54 hours laboratory per term</td>
</tr>
</tbody>
</table>
- **Prerequisite:** DENHY-101 and BIOSC-120 or equivalents

A course concerned with the functions of the head and neck, with special attention being given to the oral cavity. Included is the general micro-anatomy of the tissue and the embryological development of the head and neck. CSU
DENHY-126 Dental Morphology
2 units LR
• 36 hours lecture per term
• Prerequisite: DENHY-101 or equivalent
The study of the structures and forms of the human dentition through combined lecture and laboratory experience. Aspects related to dental hygiene care such as root morphology, restorative charting, occlusion and dental anomalies are emphasized. CSU

DENHY-127 Infection Control: Theory, Practice and Communication
2 units LR
• 36 hours lecture per term
• Prerequisite: DENHY-101 or equivalent
Presents epidemiology and biomedical information regarding infectious diseases, such as hepatitis, herpes and human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) and prevention of disease transmission. This course will include infection control principles, protocols, CDC and OSHA recommendations/regulations and an introduction to effective communication techniques essential for dental hygiene care delivery. CSU

DENHY-128 Periodontics for the Dental Hygienist
2 units LR
• 36 hours lecture per term
• Prerequisite: DENHY-101 or equivalent
The study of the discipline of periodontics. This includes related biological, clinical and behavioral aspects of the disease. Specifically, content will include: etiology, histopathology, epidemiology of the periodontal diseases; anatomical and histological features of the healthy periodontium; dental hygiene diagnosis; the classification of the periodontal diseases; the principles of periodontal therapy including prevention, initial periodontal therapy (biologic basis and rationale); adjunctive therapy; periodontal maintenance; principles of regenerative surgery. CSU

DENHY-129 Contemporary Dental Materials for the Dental Hygienist
1.5 units LR
• 18 hours lecture/36 hours laboratory per term
• Prerequisite: DENHY-101 or equivalent
The study of dental materials science designed to achieve an understanding of the underlying principles of materials science as they apply to the selection and handling of those materials utilized as part of contemporary comprehensive dental hygiene care. Students will gain knowledge of the basic science and behavior of existing materials within a framework which will enable them to adapt to the rapidly evolving array of new dental materials and techniques in the professional arena. CSU

DENHY-131 Local Anesthesia
1 unit LR
• 9 hours lecture/27 hours laboratory per term
• Prerequisite: DENHY-101 and DENHY-127 or equivalents
• Note: Current certificate in CPR required
A course covering the techniques of pain control by the administration of local anesthetics. The course prepares the student for management of the more complex clinical client during advanced dental hygiene care procedures. CSU

DENHY-134 Evaluation of Scientific Research
1 unit LR
• 18 hours lecture per term
• Prerequisite: DENHY-101 and ENGL-122 or equivalents
This course is designed to familiarize the student with scientific research methodology and provide the tools necessary to critically review, evaluate and interpret scientific research results as presented in scientific and professional literature. Additionally, this course will provide insight into the review process for popular literature. CSU

DENHY-135 Pharmacology for the Dental Hygienist
3 units LR
• 54 hours lecture per term
• Prerequisite: DENHY-101 and CHEM-109 or equivalents
The study of pharmaceuticals used in medicine and dentistry. Emphasis is placed on identifying and understanding drugs by category of therapeutic use (i.e. local anesthetics, antibiotics, anti hypertensives). The underlying physiologic basis for drug action is explored. Adverse reactions including side effects and allergic responses are addressed. The study of nitrous oxide as a dental sedative in preparation for the use of this drug clinically is a core component of the course. CSU

DENHY-150 Topics in Dental Hygiene
.3-4 units LR
• Variable hours
• Prerequisite: DENHY-101 or equivalent
A supplemental course in dental hygiene to provide a study of current concepts and problems in dental hygiene and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

DENHY-219 Pathology
2 units LR
• 36 hours lecture per term
• Prerequisite: DENHY-120 or equivalent
This course is designed to provide an introduction to clinical and diagnostic general and oral pathology. Emphasis will be placed upon the recognition of the presence of abnormality and the acquisition by the student of sufficient knowledge upon which to base a reasonable differential diagnosis of any lesion which is likely to be met in general dental practice. CSU
DENHY-223 Ethics, Jurisprudence, and Practice Management
2 units LR
- 36 hours lecture per term
- Prerequisite: DENHY-120 or equivalent
The study of jurisprudence, ethics, and practice management as these concepts relate to dental hygiene care. A personal philosophy toward professional conduct, continued quality improvement, self-assessment and peer evaluation are developed. Management and leadership skills essential for dental hygienists practicing within the dental setting is emphasized. CSU

DENHY-225 Community Oral Health
2 units LR
- 36 hours lecture per term
- Prerequisite: DENHY-120 and ENGL-122 or equivalents
- Formerly DENHY-132
This course is the study of oral health and disease in culturally and economically diverse community and public health settings. Course emphasis is on oral health education in a variety of environments with numerous oral health needs. The process of community and public health program planning includes the assessment, development, implementation and evaluation of community-based oral health programs. This course will focus on the planning of a community-based oral health project to implement next semester through action research and evaluation. CSU

DENHY-226 Community Oral Health Service Learning
1.5 units LR
- 18 hours lecture/279 hours laboratory by arrangement per term
- Prerequisite: DENHY-120 and DENHY-225 or equivalents
This course is the study of oral health and disease in culturally and economically diverse community and public health settings. Course emphasis is on oral health education in a variety of environments with numerous oral health needs. The process of community and public health program planning includes the assessment, development, implementation and evaluation of community-based oral health programs. This course will focus on the implementation and evaluation of a planned oral health project in the community through action research. CSU

DENHY-227 Advanced Periodontal Dental Hygiene Care
2 units LR
- 36 hours lecture per term
- Prerequisite: DENHY-120 or equivalent
Study of advanced principles of clinical dental hygiene care; including advanced instrumentation techniques, soft tissue (gingival) curettage, use of power driven scalers, dental hygiene diagnosis and dental hygiene care planning for clients with periodontal diseases. Current concepts about the adjunctive use of chemical agents in the prevention and treatment of inflammatory periodontal diseases will be explored in the context of dental hygiene care with case-based presentations. Additional supportive treatment procedures, which augment periodontal debridement and oral hygiene self-care, will be incorporated into an evidence-based approach to dental hygiene care. CSU

DENHY-230 Advanced Clinical Dental Hygiene Care I
6 units LR
- 18 hours lecture/279 hours laboratory per term
- Prerequisite: DENHY-120 and DENHY-127 or equivalents
- Note: Current CPR certificate required
This is a one-term clinical course designed to expand and develop dental hygiene skills in preventive therapy, oral prophylaxis, periodontal initial preparation, and periodontal maintenance therapy. Students will become competent in scaling and root debridement procedures, pain control and gingival curettage. Dental hygiene assessment (diagnostic) and dental hygiene care planning skills will continue to be developed. The student will also become competent in adjunct therapeutic skills. Techniques in the use and interpretation of radiographs, infection control and office procedures will be developed. Learning experiences will be conducted with a human needs framework. Care will be client-centered. The course will consist of seminar and clinical experiences. Students will develop skills by working with clients in the college clinic and in outside clinical environments. The educational focus is on the refinement of periodontal process skills in scaling and debridement, the application of advanced instrumentation principles and early self-assessment skills. CSU

DENHY-231 Advanced Clinical Dental Hygiene Care II
6.5 units LR
- 18 hours lecture/306 hours laboratory per term
- Prerequisite: DENHY-120 and DENHY-127 or equivalents
- Note: Current certificate in CPR
This course is a continuation of the advanced clinical dental hygiene care course designed to lead toward the achievement of clinical competence in preventive oral health care, oral prophylaxis, initial therapy and supportive periodontal therapy. Students will become proficient in scaling and debridement procedures, administration of local anesthetics and nitrous-oxide sedation, and gingival curettage. Dental hygiene assessment, diagnosis (based on human need theory) and dental hygiene care planning skills will be refined. Techniques in use and interpretation of radiographs, infection control and time management will be further developed. The student will also become proficient in adjunct therapeutic skills such as the local placement of antimicrobial agents. CSU
DENHY-295 RH Examination Preparation
.5 unit P/NP
- 27 hours laboratory per term
- Prerequisite: DENHY-231 or equivalent
- Formerly DENHY-099
Advanced clinical dental hygiene experience with emphasis on preparation for the Registered Dental Hygienist (RDH) Examination: including patient selection, preparation, self/peer evaluation to enhance performance on the State of California license examination.

DENHY-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to study special interests under the direction of the faculty. CSU

DENHY-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

DENAL LABORATORY TECHNOLOGY - DENTE

Tish Young, dean
Biological and Health Sciences Division
Physical Sciences Building, Room 263

Possible career opportunities
Upon completion of the dental technology program, students are eligible for the National Comprehensive Examination, which leads to certification sponsored by the National Board of Certified Dental Laboratories. Most graduates find job placements as technicians in dental laboratories.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree - Dental laboratory technology
Certificate of achievement - Dental laboratory technology

Associate in science degree - Dental laboratory technology
The associate in science program in dental technology prepares students to construct removable and fixed prosthetic appliances; construct and cast inlays, crowns, and bridges; and prepare ceramic jackets.
The program of classroom instruction and clinical experience, along with general education, leads to the associate degree in dental technology. To earn a degree, students must complete each of the courses required for the major with a “C” grade or higher and complete general education requirements as listed in the catalog. Major requirements for dental technology courses are only available in the day. General education courses are available in the day or evening.
For an information sheet describing admission requirements, contact the Admissions and Records Office.

major requirements units
DENTE-120 Ethics, Jurisprudence, and History of Dentistry .............................................. 1
DENTE-122 Introduction to Dental Materials .............................................. 1
DENTE-124 Introduction to Dental Morphology .............................................. 2
DENTE-236 Dental Anatomy and Morphology .............................................. 2
DENTE-237 Intermediate Crown and Bridge Techniques .............................................. 2
DENTE-238 Advanced Crown and Bridge Techniques .............................................. 4
DENTE-240 Introduction to Dental Ceramics .............................................. 2
DENTE-242 Dental Ceramics Substructure and Designs .............................................. 4
DENTE-250 Practical Fixed and Removable Techniques .............................................. 2

total minimum required units 20

recommended courses:
BUSMG-191 Small Business Management .............................................. 3
COOP-170 Occupational Work Experience Education .............................................. 1-4
DENTL-110 Overview of the Dental Profession .............................................. 1.5
ENGL-122 Freshman English: Composition and Reading .............................................. 3
PHYS-112 Fundamentals of Physical Science .............................................. 3
Certificate of achievement - Dental laboratory technology

This program prepares students to construct removable and fixed prosthetic appliances; construct and cast inlays, crowns, and bridges; and prepare ceramic jackets.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Most required courses are only available in the day. However, some recommended courses are available in the day or evening.

For an information sheet describing admission requirements contact the Admissions and Records Office.

required courses

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The total minimum required units is 20.

recommended courses:

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<tr>
<td>PHYS-112</td>
<td>Fundamentals of Physical Science</td>
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The following courses are open only to those accepted into the dental laboratory technology program.

DENTE-120 Ethics, Jurisprudence and History of Dentistry

1 unit LR

- 18 hours lecture per term
- Note: This course to be taken in the first term

Principles of ethics in the dental profession. History and jurisprudence of dental laboratory technology. CSU

DENTE-122 Introduction to Dental Materials

1 unit LR

- 18 hours lecture/18 hours laboratory per term
- Note: This course to be taken in the first term

Introduction to the various metallic and nonmetallic materials used in dental laboratory practices. The development of the manipulative skill necessary for the proper use of the materials. CSU

DENTE-124 Introduction to Dental Morphology

2 units LR

- 18 hours lecture/54 hours laboratory per term
- Note: This course to be taken in the first term

Introduction to anatomy of the head and oral cavity with emphasis on the individual teeth. Reproduction of the individual teeth in wax. CSU

DENTE-150 Topics in Dental Technology

3-4 units LR

- Variable hours

A supplemental course in dental technology to provide a study of current concepts and problems in dental technology and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

DENTE-236 Dental Anatomy and Morphology

2 units LR

- 18 hours lecture/54 hours laboratory per term
- Note: This course to be taken in the first term

Instruction in dental anatomy and morphology; principles of occlusion and introduction to crown and bridge. CSU

DENTE-237 Intermediate Crown and Bridge Techniques

2 units LR

- 18 hours lecture/54 hours laboratory per term
- Note: This course to be taken in the first term

The presentation of techniques necessary for the fabrication of fixed restorations including types of fixed restorations, prepared tooth forms, impressions, casts, dies, related occlusion, waxing of patterns, carving of patterns, investing of patterns, casting of patterns, and finishing of castings. CSU

DENTE-238 Advanced Crown and Bridge Techniques

4 units LR

- 36 hours lecture/108 hours laboratory per term
- Prerequisite: DENTE-122, DENTE-236, and DENTE-237, or equivalents

The presentation of techniques necessary for advanced fabrication of fixed and removable prosthetics including the development of single and multiple unit ceramic restorations in various combinations as well as the fabrication of restorations on natural cases. CSU
DENTAL LABORATORY TECHNOLOGY

DENTE-240 Introduction to Dental Ceramics 2 units LR
• 18 hours lecture/54 hours laboratory per term
• Note: This course to be taken in the first term
The techniques of manipulation for single units of porcelain bonded to metal including opaquing, building, firing, grinding, glazing, and staining. CSU

DENTE-242 Dental Ceramics Substructure and Designs 4 units LR
• 36 hours lecture/108 hours laboratory per term
• Prerequisite: DENTE-240 or equivalent
Continued advanced techniques of dental ceramics, including the fabrication of porcelain margins and characterized staining of ceramic porcelain restorations. CSU

DENTE-250 Practical Fixed and Removable Techniques 2 units LR
• 18 hours lecture/54 hours laboratory per term
• Prerequisite: DENTE-124 or equivalent
This course is part of the total educational process that assists students in exploring and choosing a career, preparing for full-time employment and advancing in career specialty areas. The plan combines students skills applications, practical cases (real cases) prescriptions and case due dates, which are similar to those in commercial laboratories. This plan also prepares students for the transition from the community college setting into the commercial dental laboratory setting. CSU

DENTE-299 Student Instructional Assistant .5-3 units SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

DRAMA – DRAMA

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Possible career opportunities
Most careers related to theatre require education beyond the associate degree, however, an understanding and mastery of technical theatre skills provides some preparation for work in local community and professional theatre. Possible career options include: set designer, model builder, makeup artist, lighting designer, stage manager, scenic artist, set builder, set carpenter, set painter, stage technician, sound technician, prop maker, and lighting operator.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Technical theater

Certificate of achievement
Technical theater

The program in technical theater prepares students for an entry-level career in community and professional theater. Careers may include scene shop technician, property artisan, electrician, costume technician, makeup technician, scenic artist, or stage manager. The program also prepares students who wish to expand their careers to entry-level technical video and film positions, as well as entry into a four-year university or professional school.

While this program of study is not designed as a transfer program, selected courses in the program meet lower division requirements for the bachelor of arts degree at many California State University and University of California campuses. Consult with department faculty and a college counselor for more information.

Students must complete each course used to meet a major or certificate requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the certificate and/or degree. Students who wish to apply for the associate degree must also complete general education requirements as listed in the catalog.

The certificate program can also be used as the “major” that is required for the associate in arts degree in technical theater at Diablo Valley College.
**Associate in arts degree - Technical theater**

**major requirements**

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*Note: Students may only apply one of DRAMA-260 or DRAMA-270 to major requirements*

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**Certificate of achievement - Technical theater**

**required courses**

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*Note: Students may only apply one of DRAMA-260 or DRAMA-270 to certificate requirements*
DRAMA-111  Fundamentals of Stage Production - Lighting
3 units  SC
- 54 hours lecture per term
Theory and techniques of stage lighting including the function of lighting equipment, the operation of basic dimmer systems, and the creation of light designs for selected plays. CSU, UC

DRAMA-112  Stage Makeup
2 units  SC
- 18 hours lecture/36 hours laboratory/18 hours laboratory by arrangement per term
This course studies the aesthetics, materials and procedures of stage makeup involving: corrective and aging techniques, latex and derma wax for witches and fairies, character makeup for a variety of historical periods and genres, the creation of animals and monsters, and the construction of beards and moustaches. CSU, UC

DRAMA-113  Introduction to Costume Design
2.5 units  SC
- 18 hours lecture/36 hours laboratory/54 hours laboratory by arrangement per term
Theory and application of costume design and construction for the theater including fabric, basic patterns, wardrobe plotting, and historical styles. Working in crews on construction of costumes for theatrical productions. CSU, UC

DRAMA-122  Basic Principles of Acting
3 units  SC
- 54 hours lecture per term
This course focuses on beginning acting fundamentals with an emphasis on the heightening and focusing of physical and vocal energy, and the important elements necessary for scene study. Students will learn how to assess and rechannel their physical hypertension and apply scene study techniques correctly on stage. CSU, UC

DRAMA-123  Intermediate Principles of Acting
3 units  SC
- 54 hours lecture per term
- Recommended: DRAMA-122 or equivalent
This course continues to develop the heightened physical and vocal energies needed for stage, and introduces more complex elements in scene study. Students continue their work in addressing instrumental hypertension, and learn specific ways to apply the use of the imagination to the preparation and performance of a scene on stage. C-ID THTR 152, CSU, UC

DRAMA-124  Advanced Principles of Acting
6 units  SC
- 108 hours lecture per term
- Prerequisite: DRAMA-122 and DRAMA-123 or equivalents; audition required
The study of acting with extensive participation in the performance of selected scenes from contemporary realism. Special emphasis is placed on script analysis, personalization, intensive listening and interaction modes with partners. The course covers an organic approach to acting training based on the principles of Constantin Stanislavski. CSU, UC

DRAMA-126  Acting on Camera
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: DRAMA-122 and 123 or equivalents
This course covers practical training and practice in acting on camera for the performer. Close attention will be paid to those techniques of acting that have special application to performing in television and film. CSU, UC

DRAMA-127  Auditioning Techniques
3 units  SC
- 54 hours lecture per term
- Recommended: DRAMA-122 or equivalent
This course will cover the elements of auditioning techniques that include: monologue selection and styles, cold reading, actor's preparation, research, resume development, and practical application of acting techniques for audition purposes. Students will learn to prepare for college, community and professional theater auditions as well as create a portfolio of audition material. CSU

DRAMA-130  Principles of Directing
3 units  SC
- 54 hours lecture per term
- Recommended: DRAMA-122 and 123 or equivalents; concurrent enrollment in DRAMA-230 or equivalent; eligibility for ENGL-122 or equivalent
Study and analysis of the stage director, his or her function, and the preparation of a play script from the first reading through casting, rehearsals, and performances. Emphasis will be placed on theory of directing as well as its practical application. CSU, UC

DRAMA-139  Introduction to Theater
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A comprehensive examination of the multiple disciplines of theater and the collaboration process within. This introductory course surveys the roles of actors, directors, playwrights and designers (set, costume, sound and lighting). It will also cover the origins of theater, history, dramatic structure, the audience and theater performance spaces. CSU, UC
DRAMA-140  History of the Theater: Pre-Greek to 17th Century
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an historical survey of dramatic art from the period of pre-Greek civilization to the Elizabethan Renaissance. Students will examine the various influences that led to the development and evolution of theater in various cultures and time periods. CSU, UC

DRAMA-141  History of the Theater: 17th Century to Present
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an historical survey of dramatic art from the period of the Elizabethan Renaissance to the present. Students will examine the various influences that led to the development and evolution of theater in various cultures and time periods. CSU, UC

DRAMA-142  Multicultural Perspectives in American Theater
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
Students will explore and evaluate contemporary dramatic literature (1965-present) of Native American, African American, Asian Pacific American, Asian American and Chicano/Latino cultures. They will also examine the historical as well as the cultural and social conditions in which these plays developed. CSU, UC

DRAMA-150  Children’s Theater
3 units  SC
• 54 hours lecture per term
This is a course in the theory and principles of children’s theater. It features the creation of a production using an adult cast, with emphasis upon performance for a young audience. The production will tour local schools. Each term new literature and productions are focused upon. CSU

DRAMA-155  Topics in Drama
.3-.4 units  SC
• Variable hours
• Formerly DRAMA-290
A supplemental course in drama to provide a study of current concepts, problems, and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

DRAMA-157  Topics in Technical Theater
.3-.4 units  SC
• Variable hours
A supplemental course in technical theater to provide a study of current concepts, problems, and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

DRAMA-170  Introduction to Musical Theater
4 units  SC
• 72 hours lecture per term
• Recommended: MUSIC-170 or equivalent
This course develops audition and performance skills combining singing, dancing, and acting in the presentation of scenes, as well as the rehearsal and performance of dance routines from a variety of musicals. A survey of the history and development of musical theater is included. CSU, UC

DRAMA-180  Literature of World Drama: Pre-Greek to 17th Century
3 units  SC
• 54 hours lecture per term
This course examines great works of world dramatic literature from the periods of pre-Greek civilization to the Elizabethan Renaissance. Through reading, writing, scene work, and viewing stage and film productions, students will gain an understanding of how the transformation of great dramatic literature from text to performance had a profound influence on past civilizations, and how it continues to have an influence today. CSU, UC

DRAMA-181  Literature of World Drama: 17th Century to Present
3 units  SC
• 54 hours lecture per term
This course examines works of great dramatic literature from the period of the Elizabethan Renaissance to the present day. Through reading, writing, scene work, and viewing stage and film productions, students will gain an understanding of how the transformation of great dramatic literature from text to performance had a profound influence on past civilizations, and how it continues to have an influence today. CSU, UC

DRAMA-200  Introduction to Technical Theater
3 units  SC
• 54 hours lecture per term
• Co-requisite: DRAMA-201 or equivalent
Introduction to technical theater will provide students with a theoretical as well as a practical overview of the elements of technical theater. These would include the following: safety precautions, stage management, stage design, scenery, lighting, sound, acting, make-up, and costuming. Also included will be the discussion of job opportunities in theater. CSU, UC
DRAMA-201  Technical Theater Laboratory
1-2 units  SC
- Variable hours
- Prerequisite: DRAMA-200 or equivalent (may be taken concurrently)

This course will provide students with the practical applications of various aspects of technical theater. Students will obtain hands-on experience working on main stage productions, arena productions, and student-directed projects. They will assist in the following areas: stage management, stage design, scenery construction, painting for the stage, properties, lighting, sound, make-up, and costuming. Students will also learn safety procedures for working in the shop and for working on staged performances. CSU, UC

DRAMA-202  Fundamentals of Stage Production – Technical Theater
1-2 units  SC
- Variable hours
- Prerequisite: Audition and interview

This is an open entry open exit course where students participate in a technical theater capacity in a faculty directed stage production. Technical theater students are introduced to participating in a full length production in a variety of ways; working with sets, sound, lighting, painting, costume, stage management, and props. Students will be introduced to professional rehearsal and performance standards. All projects culminate in public performance. The organization and function of the technical staff, the structure of the physical theater, and job opportunities in technical theater will also be discussed. CSU, UC

DRAMA-230  Directing Projects
1-2 units  SC
- Variable hours
- Recommended: Concurrent enrollment in DRAMA-130 or equivalent; eligibility for ENGL-122 or equivalent

This course is a practical application of DRAMA-130; the preparation of a scene or one act from script selection through performance. Students will cast, rehearse, and stage a variety of scenes or one acts; projects may culminate in limited public performance. Emphasis is placed on the director-actor relationship and creating effective staging. May include original (not previously published) material. CSU, UC

DRAMA-260  Acting in Student Directed Projects
1-2 units  SC
- May be repeated three times
- Variable hours
- Recommended: Audition or equivalent

This is an open entry open exit class, where students receive practical experience in rehearsing and performing in student-directed scenes or one act plays in various theater styles for public performance. CSU, UC

DRAMA-270  Major Production
1-2 units  SC
- May be repeated three times
- Variable hours
- Prerequisite: Audition and interview

This is an open entry, open exit class, where students participate in a faculty-directed musical or nonmusical production, with emphasis on rehearsal and performance. Students may participate as either actors or technical crew. Involvement may include script analysis, coordination of voice, movement, costume, makeup, performance style, and technical theater. All projects culminate in public performance. CSU, UC

DRAMA-275  Musical Theater Production
1-2 units  SC
- Variable hours
- Prerequisite: Audition

This is an open entry open exit course where students participate in a faculty directed musical theater stage production, with emphasis on the combination of singing, dancing, and acting. Musical Theater Production will focus on how to use musicality, song, and dance, to embody emotional life for performance on stage in a musical theater production. Students will be introduced to professional rehearsal and performance standards. All projects culminate in public performance. CSU

DRAMA-298  Independent Study
.5-3 units  SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.

An opportunity for advanced students to study special interests under the direction of the faculty. CSU

DRAMA-299  Student Instructional Assistant
.5-3 units  SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU
EARLY CHILDHOOD EDUCATION – ECE

Obed Vazquez, interim dean
Social Sciences Division
Faculty Office Building, Room 136

Possible career opportunities
Early childhood educators focus on children from zero to age five. Some of the positions held by early childhood professionals are: classroom aide, ECE teacher, site supervisor, program director, child care provider, adult educator of families and other professionals, resource and referral professional, social service worker, youth and family service worker, camp counselor, recreation leader, foster care provider, mental health paraprofessional, or child advocate.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Early childhood education

Certificates of achievement
Early childhood education - Basic
Early childhood education - Master teacher
Early childhood education - Site supervisor
Early childhood education - Teacher

Certificates of accomplishment
Early childhood education - Associate teacher

Associate in science degree - Early childhood education
The associate in science program in early childhood education is designed as a two-year curricular pathway that offers students a broad general education while integrating an in-depth study in child development and theory, principles and practices in early care and education. The early childhood education program prepares students for various careers working directly with children, families and other adults in the early childhood profession.

To earn a degree, students must complete each of the courses required for the major with a “C” grade or higher and complete general education requirements as listed in the catalog. Attending classes in the day, the evening or both can complete degree requirements.

major requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
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<td>Introduction to Curriculum in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-124</td>
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<td>Principles and Practices of Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-126</td>
<td>Health, Safety, and Nutrition for the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ECE-128</td>
<td>Advanced Curriculum Development in ECE</td>
<td>3</td>
</tr>
<tr>
<td>ECE-130</td>
<td>Child, Family and Community</td>
<td></td>
</tr>
<tr>
<td>ECE-144</td>
<td>Diversity in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-249</td>
<td>Observation and Assessment in the Classroom</td>
<td>4</td>
</tr>
<tr>
<td>ECE-250</td>
<td>Practicum in Early Childhood Education</td>
<td>4</td>
</tr>
</tbody>
</table>

total minimum required units  29

recommended degree electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ECE-129, 150, 151, 152, 153, 154, 155, 220, 230, 231, 237, 240, 241, 242, 243, 244, 251, 252, 253, 260, 298</td>
<td></td>
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</tr>
</tbody>
</table>

Certificate of achievement - Early childhood education - Basic
This certificate prepares students to meet the demands of today's childcare centers, preschool programs, and nursery schools. The certificate meets the California State Department of Social Services, Community Care Licensing Title 22, and Division 12 requirements for a fully qualified teacher. The early childhood education basic certificate is an alternative certificate to the California State Matrix and to the child development certificate.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Attending classes in the day, the evening, or both can complete certificate requirements.

required courses

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<td>Practicum in Early Childhood Education</td>
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</tr>
</tbody>
</table>

total minimum required units  29

The following certificates meet the education requirements for the associate teacher, teacher, master teacher and site supervisor levels of the Child Development Permit Matrix issued by the State of California Commission on Teacher Credentialing. After meeting additional experience requirements, graduates are qualified to apply for a Child Development Permit, which is required to work in federal and state funded programs for children aged 0-5.
Certificate of achievement - Early childhood education - Master teacher

This childhood development certificate meets the education requirements for the master teacher level of the Child Development Permit Matrix issued by the State of California Commission on Teacher Credentialing. After meeting additional experience requirements, graduates are qualified to apply for a Child Development Permit, which is required to work in federal and state funded programs for children aged 0-5.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Attending classes in the day, the evening, or both can complete certificate requirements.

required courses

- ECE-123 Introduction to Curriculum in Early Childhood Education .................................................. 3
- ECE-124 Child Development and Psychology ................................................................. 3
- ECE-125 Principles and Practices of Early Childhood Education ....................................... 3
- ECE-126 Health, Safety, and Nutrition for the Young Child ................................................. 3
- ECE-128 Advanced Curriculum Development in ECE ....................................................... 3
- ECE-130 Child, Family and Community ............................................................................ 3
- ECE-144 Diversity in Early Childhood Education .............................................................. 3
- ECE-249 Observation and Assessment in the Classroom .................................................... 4
- ECE-250 Practicum in Early Childhood Education .............................................................. 4
- ECE-253 Adult Supervision in Early Childhood Classrooms .............................................. 2-3

plus at least 6 units in any one of these areas of concentration:

creative expression

- ECE 237* Current Topics in Early Childhood Education .................................................. 0.5-3
- ECE 242 Music for the Young Child ................................................................................. 1
- ECE 243 Creative Art for the Young Child ......................................................................... 1
or one elective from ART-155, 160; or KNDAN-100, 110, 130, 142, 160A; or DRAMA-150; or MUSIC-101, 102, 112, 120, 150, 151, 171

curriculum

- ECE-140 Creative Activities for Young Children .............................................................. 3
- ECE-237* Current Topics in Early Childhood Education .................................................. 0.5-3
- ECE-240 Language, Literacy, and Literature for the Young Child ...................................... 3
- ECE-241 Science and Mathematics for Early Childhood Education .................................. 3
- ECE-242 Music for the Young Child ................................................................................. 1
- ECE-243 Creative Art for the Young Child ......................................................................... 1
- ECE-244 Circle Time Activities ......................................................................................... 1

infants and toddlers

- ECE-230 Infant and Toddler Care ....................................................................................... 3
- ECE-231 Infants and Toddlers: Issues and Applications ..................................................... 3

language and literature

- ECE 237* Current Topics in Early Childhood Education .................................................. 0.5-3
- ECE 240 Language, Literacy, and Literature for the Young Child ...................................... 3
- ENGL-177 Children’s Literature ....................................................................................... 3
- L-111 Storytelling ............................................................................................................ 2

science and math

- ECE-237* Current Topics in Early Childhood Education .................................................. 0.5-3
- ECE-241 Science and Mathematics for Early Childhood Education .................................. 3

(Note: Two ECE-237 courses in this category are required)

sign language

- SIGN-280 American Sign Language (ASL) I ................................................................. 3
- SIGN-281 American Sign Language (ASL) II ................................................................ 3
- SIGN-282 American Sign Language (ASL) III .............................................................. 3
- SIGN-283 American Sign Language (ASL) IV ................................................................. 3

special needs

- ECE 129 Dealing with Difficult and Aggressive Young Children ....................................... 3
- ECE-269 Introduction to Special Needs in Young Children .............................................. 3
- SPEDU-101 Introduction to Disabilities ............................................................................. 3
- SPEDU-102 Historical Perspectives of Disabilities and the Law ....................................... 3
- SPEDU-103 Classroom Strategies for the Special Education Paraeducator ..................... 3

Or any sign language course:

SIGN-280, 281, 282 or 283 ..................................................................................................... 3

plus at least 16 units from:

general education courses ................................................................................................ 16
(at least one course each from humanities, social science, science or math, and English)

total minimum required units 53

*Topics for ECE-237 vary. Please contact the Early Childhood Education Department to verify if a specific ECE-237 course meets the requirements for a particular area of specialization.

Certificate of achievement - Early childhood education - Site supervisor

This certificate meets the education requirements for the site supervisor level of the Child Development Permit Matrix issued by the State of California Commission on Teacher Credentialing. After meeting additional experience requirements, graduates are qualified to apply for a Child Development Permit, which is required to work in federal and state funded programs for children aged 0-5.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Attending classes in the day, the evening, or both can complete certificate requirements.
Certificate of achievement - Early childhood education - Teacher

This certificate meets the education requirements for the teacher level of the Child Development Permit Matrix issued by the State of California Commission on Teacher Credentialing. After meeting additional experience requirements, graduates are qualified to apply for a Child Development Permit, which is required to work in federal and state funded programs for children aged 0-5.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Attending classes in the day, the evening, or both can complete certificate requirements.

required courses | units
---|---
ECE-123 | Introduction to Curriculum in Early Childhood Education | 3
ECE-124 | Child Development and Psychology | 3
ECE-125 | Principles and Practices of Early Childhood Education | 3
ECE-126 | Health, Safety and Nutrition for the Young Child | 3
ECE-128 | Advanced Curriculum Development in ECE | 3
ECE-130 | Child, Family, and Community | 3
ECE-144 | Diversity in Early Childhood Education | 3
ECE-249 | Observation and Assessment in the Classroom | 4
ECE-250 | Practicum in Early Childhood Education | 4

plus at least 8 units:

<table>
<thead>
<tr>
<th>course</th>
<th>title</th>
</tr>
</thead>
</table>
| ECE-251 | Administration and Supervision of Early Childhood Education Programs | 3
| ECE-252 | Staff Development and Supervision for Early Childhood Programs | 3
| ECE-253 | Adult Supervision in Early Childhood Classrooms | 2

Certificate of accomplishment - Early childhood education - Associate teacher

This certificate meets the education requirements for the associate teacher level of the Child Development Permit Matrix issued by the State of California Commission on Teacher Credentialing and Community Care Licensing, Title 22 requirements for a fully qualified teacher. After meeting additional experience requirements, graduates are qualified to apply for a Child Development Permit, which is required to work in federal and state funded programs for children aged 0-5.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Attending classes in the day, the evening, or both can complete certificate requirements.

required courses | units
---|---
ECE-123 | Introduction to Curriculum in Early Childhood Education | 3
ECE-124 | Child Development and Psychology | 3
ECE-125 | Principles and Practices of Early Childhood Education | 3
ECE-130 | Child, Family, and Community | 3

Certificate of accomplishment - Early childhood education - Teacher

This certificate meets the education requirements for the teacher level of the Child Development Permit Matrix issued by the State of California Commission on Teacher Credentialing and Community Care Licensing, Title 22 requirements for a fully qualified teacher. After meeting additional experience requirements, graduates are qualified to apply for a Child Development Permit, which is required to work in federal and state funded programs for children aged 0-5.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Attending classes in the day, the evening, or both can complete certificate requirements.

required courses | units
---|---
ECE-123 | Introduction to Curriculum in Early Childhood Education | 3
ECE-124 | Child Development and Psychology | 3
ECE-125 | Principles and Practices of Early Childhood Education | 3
ECE-130 | Child, Family, and Community | 3

Certificate of accomplishment - Early childhood education - Associate teacher

This certificate meets the education requirements for the associate teacher level of the Child Development Permit Matrix issued by the State of California Commission on Teacher Credentialing and Community Care Licensing, Title 22 requirements for a fully qualified teacher. After meeting additional experience requirements, graduates are qualified to apply for a Child Development Permit, which is required to work in federal and state funded programs for children aged 0-5.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Attending classes in the day, the evening, or both can complete certificate requirements.

required courses | units
---|---
ECE-123 | Introduction to Curriculum in Early Childhood Education | 3
ECE-124 | Child Development and Psychology | 3
ECE-125 | Principles and Practices of Early Childhood Education | 3
ECE-130 | Child, Family, and Community | 3
ECE-125  Principles and Practices of Early Childhood Education
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development

An examination of the principles of developmentally appropriate practices as applied to early childhood education settings. This course includes history and philosophy of early childhood education, the ethics of professional practices, and orientation to careers working with children. Emphasis is placed on types of programs, learning environments, the key role of relationships, constructive adult-child interactions, and teaching strategies supporting the development of all children. C-ID ECE 120, CSU

ECE-126  Health, Safety, and Nutrition for the Young Child
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Meets the State Department of Social Services licensing requirement for DSS VII, Health and Safety

Introduction to the laws, regulations, standards, policies and procedures and early childhood curriculum related to child health safety and nutrition. The key components that ensure physical health, mental health and safety for both children and staff will be identified along with the importance of collaboration with families and health professionals. Focus on integrating the concepts into everyday planning and program development for all children. C-ID ECE 220, CSU

ECE-128  Advanced Curriculum Development in ECE
3 units  SC
• 54 hours lecture per term
• Co-requisite: ECE-124 or equivalent (may be taken previously)
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development

This course will focus on new trends, approaches and techniques in early childhood education curriculum. It will acquaint students with various curriculum approaches and give them practice in applying such approaches in an ECE program. CSU

ECE-129  Dealing with Difficult and Aggressive Young Children
3 units  SC
• 54 hours lecture per term
• Co-requisite: ECE-124 or equivalent (may be taken previously)
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development

This course is designed to examine the reasons for children's difficult and aggressive behaviors. Strategies for prevention and intervention in the classroom and home will be studied. CSU

ECE-130  Child, Family, and Community
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Meets the State Department of Social Services licensing requirements for DSS II, Child, Family, and Community

An introduction to the issues involved in early childhood education related to the entire learning environment of a child with emphasis on the family and community. Examination of the impact of family systems and culture on children's development will occur. Study of community and society as it impacts the family and the child with an introduction to community resources available to support contemporary family life. C-ID CDEV 110, CSU

ECE-140  Creative Activities for Young Children
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Meets the Department of the Social Services licensing requirement for DSS III, Program and Curriculum Development

A hands-on broad scope curriculum course which covers many of the major components of quality programs for children. The focus is on “Developmentally Appropriate Practice” in various content areas such as art, science, literature, storytelling, dramatic play, puppetry, literacy, music, outdoor environments and circle time. CSU

ECE-144  Diversity in Early Childhood Education
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Meets the State Department of Social Services licensing requirements for DSS III, Program and Curriculum Development

This course examines biases regarding race, gender, culture, disability, class and age in order to prepare students to work within diverse classrooms and communities. Through this examination students gain knowledge of experiences and perspectives other than their own, therefore, increasing tolerance, respect for, and interaction among people from diverse populations. C-ID ECE 230, CSU
ECE-150  Topics in Child Development  
1-3 units  P/NP  
• Variable hours  
• Note: TB clearance required for any laboratory work. Participation in Developmental Children's Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week. Required of parents whose children are enrolled in Developmental Children's Center. 
A supplemental course in child development to provide a study of current concepts and problems in child development and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-151  Topics in Cognitive Development  
1-3 units  P/NP  
• Variable hours  
• Note: TB clearance required for any laboratory work. Participation in Developmental Children's Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week. 
A supplemental course in cognitive development to provide a study of current concepts and problems in cognitive development and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-152  Topics in Physical Development  
1-3 units  P/NP  
• Variable hours  
• Note: TB clearance required for any laboratory work. Participation in Developmental Children's Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week. 
A supplemental course in physical development in the child through age six to provide a study of current concepts and problems in physical development and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-153  Topics in the Role of Play in Development  
1-3 units  P/NP  
• Variable hours  
• Note: TB clearance required for any laboratory work. Participation in Developmental Children's Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week. 
A supplemental course in the role of play in development to provide a study of current concepts and problems in play development and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-154  Topics in Personality Development  
1-3 units  P/NP  
• Variable hours  
• Note: TB clearance required for any laboratory work. Participation in Developmental Children's Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week. 
A supplemental course in personality development to provide a study of current concepts and problems in personality development and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-155  Topics in Child Behavior  
1-3 units  P/NP  
• Variable hours  
• Note: TB clearance required for any laboratory work. Participation in Developmental Children's Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week. 
A supplemental course in child behavior to provide a study of current concepts and problems in behavior and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-220  Programs for the School Age Child  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This course is an overview of the developmental tasks and needs of the child between the ages of six and twelve covering fundamentals of planning, implementing, and evaluating programs for the school-aged child. Special consideration will be given to working with schools, community, and parents. CSU
ECE-230  Infant and Toddler Care  
3 units  SC  
- 54 hours lecture per term  
- Recommended: ECE-124 and eligibility for ENGL-122 or equivalents  
- Note: Meets the State Department of Social Services licensing requirement for DSS IV, Infant Care and Development  

Review of the developmental issues of infants and toddlers. Study of the basic components of developmentally appropriate infant-toddler curriculum including development, care-giving environments, care-giver response and collaboration with families. Observations of infants and toddlers, learning environments, and care-giving strategies will be included. CSU

ECE-231  Infant and Toddlers: Issues and Application  
3 units  SC  
- 54 hours lecture per term  
- Recommended: ECE-124, ECE-230 and eligibility for ENGL-122 or equivalents  

This course is designed to review current infant and toddler development issues and to discuss current developmental topics that impact infant/toddler care. CSU

ECE-237  Current Topics in Early Childhood Education  
.5-3 units  SC  
- Variable hours  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development, if taken for 3 units, and the course is a curriculum course  

A supplemental course in child development to provide a study of current concepts and problems in the major theories of child development including their philosophical bases, their techniques and their materials and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-240  Language, Literacy and Literature for the Young Child  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  

An introduction to young children's literature, emergent literacy and to the development of speech and language during infancy and early childhood. Students will explore teaching techniques, which promote language, literacy and literature for the young child. Approaches to reading books, storytelling, story writing, etc. will be introduced and practiced. CSU

ECE-241  Science and Mathematics for Early Childhood Education  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development  

Survey of the materials in science, nature, and mathematics fields suitable for use in teaching young children (ages 0 - 8 years). Training in materials, techniques, demonstrations and experiments which enable the teacher to arrange a learning environment. Special focus on concept-based, inquiry-oriented approaches. CSU

ECE-242  Music for the Young Child  
1 unit  SC  
- 18 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development  

This course is an exploration of media and techniques that enable the teacher to plan, conduct, and evaluate music and movement activities for the young child. Experiences in the integration of music, movement, and language as related to conceptual and sensory motor development are covered. CSU

ECE-243  Creative Art for the Young Child  
1 unit  SC  
- 18 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development  

A study of the developmental stages of children’s artistic expression. Includes an exploration of creative art activities along with developing and implementing a creative arts curriculum for the young child. CSU

ECE-244  Circle Time Activities  
1 unit  SC  
- 18 hours lecture per term  

This course is designed to present the value of circle or group time for young children. Written materials, demonstrations, lecture and discussions, and sharing of student experiences are utilized to teach practical and theoretical application of songs, stories, games, finger plays and other circle time activities. CSU
ECE-249  Observation and Assessment in the Classroom
4 units  SC
• 54 hours lecture/54 hours laboratory by arrangement per term
• Prerequisite: ECE-124 or equivalent
• Co-requisite: ECE-125 or equivalent (may be taken previously)
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: TB clearance required for students to participate in laboratory work at DVC Children's Center or approved mentor site. Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development.

This course focuses on the appropriate use of assessment and observation strategies to document development, growth, play and learning in early childhood education settings. Students will utilize practical classroom experiences to apply a variety of observation methodologies including, child portfolios, recording strategies, rating systems, and multiple assessment tools. Within the context of the DVC Children's Center or an approved mentor site, students will explore the connections between developmental theory and practical usage of reflective observation. C-ID ECE 200, CSU

ECE-250  Practicum in Early Childhood Education
4 units  SC
• 36 hours lecture/108 hours laboratory by arrangement per term
• Prerequisite: ECE-123, ECE-124, ECE-125 and ECE-249 or equivalents
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Required TB clearance for students participating in laboratory work. Meets the State department of Social Services licensing requirement for DSS III, Program and Curriculum Development.

A supervised practicum study of developmentally appropriate early childhood teaching competencies. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors, and build a comprehensive understanding of children and families. Child centered, play-oriented approaches to teaching, learning, and assessment; and knowledge of curriculum content areas will be emphasized. Student teachers design, implement and evaluate learning activities and environments. Focus is on reflective teaching and developing in-depth curriculum projects based on on-going observations of children. C-ID ECE 210, CSU

ECE-251  Administration and Supervision of Early Childhood Education Programs
3 units  SC
• 54 hours lecture per term
• Prerequisite: ECE-124 or equivalent
• Note: Meets the State Department of Social Services licensing requirement for DSS VI, Supervision and Administration

Provides study and understanding of administrative procedures and principles of supervision, management, and evaluation used in early childhood programs, with focus on practical application of theory. CSU

ECE-252  Staff Development and Supervision for Early Childhood Programs
3 units  SC
• 54 hours lecture per term
• Recommended: ECE-251 and eligibility for ENGL-122 or equivalents
• Note: Meets the State Department of Social Services licensing requirement for DSS VI, Supervision and Administration

This course examines supervisory theory, organizational dynamics, and staff development as they relate to early childhood education. Focus is on the human relations aspects of successful administration, and on the development of supervisory styles and management techniques to promote staff motivation and teacher effectiveness. CSU

ECE-253  Adult Supervision in Early Childhood Classrooms
2 units  SC
• 36 hours lecture per term
• Recommended: ECE-124, 125, 130 and 250 or equivalents; eligibility for ENGL-122 or equivalent

This course is a study of the methods and principles of supervising student teachers, assistant teachers, parents and volunteers in early childhood education/child development classrooms. Emphasis is on the role of classroom teachers who function as mentors to new teachers while simultaneously addressing the needs of children, parents, and other staff. CSU

ECE-269  Introduction to Special Needs in Young Children
3 units  SC
• 54 hours lecture per term
• Recommended: ECE-124 and eligibility for ENGL-122 or equivalents

An introduction to theory, methods and materials used to understand and work with young children with special needs. Examination of legal mandates, service delivery models, various disabilities and developmental delays. Resources for identification, assessment, and inclusion strategies will be addressed. CSU
ECE-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.

An opportunity for advanced students to pursue special interests under direction of the early childhood education faculty. CSU

ECE-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ECONOMICS – ECON

Obed Vasquez, interim dean
Social Sciences Division
Faculty Office Building, Room 136

Possible career opportunities
Economics is a basic component for a career in law, management, sales, banking, health care industry, utility industry, consulting, statistical analysis, finance, and government. Most career options require more than two years of college study.

ECON-101 Economics of Public Issues
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

Examination of the economic aspects of selected current public issues such as price controls, crime, education, poverty, pollution, international trade, and taxes. Analyzes the role of economics as a social science in understanding causes of, and policies for dealing with, current public issues. CSU, UC (credit limits may apply to UC - see counselor)

ECON-200 Introduction to Economics
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Business and economics majors should take ECON-220 and ECON-221

This course surveys the basic principles of economics, including both microeconomics and macroeconomics. Students are introduced to concepts such as market demand and supply, market structures, resource markets, business cycles, fiscal policy, the Federal Reserve System, and international trade. CSU, UC (credit limits may apply to UC - see counselor)

ECON-220 Principles of Macroeconomics
3 units SC
- 54 hours lecture per term
- Prerequisite: MATH-120 or MATH-120SP or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent

Students are introduced to fundamental economic principles that recur throughout economics such as scarcity, opportunity cost, marginal decision making and the gains from trade. Macroeconomics focuses on broad economic aggregates such as total output, employment, the price level and the rate of economic growth. The course also examines fiscal and monetary policies and institutions, and finally, applies macroeconomic theories to current economic issues. CSU, UC (credit limits may apply to UC - see counselor)

ECON-221 Principles of Microeconomics
3 units SC
- 54 hours lecture per term
- Prerequisite: MATH-120 or MATH-120SP or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent

Microeconomics focuses on the study of choices made by economic agents, namely, consumers, resource owners, firms, and government, and how these decisions affect the market for a particular good or service. Typical topics include a detailed study of the market mechanism, the elasticity properties of the demand and supply curves, how individuals make decisions about consumption and labor supply, how firms make decisions about how and how much to produce, and why some goods do not lend themselves to private production. The course also examines types of market structure and current economic issues. CSU, UC (credit limits may apply to UC - see counselor)

ECON-255 Topics in Economics
.3-4 units SC
- Variable hours

A supplemental course in economics to provide a study of current concepts and problems in economics and related substantive areas. Specific topics will be announced in the schedule of classes. CSU
ECON-298  Independent Study
.5-3 units SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for students to study special interests under the direction of the faculty. CSU

ECON-299  Student Instructional Assistant
.5-3 units SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

EDUCATION – EDUC

Obed Vazquez, interim dean
Social Sciences Division
Faculty Office Building, Room 136

Possible career opportunities
There are two types of credentials for teaching in the public schools in California. One type is the Multiple Subjects Credential for teachers in a self-contained classroom, which generally means teaching in grades K-6 or K-8. The other is the Single Subject Credential for teachers responsible for only one subject, which in general is preparation for teaching high school (grades 9-12). Both career options require an advanced degree.

Preparation for teaching may be useful for students who also wish to pursue careers in human resources, counseling, communication studies, recreation administration, social welfare, and corporate training.

EDUC-120  Teaching as a Profession
3 units LR
• 45 hours lecture/27 hours laboratory by arrangement per term
• Note: Credit by examination option available
The course invites the student to explore teaching as a profession. Effective teaching, experiences and expectations of a teacher, foundations of teaching, critical issues in education, student diversity and job options are emphasized. Students are required to complete 27 hours of field observation and field work. This course is designed for students considering teaching as a profession, and for parents of children in the American school system who want to be informed of current issues and practices in education. CSU, UC

EDUC-122  Introduction to Reading Development and Interventions for K-3
3 units LR
• 45 hours lecture/27 hours laboratory by arrangement per term
This course introduces students to the practice and theory of reading intervention in grades kindergarten to 3. Students will be exposed to the developmental stages of language acquisition and literacy. Students will acquire a working vocabulary of pertinent terms and strategies appropriate to enhance the literacy of primary-age students. Fieldwork in designated schools is a key component of this course. Students will be expected to research a topic related to reading and report findings to the class. CSU

EDUCATIONAL TECHNOLOGY – ELECT/ELTRN

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
The types of jobs and careers involving electrical/electronics include: electrical, medical, industrial, and commercial electronic programmable logic controller systems; computers; consumer products; radio and television; instrumentation; communications; automotive and others.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.
## Associate in science degree - Electrical/electronics technology

This program prepares students for jobs installing, repairing, maintaining and servicing electrical and electronics equipment. Electrical/electronics jobs are found in the fields of electrical, medical, industrial, commercial systems, programmable logic controller systems, automotive, communications and others. The following courses are part of the Electricians Trainee Program and approved by the Division of Apprenticeship Standards: ELECT-120, 121, 266, 267, 271, ELTRN-102B and CNT-103.

Selected courses may meet some of the lower division requirements for bachelor of science programs in engineering technology and industrial technology at certain California State University campuses and private technical colleges. Consult with electronics department faculty and college counselors for more information.

To earn an associate in science with a major in electricity/electronics, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the certificate and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

### Major Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Required Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-120</td>
<td>4</td>
<td>Direct Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-121</td>
<td>4</td>
<td>Alternating Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-130</td>
<td>4</td>
<td>Motors and Motor Controllers</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-266</td>
<td>3</td>
<td>Electrical Codes: Articles 90-398</td>
<td>3</td>
</tr>
<tr>
<td>ELECT-267</td>
<td>3</td>
<td>Electrical Codes: Articles 400-830</td>
<td>3</td>
</tr>
<tr>
<td>ELECT-271</td>
<td>4</td>
<td>Programmable Logic Controllers</td>
<td>4</td>
</tr>
<tr>
<td>ELTRN-102B</td>
<td>4</td>
<td>Linear Circuits</td>
<td>4</td>
</tr>
</tbody>
</table>

### Total Minimum Required Units: 26

### Recommended Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMTC-110</td>
<td>Introduction to Computer Hardware/Software</td>
</tr>
<tr>
<td>ELTRN-107</td>
<td>Introduction to Robotics</td>
</tr>
<tr>
<td>ENSYS-130</td>
<td>Photovoltaic Systems Design and Installation</td>
</tr>
</tbody>
</table>

## Certificate of achievement - Electrical/Electronics technology

This program prepares students for jobs installing, repairing, maintaining and servicing electrical and electronics equipment. Electrical/electronics jobs are found in the fields of electrical, medical, industrial, commercial systems, programmable logic controller systems, automotive, communications and others. The following courses are part of the Electricians Trainee Program and approved by the Division of Apprenticeship Standards: ELECT-120, 121, 266, 267, 271, ELTRN-102B and CNT-103.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate.

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<td>Alternating Current Circuits</td>
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<tr>
<td>ELECT-130</td>
<td>Motor and Motor Controllers</td>
</tr>
<tr>
<td>ELECT-266</td>
<td>Electrical Codes: Articles 90-398</td>
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### Total Minimum Required Units: 26

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<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>CNT-103</td>
<td>Voice, Video and Network Cabling</td>
</tr>
<tr>
<td>CNT-105</td>
<td>Computer Networking Hardware/Software</td>
</tr>
<tr>
<td>COMTC-110</td>
<td>Introduction to Computer Hardware/Software</td>
</tr>
</tbody>
</table>

### ELECT-120 Direct Current Circuits

4 units LR

- 54 hours lecture/54 hours laboratory per term

Basic direct current (DC) theory covering Ohm’s Law, series circuits, parallel circuits, series-parallel circuits, basic residential wiring and ladder logic. Also includes related laboratory experience. CSU

### ELECT-121 Alternating Current Circuits

4 units LR

- 54 hours lecture/54 hours laboratory per term

- Recommended: ELECT-120 or equivalent

An in-depth study of alternating current (AC) circuits involving capacitance and inductance. Topics include RL, RC, RLC, and resonant circuits. The course covers three phase circuits, and computer simulations of circuits. Also includes related laboratory experience. CSU
ELECT-130  Motors and Motor Controllers
4 units  SC
• 54 hours lecture/54 hours laboratory per term
• Recommended: ELECT-120 or equivalent
Students in this course will gain hands-on experience with the function, operation and characteristics of various types of direct current, single phase and three phase motors. The students will work with control devices and systems used for motor controls. CSU

ELECT-150  Topics in Electricity
.3-4 units  SC
• Variable hours
A supplemental course in electricity designed to provide a study of the current concepts and problems in electricity. Specific topics will be announced in the schedule of classes. CSU

ELECT-266  Electrical Codes: Articles 90-398
3 units  SC
• 54 hours lecture per term
• Note: Same as CONST-266. Students may petition to repeat when code changes.
Interpretation of the National Electrical Code for general requirements, wiring and protection, wiring methods and materials (articles 90-398). Safety installation practices will be applied.

ELECT-267  Electrical Codes: Article 400-830
3 units  SC
• 54 hours lecture per term
• Note: Same as CONST-267. Students may petition to repeat when code changes.
Interpretation of the National Electrical Code for equipment for general use, special occupancies and special equipment (articles 400-830). Safety installation practices will be applied.

ELECT-271  Programmable Logic Controllers
4 units  LR
• 54 hours lecture/54 hours laboratory per term
• Formerly ELTRN-271
This course will cover programmable logic controller equipment, hardware, and programming. The topics include system descriptions, internal and input/output operations, installation and testing, troubleshooting and maintenance, ladder diagrams, programming of counters, timers, and inputs/outputs, and other programming commands. CSU

ELECT-299  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistant function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory, or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ELTRN-102B  Linear Circuits
4 units  LR
• 54 hours lecture/54 hours laboratory per term
• Recommended: ELECT-121 or equivalent
• Note: This course is part of the Electrician Trainee Program approved by the Division of Apprenticeship Standards
A study of operational amplifiers, timers, phase-locked loops, and other active devices. Includes analysis and design of basic circuits such as active filters and analog communication circuits. Also includes related laboratory experience. CSU

ELTRN-107  Introduction to Robotics
1 unit  SC
• 27 hours lecture/27 hours laboratory per term
• Note: Students may petition to repeat this course when software or hardware is changed.
The course will introduce to students programmable controllers which have input devices such as infrared, ultrasonic, pressure sensors and output devices such as motors, servos, stepping motors, lights, relays, solenoids, and switching circuits. Students will be introduced to the languages for programming the programmable controllers. Pneumatics and hydraulics circuits will also be included in the course. CSU

ELTRN-116  Introduction to Electronics
2-4 units  SC
• Variable hours
A survey of the general aspects of electronics, including a study of the basic principles, components, and techniques employed. Includes work with electronic test equipment. This course is intended for persons contemplating entering the field as well as those in related fields that use electronics as a tool. CSU

ELTRN-120  DC Circuits
4 units  LR
• 54 hours lecture/54 hours laboratory per term
Basic direct current (DC) theory covering OHM’s Law, series circuits, parallel circuits, series-parallel circuits, basic residential wiring and ladder logic. Also includes related laboratory experience, including use of software to simulate electrical circuits. CSU
ELTRN-121  AC Circuits  4 units  LR
• 54 hours lecture/54 hours laboratory per term
• Recommended: ELTRN-120 or equivalent

An in-depth study of alternating current (AC) circuits involving capacitance and inductance. Topics include RL, RC, RLC and resonant circuits. The course covers 3-phase circuits, computer-simulated circuits, and related laboratory experience. CSU

ELTRN-150  Topics in Electronics  .3-4 units  SC
• Variable hours

A supplemental course in electronics to provide a study of current concepts and problems in electronics and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ELTRN-299  Student Instructional Assistant  .5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ENERGY SYSTEMS - ENSYS

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
An area of increasing job opportunities is in the various fields of alternate or renewable energy. This includes areas related to solar photovoltaics, solar water heating, wind energy systems, biodiesel and biofuels, biomass, fuel cells and related hydrogen energy devices and other small technologies. Most of the jobs in these areas are involved with the installation, design or maintenance of these systems. Most of these areas require skills in electricity, science, and math.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Energy systems
Specializations:
- Photovoltaic
- Solar thermal

Certificates of achievement
Energy systems - Photovoltaic
Energy Systems - Solar thermal

Associate in science degree - Energy systems
This program prepares students for jobs installing, designing, servicing, and maintaining solar energy systems. Students can choose either of two areas of specialization.

Students who focus on photovoltaic systems will be able to work with residential, commercial and industrial size photovoltaic systems. Many of the skills learned in these courses relate to solar thermal systems as well. The following photovoltaic required courses are part of the Electricians Trainee Program and approved by the Division of Apprenticeship Standards: ELECT-120, 121, 266, 267.

Students who focus on solar thermal systems will be prepared for careers installing, designing, servicing, and maintaining solar thermal systems. Successful completers of this program will be able to work with residential, commercial, and industrial-size solar thermal systems. Solar thermal systems include domestic water heating, radiant floor heating, swimming pool, and spa heating systems. Solar air heating and cooling systems are currently under development, and will be included once established. Many of the skills learned in the solar thermal courses relate to photovoltaic systems as well. The following solar thermal required courses are part of the electricians’ trainee program and are approved by the Division of Apprenticeship Standards: ELECT-120 and 266.

Selected courses may meet some of the lower division requirements for bachelor of science programs in engineering technology and industrial technology at certain California State University campuses, and private technical colleges. Consult with electronics department faculty and college counselors for more information.

To earn an associate in science degree, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major and complete general education requirements as listed in the catalog.

Students are limited to one associate in science degree regardless of the number of specializations completed. Multiple certificates may be awarded.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-110  Occupational Safety</td>
<td>2</td>
</tr>
<tr>
<td>CONST-114  Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>CONST-135  Construction Processes (Residential)</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-120  Direct Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-266  Electrical Codes: Articles 90-398</td>
<td>3</td>
</tr>
</tbody>
</table>
choose 9-11 units from one of the following two specialty areas:

**photovoltaic**

**required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-121 Alternating Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-267 Electrical Codes: Articles 400-830</td>
<td>3</td>
</tr>
<tr>
<td>ENSYS-130 Photovoltaic Systems Design and Installation</td>
<td>2</td>
</tr>
<tr>
<td>ENSYS-230 Advanced Photovoltaic Systems</td>
<td>2</td>
</tr>
</tbody>
</table>

**solar thermal**

**required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-191 Plumbing Code Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>ENSYS-140 Solar Thermal Systems</td>
<td>4</td>
</tr>
<tr>
<td>ENSYS-260 Solar Photovoltaic and Thermal Installation Techniques</td>
<td>2</td>
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</tbody>
</table>

**recommended course**

<table>
<thead>
<tr>
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<th>units</th>
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<tbody>
<tr>
<td>MATH 120 Intermediate Algebra</td>
<td>5</td>
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</tbody>
</table>

**Certificate of achievement - Energy systems - Photovoltaic**

This program prepares students for careers installing, designing, servicing, and maintaining photovoltaic systems. Successful completers of this program will be able to work with residential, commercial, and industrial-size photovoltaic systems. Many of the skills learned in these courses relate to solar thermal systems as well. The following courses are part of the electricians' trainee program and are approved by the Division of Apprenticeship Standards: ELECT-120 and 266.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate.

**required courses**

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</tbody>
</table>

**Certificate of achievement - Energy systems - Solar thermal**

This program prepares students for careers installing, designing, servicing, and maintaining solar thermal systems. Successful completers of this program will be able to work with residential, commercial, and industrial-size solar thermal systems. Solar thermal systems include domestic water heating, radiant floor heating, swimming pool, and spa heating systems. Solar air heating and cooling systems are currently under development, and will be included once established.

Many of the skills learned in these courses relate to solar photovoltaic systems as well. The following courses are part of the electricians’ trainee program and are approved by the Division of Apprenticeship Standards: ELECT-120 and 266.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate.

**required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-110 Occupational Safety</td>
<td>2</td>
</tr>
<tr>
<td>CONST-114 Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>CONST-135 Construction Processes (Residential)</td>
<td>4</td>
</tr>
<tr>
<td>CONST-191 Plumbing Code Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>ELECT-120 Direct Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-266 Electrical Codes: Articles 90-398</td>
<td>3</td>
</tr>
<tr>
<td>ENSYS-140 Solar Thermal Systems</td>
<td>4</td>
</tr>
<tr>
<td>ENSYS-260 Photovoltaic and Solar Thermal Installation Techniques</td>
<td>2</td>
</tr>
</tbody>
</table>

**recommended course**

<table>
<thead>
<tr>
<th>Course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-120 Intermediate Algebra</td>
<td>5</td>
</tr>
</tbody>
</table>

**ENSYS-120 Introduction to Alternate Energy Systems**

2 units SC
- 36 hours lecture/18 hours laboratory per term
- Formerly AET-120

This course will cover present day energy systems and an in-depth analysis of the design and installation of alternate energy systems including solar water heating systems, solar electrical systems, wind electrical systems, wind mechanical systems, small hydro-electrical systems and unique conservation methods. Additional topics include geothermal energy, fuel cells, and biomass systems as well as applications of alternate energy in transportation, industrial, commercial, and residential systems. CSU
ENSYS-130  Photovoltaic Systems Design and Installation
2 units  SC
- 36 hours lecture/18 hours laboratory per term
- Formerly AET-130

Students will learn how to do solar site evaluations, electrical load calculations, solar system size calculations, and installation techniques for grid-tie and off-the-grid photovoltaic systems. Students will learn how to design and install their own solar system and or obtain skills for employment. This course is approved by the North American Board of Certified Energy Practitioners (NABCEP) and the students can take the optional Photovoltaic Systems Entry Level certification exam as part of the course. CSU

ENSYS-140  Solar Thermal Systems
4 units  LR
- 54 hours lecture/54 hours laboratory per term
- Note: The laboratory part of this course will include working with hand and power tools and metal soldering. This course is equivalent to ENSYS-141 and ENSYS-145 combined.
- Formerly AET-140

This course will cover the theory and application of solar thermal systems. This includes solar water heating for domestic use, radiant floor heating, swimming pools and spas. Additional topics include solar air heating and applications of power concentration. CSU

ENSYS-141  Introduction to Solar Thermal Systems
2 units  SC
- 27 hours lecture/27 hours laboratory per term
- Note: Laboratory activities include working with hand and power tools and being on elevated structures

This course will cover the theory and applications of solar thermal systems including hot water heating, radiant floor heating, swimming pools and spas. Laboratory activities include building drain-back, drain-down and ICS solar systems. CSU

ENSYS-145  Advanced Solar Thermal Systems
2 units  LR
- 27 hours lecture/27 hours laboratory per term
- Note: Laboratory activities include working with hand and power tools and being on elevated structures

This course will cover the design, installation and servicing of solar thermal systems for residential and commercial applications. CSU

ENSYS-150  Topics in Energy Systems
.3-4 units  SC
- Variable hours
- Formerly AET-150

A supplemental course in energy systems that provides a study of current concepts and practices in energy systems and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ENSYS-230  Advanced Photovoltaic Systems
2 units  LR
- 27 hours lecture/27 hours laboratory per term
- Recommended: ENSYS-130 and ELECT-122 or equivalents
- Formerly AET-230

This course will cover the National Electrical Code (NEC) specifics concerning photovoltaic installations. The topics include code compliant wiring of modules, inverters, charge controllers, batteries, grounding techniques and related topics. Additional topics include the design and installation of large commercial photovoltaic systems. CSU

ENSYS-260  Solar Photovoltaic and Thermal Installation Techniques
2 units  LR
- 27 hours lecture/27 hours laboratory per term
- Recommended: ENSYS-130 and ENSYS-140 or equivalents
- Note: This course will include activities working with high voltages and working on elevated surfaces. Class activities include climbing ladders, lifting up to 50 pounds and working in crawl spaces and tight areas.
- Formerly AET-260

This course will cover the techniques, tools, materials used in the installation of solar photovoltaic and solar thermal systems. This course will also cover the OSHA safety requirements for ladder, roof, fall-protection systems, scissor lifts and fork lifts. CSU

ENSYS-299  Student Instructional Assistant
.5-3 units  SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
- Formerly AET-299

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU
ENGINEERING AND ENGINEERING TECHNOLOGY – ENGIN

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
The engineering transfer program prepares students to enter four-year engineering schools as juniors. Upon completion of the B.S., students can become electrical, civil, mechanical, chemical, materials, aerospace or industrial engineers.

Career options in engineering technology include civil engineering technicians, surveying and mapping technicians (cartography), architectural and civil drafters, and mechanical engineering technicians. Engineering technicians may work as computer-aided design drafters, engineering aides, land surveyors, field assistants, planning technicians and technical sales people.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree - Civil design drafting technology
The associate in science degree in civil design drafting technology provides students with the technical and analytical skills needed for employment in the field of civil engineering drafting. Through both academic and laboratory study students gain the practical skills needed for entry into the job market. For example, civil drafters may work on plans for major construction projects such as dams, roads, bridges, and sewage systems; or prepare, interpret and revise topographic and/or relief maps using computer-aided-drafting (CAD).

To earn the degree, students must complete each course used to meet a major requirement with a “C” grade or higher and complete general education requirements as listed in the catalog. Students who wish to transfer should consult with program faculty and college counselors to insure that the requirements for transfer to appropriate institutions are met. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

major requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archi-119</td>
<td>Introduction to Technical Drawing</td>
<td>3</td>
</tr>
<tr>
<td>Archi-119</td>
<td>Introduction to Technical Drafting</td>
<td>3</td>
</tr>
<tr>
<td>Engin-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>4</td>
</tr>
<tr>
<td>Engin-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>4</td>
</tr>
<tr>
<td>Archi-135</td>
<td>Digital Tools for Architecture I</td>
<td>3</td>
</tr>
<tr>
<td>Archi-136</td>
<td>Digital Tools for Architecture II</td>
<td>3</td>
</tr>
<tr>
<td>Const-116</td>
<td>Plane Surveying</td>
<td>3</td>
</tr>
<tr>
<td>Engin-123</td>
<td>Principles of Civil Drafting</td>
<td>3</td>
</tr>
<tr>
<td>Engin-140</td>
<td>Plane Surveying</td>
<td>3</td>
</tr>
<tr>
<td>Geog-125</td>
<td>Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
<tr>
<td>Geog-128</td>
<td>Advanced Global Positioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>Geog-160</td>
<td>Introduction to Remote Sensing</td>
<td>4</td>
</tr>
<tr>
<td>Geog-162</td>
<td>Maps and Cartography</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 32
**Associate in science degree - Civil engineering**

The associate in science degree in civil engineering (ASCE) is offered to prepare students to transfer to a four-year institution in the civil engineering major.

The graduates of this program will be able to apply the basic principles of civil engineering to a variety of technical projects related to the design, construction, managing and sustaining of a wide range of developments such as structural systems, buildings, highways, waterways, lifelines, and infrastructures.

The DVC ASCE degree is intended for transfer. Degree requirements at four-year programs differ from institution to institution, so students wishing to transfer to a particular four-year program must consult with a counselor regarding specific major requirements of a particular university program. Additionally, students are advised that other courses in math, physics and chemistry may be required and that engineering courses have science and math prerequisites.

It is recommended that the students contact the counseling office for advisement regarding appropriate sequencing.

Finally, the ASCE is a high-unit major; students are advised to meet with a counselor to determine appropriate general education courses to complete their degree requirements.

To earn an ASCE degree students must complete each course used to meet a major requirement with a “C” grade or higher and complete general education requirements as listed in the catalog. Major requirements may be taken only on a “for grade” basis. Certain courses may satisfy both major and general education requirements; however the units are only counted once.

### major requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-120*</td>
<td>General College Chemistry I..........</td>
<td>5</td>
</tr>
<tr>
<td>ENGIN-110</td>
<td>Introduction to Engineering..........</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-120</td>
<td>Engineering Drawing..................</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-230*</td>
<td>Introduction to Circuits and Devices</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-240*</td>
<td>Properties of Engineering Materials</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-255*</td>
<td>Statics................................</td>
<td>3</td>
</tr>
<tr>
<td>MATH-192*</td>
<td>Analytic Geometry and Calculus I....</td>
<td>5</td>
</tr>
<tr>
<td>MATH-193*</td>
<td>Analytic Geometry and Calculus II...</td>
<td>5</td>
</tr>
<tr>
<td>MATH-292*</td>
<td>Analytic Geometry and Calculus III.</td>
<td>5</td>
</tr>
<tr>
<td>MATH-294*</td>
<td>Differential Equations...............</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-130*</td>
<td>Physics for Engineers and Scientists A: Mechanics and Wave Motion</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230*</td>
<td>Physics for Engineers and Scientists B: Heat and Electro-Magnetism</td>
<td>4</td>
</tr>
</tbody>
</table>

### plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGIN-135</td>
<td>Programming for Scientists and Engineers</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-136*</td>
<td>Computer Programming for Engineers Using MATLAB</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-140*</td>
<td>Plane Surveying......................</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-255*</td>
<td>Dynamics................................</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-257*</td>
<td>Statics and Strength of Materials...</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-258*</td>
<td>Introduction to Solid Mechanics......</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 53

*These courses have prerequisites. See a counselor for program sequence.

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**Associate in science degree - Electrical engineering and computer engineering**

The associate degree program in electrical engineering and computer engineering (EECE) prepares the students for a career in the EECE field or to transfer to a four-year degree program. Graduates entering the workforce will be able to perform the tasks typically expected of an assistant engineer. Students who intend to transfer are advised to select general education Option 2 (IGETC) or Option 3 (CSU breadth). General education option 1 (DVC general education) is appropriate for students who do not intend to transfer.

Most core requirement courses have math and science prerequisites. Students must see a counselor for planning appropriate coursework sequence.

To earn an associate degree in electrical engineering and computer engineering, students must complete the core requirements with a “C” grade or higher. Students must also complete general education requirements as listed in the catalog. Certain courses may satisfy both a major and general education requirement; however the units are only counted once.

### major requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-120*</td>
<td>General College Chemistry I..........</td>
<td>5</td>
</tr>
<tr>
<td>COMSC-165*</td>
<td>Advanced Programming with C and C++</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-210*</td>
<td>Program Design and Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-110</td>
<td>Introduction to Engineering ..........</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-230*</td>
<td>Introduction to Circuits and Devices</td>
<td>4</td>
</tr>
<tr>
<td>MATH-192*</td>
<td>Analytic Geometry and Calculus I....</td>
<td>5</td>
</tr>
<tr>
<td>MATH-193*</td>
<td>Analytic Geometry and Calculus II...</td>
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<tr>
<td>MATH-292*</td>
<td>Analytic Geometry and Calculus III.</td>
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</tr>
<tr>
<td>MATH-294*</td>
<td>Differential Equations...............</td>
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</tr>
<tr>
<td>PHYS-130*</td>
<td>Physics for Engineers and Scientists A: Mechanics and Wave Motion</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230*</td>
<td>Physics for Engineers and Scientists B: Heat and Electro-Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-231*</td>
<td>Physics for Engineers and Scientists C: Optics and Modern Physics</td>
<td>4</td>
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### plus at least 3 units from:

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ENGIN-120</td>
<td>Engineering Drawing..................</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-121</td>
<td>Engineering Drawing/Descriptive Geometry</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-126</td>
<td>Computer Aided Design and Drafting - Auto CAD</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-135</td>
<td>Programming for Scientists and Engineers</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-136*</td>
<td>Computer Programming for Engineers Using MATLAB</td>
<td>4</td>
</tr>
<tr>
<td>MATH-194*</td>
<td>Linear Algebra......................</td>
<td>3</td>
</tr>
<tr>
<td>MATH-195*</td>
<td>Discrete Mathematics................</td>
<td>4</td>
</tr>
</tbody>
</table>

**total minimum required units** 55

*Certain courses required for this degree have prerequisite coursework that could add additional units.*
Associate in science degree - Mechanical design drafting technology

The Engineering Department has placed this degree on INACTIVE status during the completion of necessary curriculum work. While the necessary curriculum evaluation and revision is underway, this degree has been removed from the catalog. The department anticipates that the curriculum revisions needed for a viable program will be completed within two years. Students should be advised that it may not currently be possible to complete the requirements for this degree, although coursework transferred from other schools may allow a student to complete the requirements for the degree or certificate. Additionally, students can request course substitutions from the program director and any student either in progress or starting this program should contact the engineering technology program director for advisement.

Associate in science degree - Mechanical engineering

The associate in science degree in mechanical engineering (ASME) is designed to prepare mechanical engineering students for transfer to a four-year institution. This program enables graduates to apply basic engineering principles and technical skills in support of engineers engaged in the design and development phases of a wide variety of projects involving mechanical systems.

The DVC ASME degree is intended for transfer. Degree requirements at four-year programs differ from institution to institution, so students wishing to transfer to a particular four-year program must consult with a counselor regarding specific major requirements of a particular university program. Additionally, students are advised that other courses in math, physics and chemistry may be required and that engineering courses have science and math prerequisites. It is recommended that the students contact the counseling office for advisement regarding appropriate sequencing. Finally, the ASME is a high-unit major; students are advised to meet with a counselor to determine appropriate general education courses to complete their degree requirements.

To earn an ASME degree students must complete each required course for the major with a “C” grade or higher and complete all the requirements as listed in the catalog. Major requirements may be taken only on a “for grade” basis. Certain courses may satisfy both major and general education requirements; however the units are only counted once.

**major requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>ENGIN-110</td>
<td>Introduction to Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-120</td>
<td>Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-230*</td>
<td>Introduction to Circuits and Devices</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-240*</td>
<td>Properties of Engineering Materials</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-255*</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>MATH-192*</td>
<td>Analytic Geometry and Calculus I</td>
<td>5</td>
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<tr>
<td>MATH-193*</td>
<td>Analytic Geometry and Calculus II</td>
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<td>MATH-292*</td>
<td>Analytic Geometry and Calculus III</td>
<td>5</td>
</tr>
<tr>
<td>MATH-294*</td>
<td>Differential Equations</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-130*</td>
<td>Physics for Engineers and Scientists A: Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230*</td>
<td>Physics for Engineers and Scientists B: Heat and Electro-magnetism</td>
<td>4</td>
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</table>

**plus at least 3 units from:**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ENGIN-135</td>
<td>Programming for Scientists and Engineers</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-136*</td>
<td>Computer Programming for Engineers Using MATLAB</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-256*</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-257*</td>
<td>Statics and Strength of Materials</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-258*</td>
<td>Introduction to Solid Mechanics</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units:** 53

*These courses have prerequisites. See counselor for program sequence.

Certificate of achievement - Civil design drafting technology

This certificate program prepares students for an entry level job as a civil drafter. Drafters work under the supervision of civil or structural engineers, architects, and/or surveyors as support staff in jobs requiring them to prepare, interpret, and revise technical drawings, or gather and categorize field data. Engineering technicians work as support staff in field, laboratory and/or office environments.

To earn a certificate of achievement, students must complete each of the required courses with a “C” grade or higher. Some courses are not offered every term so please consult with the program director for assistance in scheduling classes.

**required courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-114</td>
<td>Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-121*</td>
<td>Engineering Drawing /Descriptive Geometry</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-127</td>
<td>Introduction to Drawing /Global Positioning</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-121</td>
<td>Introduction to Global Positioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-110</td>
<td>Elementary Physics</td>
<td>3</td>
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</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ARCHI-119</td>
<td>Introduction to Technical Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-119</td>
<td>Introduction to Technical Drawing</td>
<td>3</td>
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**plus at least 4 units from:**

<table>
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<tr>
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<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>4</td>
</tr>
</tbody>
</table>

**plus at least 4 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
</table>
To earn a certificate of achievement, students must complete engineering and surveying.

GEOG-125
ENGIN-140*
ENGIN-123
CONST-116*
ARCHI-136
ARCHI-135
plus at least 6 units from:
ARCHI-135 Digital Tools for Architecture I ................. 4
ARCHI-136 Digital Tools for Architecture II ................. 4
CONST-116 Plane Surveying .................................... 3
ENGIN-123 Principles of Civil Drafting ....................... 3
ENGIN-140* Plane Surveying .................................... 3
GEOG-125 Introduction to Geographic Information Systems (GIS) ........................................ 3
GEOG-128* Advanced Global Positioning Systems ......... 3
GEOG-160 Introduction to Remote Sensing ................. 4
GEOG-162 Maps and Cartography .............................. 3

total minimum required units 32

*Certain courses required for this certificate have recommended or prerequisite coursework that could add additional units.

Certificate of achievement - Civil drafting, CAD

This certificate program prepares students for further study or an entry-level training position in jobs requiring them to prepare and revise technical drawings used in civil engineering and surveying.

To earn a certificate of achievement, students must complete each of the required courses with a “C” grade or higher. Some courses are not offered every term so please consult with the program director for assistance in scheduling classes.

required courses
COMSC-100L Introduction to Computer Software ........... 1
CONST-114 Blueprint Reading ................................... 2
GEOG-127 Introduction to Global Positioning Systems ........ 3
MATH-121 Plane Trigonometry .................................. 3

plus at least 3 units from:
ARCHI-119 Introduction to Technical Drawing .............. 3
ENGIN-119 Introduction to Technical Drawing .............. 3

plus at least 4 units from:
ARCHI-126 Computer Aided Design and Drafting - AutoCAD .................................................. 4
ENGIN-126 Computer Aided Design and Drafting - AutoCAD .................................................. 4

plus at least 4 units from:
ARCHI-226 Computer Aided Drafting Design, Advanced Concepts - AutoCAD .................................. 4
ENGIN-226 Computer Aided Drafting Design, Advanced Concepts - AutoCAD ............................. 4

plus at least 6 units from:
ARCHI-135 Digital Tools for Architecture I ................. 3
ARCHI-136 Digital Tools for Architecture II ................. 3
CONST-116 Plane Surveying .................................... 3
ENGIN-123 Principles of Civil Drafting ....................... 3
ENGIN-140* Plane Surveying .................................... 3
GEOG-125 Introduction to Geographic Information Systems (GIS) ........................................ 3
GEOG-128* Advanced Global Positioning Systems ......... 3
GEOG-160 Introduction to Remote Sensing ................. 3
GEOG-162 Maps and Cartography .............................. 3

total minimum required units 27

*Certain courses required for this certificate have recommended or prerequisite coursework that could add additional units.

Certificate of achievement - Mechanical design drafting technology

The Engineering Department has placed this certificate on INACTIVE status during the completion of necessary curriculum work. While the necessary curriculum evaluation and revision is underway, this degree has been removed from the catalog. The department anticipates that the curriculum revisions needed for a viable program will be completed within two years. Students should be advised that it may not currently be possible to complete the requirements for this degree, although coursework transferred from other schools may allow a student to complete the requirements for the degree or certificate. Additionally, students can request course substitutions from the program director and any student either in progress or starting this program should contact the engineering technology program director for advisement.

Certificate of achievement - Mechanical drafting, CAD

The Engineering Department has placed this certificate on INACTIVE status during the completion of necessary curriculum work. While the necessary curriculum evaluation and revision is underway, this degree has been removed from the catalog. The department anticipates that the curriculum revisions needed for a viable program will be completed within two years. Students should be advised that it may not currently be possible to complete the requirements for this degree, although coursework transferred from other schools may allow a student to complete the requirements for the degree or certificate. Additionally, students can request course substitutions from the program director and any student either in progress or starting this program should contact the engineering technology program director for advisement.

Certificate of accomplishment - Computer aided drafting and digital media for engineering and architecture

Drafters create drawings and plans to specify dimensions, materials and processes for the finished product. Such drawings and plans provide guidance to those working to complete the finished product. Drafters also render drawings from blueprints, sketches, and photos and other sources which show the interplay of components and their relationships to one another, and to provide guidance for final assembly.
To earn a certificate of accomplishment, students must complete each of the required courses with a “C” grade or higher. Some courses are not offered every term. Consult with the program director for assistance in scheduling classes.

**ENGIN-119 Introduction to Technical Drawing**

3 units SC
- 36 hours lecture/72 hours laboratory per term
- Note: Same as ARCHI-119. For students with no previous drafting experience. Credit by examination option available. These hours may be offered as face to face lab or online lab; see schedule of classes for specific requirements.

This course is an introduction to the use of technical drawing tools, and computers to produce technical lettering and line work, geometric construction, sketching and shape description, orthographic projection, dimensioning, section views, auxiliary views and pictorials. Introduction to the use of computers to produce technical drawings. CSU

**ENGIN-120 Engineering Drawing**

3 units SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: MATH-114 and ENGIN-119 or equivalents

This course is an introduction to orthographic, oblique and perspective projections. Topics include relationships of points, lines and planes: auxiliary views, dimensioning, tolerancing, threads and fasteners. Students will be introduced to solid modeling with computer-aided design (CAD) software and the use of computers to produce engineering drawings as well as design and graphics as a form of communication in the engineering field. CSU, UC

**ENGIN-121 Engineering Drawing/Descriptive Geometry**

3 units LR
- 36 hours lecture/72 hours laboratory per term
- Recommended: ENGIN-120 or equivalent and MATH-121 or equivalent (may be taken concurrently)

Space relationships of points, lines, and surfaces; double auxiliary, curved and warped surfaces; intersections, developments, vector analysis, introduction to three-dimensional CAD systems and solid modeling to solve descriptive geometry problems, engineering applications, graphical mathematics. CSU, UC

**ENGIN-123 Principles of Civil Drafting**

3 units LR
- 36 hours lecture/72 hours laboratory per term
- Recommended: ENGIN-111 (may be taken concurrently), ENGIN-119 and ENGIN-126 or equivalents

Introduction to civil drafting as it relates to topographic maps and charts. Course covers reading, interpreting and constructing a variety of maps used for civil engineering such as surveyor maps, plat and plot maps, and aerial maps. Students will use both manual and computer methods for drafting of maps. CSU
ENGIN-126  Computer Aided Design and Drafting—
AutoCAD
4 units  SC
• 54 hours lecture/90 hours laboratory per term
• Recommended: ARCHI-119 or ENGIN-119 or equivalent
• Note: Same as ARCHI-126. Students may petition
to repeat this course when software or hardware is
changed. Credit by examination option available.
Introductory course covering the computer application
AutoCAD as it relates to the creation of technical drawings.
Course covers two dimensional computer aided drafting
of objects in orthographic projection. Hands-on training
utilizing a comprehensive overview of the software pack-
age and its applications in architectural drafting is stressed.
Students are recommended to have a basic knowledge of
technical drawing. CSU, UC (credit limits may apply to UC -
see counselor

ENGIN-129  Introduction to SolidWorks
4 units  SC
• 54 hours lecture/90 hours laboratory per term
• Note: Students may petition to repeat this course when
software or hardware is changed.
Course will cover 2D and 3D computer aided drafting
principles using feature manipulation tools, dimension-
ing, sections, swept and loft features, as well as assembly
drawing. Previous knowledge of SolidWorks software is not
required. CSU

ENGIN-130  Energy, Society, and the Environment
3 units  SC
• 54 hours lecture/36 hours laboratory per term
• Recommended: Eligibility for ENGL-122 and MATH-090
or equivalents
An introduction to the sources, uses, economics, and envi-
rонmental impacts of energy in contemporary society. The
role of non-renewable and renewable energy systems and
technologies in creating and maintaining sustainable energy
systems is emphasized. CSU, UC

ENGIN-135  Programming for Scientists and
Engineers
4 units  LR
• 54 hours lecture/72 hours laboratory per term
• Recommended: MATH-192 and eligibility for ENGL-122
or equivalents
An introduction to programming in C/C++ for engineers
and scientists. Procedural and object- oriented program-
ing applications encompassing data structures, use of
computer software and programming techniques to solve
various numerical problems are covered. CSU, UC

ENGIN-136  Computer Programming for Engineers
Using MATLAB
4 units  LR
• 54 hours lecture/72 hours laboratory per term
• Prerequisite: MATH-192 or equivalent
• Recommended: MATH-193 or equivalent (may be taken
concurrently)
• Note: This course requires 72 hours of laboratory (lab).
These hours may be offered as face to face lab, online
lab, or lab hours by arrangement; see schedule of class-
es for specific section requirements.
Methods of problem solving and data visualization in
engineering and science using the MATLAB programming
language will be introduced. Topics include numerical inte-
gration and differentiation, solution of systems of equations,
regression, roots of equations and solution of differential
equations. Programming with functions, local and global
variables, file input and output, data formatting, induction,
itereation, recursion and elements of object oriented pro-
gramming will also be covered. CSU, UC

ENGIN-140  Plane Surveying
3 units  SC
• 54 hours lecture/54 hours laboratory per term
• Prerequisite: MATH-121 or equivalent
• Note: Same as CONST-116
This course covers the principles and practices of survey-
ing including measurement of distances, directions and
elevations; measuring standards; introduction to electronic
measurements and metric units; calibration, systematic and
random-error analysis; traverse calculations; use and care of
surveying instruments including tapes, transits, and levels;
GPS measurements; map reading; horizontal and vertical
curves and mapping. CSU, UC

ENGIN-150  Topics in Engineering
.3-.4 units  SC
• Variable hours
A supplemental course in engineering designed to provide
a study of the current concepts and problems in engineer-
ing. Specific topics will be announced in the schedule of
classes. CSU

ENGIN-160  Introduction to Manufacturing
3 units  LR
• 54 hours lecture/54 hours laboratory per term
• Recommended: ENGIN-120 and ENGIN-121 or
equivalents
This course will cover production and manufacturing
techniques of metals, alloys and polymers. Students will
learn techniques of casting, forming, forging, extrusion
and sintering of materials. Blueprint reading, the use of
measuring instruments and gauges, layout techniques and
material removal using machine tools will also be covered.
Instruction will include the set-up and operation of machine
shop equipment. Principles of quality control and quality
assurance with special emphasis on ANSI Y14 standards
will be covered. CSU
ENGIN-165 Manufacturing Processes: Material Machining I
2 units LR
- 18 hours lecture/54 hours laboratory per term
This course will cover the practical and theoretical aspects of machine tool processes. Students are instructed in the correct and safe use of hand tools; grinders; measuring instruments, gauges, layout and inspection techniques and metals identification. Instruction will include the set-up and operation of the drill press, band saw, pedestal and horizontal grinder; lathes and milling machines. CSU

ENGIN-166 Manufacturing Processes: Material Machining II
2 units LR
- 18 hours lecture/54 hours laboratory per term
This course will include in-depth coverage of precision measuring and inspection practices. Topics include advanced lathe and vertical milling machine operations; surface grinder, thread cutting, boring on lathes and vertical milling machines. Techniques of machining ferrous and non-ferrous metals, plastics and ceramics will be covered. CSU

ENGIN-170 Introduction to Machine Technology
4 units LR
- 54 hours lecture/54 hours laboratory per term
- Formerly MATEC-120
This course will cover the practical and theoretical aspects of machine tool processes. Students are instructed in the correct and safe use of hand tools, deburring equipment, basic blueprint interpretation, measuring instruments and gauges, layout and inspection techniques, and metals identification. Instruction will include the set-up and operation of the drill press, band saw and pedestal grinder, and types of uses of abrasives. Students are introduced to simple lathe and milling machine operation and set-ups. CSU

ENGIN-171 Machine Processes II
3 units LR
- 54 hours lecture/72 hours laboratory per term
- Recommended: ENGIN-170 or equivalent
- Formerly MATEC-121
This course will include in-depth coverage of precision measuring and inspection practices, advanced lathe and vertical milling machine operations and surface grinder operation. Thread theory, thread nomenclature and thread forming methods, and boring on lathes and vertical milling machines will be covered. Selection of metals and introductory metallurgy will be presented. Basic principles of Computer Numerical Control (CNC) machining will be introduced. CSU

ENGIN-172 Introduction to Computer Numerical Control
3 units LR
- 18 hours lecture/90 hours laboratory per term
- Recommended: ENGIN-170 or equivalent
- Note: Recommended: 1) Experience in lathe and vertical milling machines and their use; 2) Experience in using precision measuring tools
- Formerly MATEC-222
This course introduces students to Computer Numerical Control (CNC) machining, including Computer Aided Design (CAD), Computer Aided Machining (CAM), software and G-code machine languages. Students will learn the design processes, geometry creation and 3D modeling needed for part creation. Students will take CNC programs and learn how to set up and operate CNC machines to fabricate parts. CSU

ENGIN-226 Computer Aided Drafting Design, Advanced Concepts - AutoCAD
4 units SC
- 54 hours lecture/90 hours laboratory per term
- Recommended: ENGIN-126 or ARCHI-126 or equivalent
- Note: Same as ARCHI-226. Students may petition to repeat this course when software or hardware is changed.
Course is designed for students with previous knowledge and experience in using AutoCAD. Course covers (1) surface/wireframe and solid modeling features of AutoCAD for 3-dimensional modeling and photo realistic rendering, (2) customization and optimal application of AutoCAD and (3) utility options for presentation purposes and project management. CSU, UC (credit limits may apply to UC - see counselor)

ENGIN-229 Advanced Concepts in SolidWorks
4 units SC
- 54 hours lecture/90 hours laboratory per term
- Recommended: ENGIN-119 and ENGIN-129 or equivalents
- Note: Students may petition to repeat this course when software or hardware is changed.
This course is designed for students with previous knowledge and experience in using SolidWorks. Students will continue to learn advanced techniques for capturing design intelligence. Some other aspects of mechanical design, such as assembly management techniques, creating models via surfacing and style features and working with skeletons will be introduced. Troubleshooting and managing existing models by tackling references and interdependencies is a driving consideration in the course. Upon completion of the course, students will exhibit a demonstrated competence in a comprehensive range of SolidWorks skills and techniques. CSU
ENGIN-230 Introduction to Circuits and Devices

4 units LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: MATH-193 or equivalent and PHYS-230 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent

The course covers the subjects of electrical quantities, Ohm's law, Kirchhoff's network theorems, AC and DC circuit analysis, transient and steady state response of circuits, digital circuits, solid state devices, magnetism and magnetic circuits. CSU, UC

ENGIN-240 Properties of Engineering Materials

4 units LR
- 54 hours lecture/54 hours laboratory/18 hours laboratory by arrangement per term
- Prerequisite: CHEM-120 and PHYS-130 or equivalents

The study of properties of engineering materials as related to their atomic, microscopic, and macroscopic structures. CSU, UC

ENGIN-255 Statics

3 units LR
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: PHYS-130 or equivalent and MATH-193 or equivalent
- Recommended: ENGIN-135 or ENGIN-136 or equivalent and eligibility for ENGL-122 or equivalent

Study of the effects of concentrated and distributed forces on the equilibrium of rigid bodies, structures, beams, flexible cables and fluid statics. Applying the method of sections and free body diagrams to solve truss problems. The study of wedges, screws, bearings, brakes and other problems involving friction. Virtual work and potential energy methods in the determination of equilibrium conditions in machines and structures. CSU, UC

ENGIN-256 Dynamics

3 units LR
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: PHYS-130 or equivalent and MATH-193 or equivalent
- Recommended: ENGIN-255 or equivalent and eligibility for ENGL-122 or equivalent

This course introduces students to the principles of Newtonian Dynamics in one, two, and three dimensional motions. Students will study the kinematics and kinetics of a single particle, systems of particles, and rigid bodies. This will include conservation laws, work, energy, impulse and impact. The student will also be presented with an introduction to free and forced vibrations. CSU, UC

ENGIN-257 Statics and Strength of Materials

3 units LR
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: PHYS-130 or equivalent
- Co-requisite: MATH-294 or equivalent (may be taken previously)
- Recommended: MATH-194 or equivalent

A study of mechanics and strength of materials, including equilibrium of particles and rigid bodies, analysis of truss and frame structures, concepts of stress and strain, linear elastic materials, axially-loaded structural elements, bending and torsion in circular and hollow shafts. Deflection of beams, buckling of columns and energy methods are also discussed. CSU, UC

ENGIN-258 Introduction to Solid Mechanics

3 units LR
- 54 hours lecture/18 hours laboratory per term
- Prerequisite: ENGIN-255 or equivalent
- Co-requisite: MATH-294 or equivalent (may be taken previously)

This course covers the fundamentals of solid mechanics. Definitions of stress and strain and their relationship in two and three dimensional problems are presented. Stress and strain transformations are discussed. Equations for torsion and bending of bars are derived and deflection of beams and shafts are studied. Buckling of columns and energy methods are also covered. CSU, UC

ENGIN-298 Independent Study

.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.

An opportunity for advanced students to study special interests under the direction of the faculty. CSU

ENGIN-299 Student Instructional Assistant

.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU
ENGINEERING TECHNOLOGY - ENGTC

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

ENGTC-175 Introduction to Industrial Maintenance
3 units  SC
• 18 hours lecture/108 hours laboratory per term
This course will cover the practical and theoretical aspects of industrial maintenance. Students are instructed in the correct and safe use of hand tools, rules, protractors, calipers, digital calipers, micrometers, precision measuring tools, basic blueprint interpretation, rigging and lifting, ladders, basic hydraulic principles, and predictive and preventative maintenance. CSU

ENGTC-176 Shop and Field Maintenance
3 units  SC
• 18 hours lecture/108 hours laboratory per term
This course will prepare students for careers in industrial maintenance by increasing their skills and knowledge through in-depth coverage of lubrication, bearings, flexible belt drives, mechanical drives, vibration, and rotating equipment shaft alignment. An introduction to electricity and pneumatic principles will also be covered. CSU

ENGTC-210 Machine Technology I
5 units  SC
• 54 hours lecture/108 hours laboratory per term
This course provides an introduction to the operation and theory of machine tools focusing on shop safety. Topics covered include blueprint reading, and engineering drawings, precision measurement, layout, tool grinding, speed and feed calculations, drill press operation, lathe operation (turning and threading) and mill setup and operation. CSU

ENGTC-220 Machine Technology II
5 units  SC
• 54 hours lecture/108 hours laboratory per term
• Prerequisite: ENGTC-210 or equivalent
This course is a continuation of ENGTC-210 covering internal lathe operations, vertical and horizontal mill setup, operation and use of milling accessories, carbide tooling selection and geometries, and surface grinding. Students will be introduced to Geometric Dimensioning and Tolerancing (GDT) and properties of materials associated with machinability, heat treating and hardness testing. CSU

ENGLISH AS A SECOND LANGUAGE – ESL

Listed after English

ENGLISH – ENGL

Obed Vazquez, interim dean
English Division
Faculty Office Building, Room 136

Possible career opportunities
Career options that are available through the study of English include: advertising copy writer, columnist, editor, information specialist, interpreter, lawyer, lexicographer, legislative assistant, publisher, researcher, teacher, technical writer, and writing consultant. Some career options may require more than two years of college study.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree
English

Associate in arts degree - English
The English major at Diablo Valley College (DVC) offers students the opportunity to prepare for a broad range of professions through the study of language, literature, and composition, as well as the opportunity to transfer to UC, CSU, and other four year colleges and universities to earn a bachelor’s degree. The English major curriculum at DVC hones a student’s critical thinking, reasoning, and communication skills as it also prepares students pursuing careers in law, government, business, entertainment (film, television, and theater), advertising, writing, editing, and education.

DVC’s English major consists of 21 units of study. Students are required to take 6 units of core reading and composition courses, where they will develop their ability to craft clear prose through writing, reading, and research. In addition, students are required to complete 9 units of core genre and survey courses, and 6 units of specialized literature and writing courses, thereby developing individual interests and breadth of knowledge.
The DVC English major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.

To earn an associate in arts degree with a major in English, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

<table>
<thead>
<tr>
<th>Group 1: Core reading and composition courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL-122* Freshman English: Composition and Reading</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-123* Critical Thinking: Composition and Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-126* Critical Thinking: The Shaping of Meaning in Language</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 2: Core genre</th>
<th>units</th>
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<tbody>
<tr>
<td>ENGL-150 Introduction to Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-151 The Short Story</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-153 Contemporary Poetry</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-180* Literature of the Drama</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 3: Core survey</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL-154 Shakespeare and His World</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-252 Early English Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-253 Survey of Late English Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-262 Survey of American Literature I (First Contact-1865)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-263 Survey of American Literature</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Group 4: electives - Specialized literature and writing</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL-152 The Short Film</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-162 Language, Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-163 Asian American Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-164 Native American Literatures</td>
<td>3</td>
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<tr>
<td>ENGL-166 African American Literature</td>
<td>3</td>
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<tr>
<td>ENGL-167 Latin American Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-168 The Literatures of America</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-170 World Mythology</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-172 The Bible as Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-173 Introduction to Gay and Lesbian Multicultural Voices in Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-175 Science Fiction and Fantasy Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-176 The Graphic Novel as Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-177 Children's Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

| ENGL-190 Multicultural Literature by American Women | 3     |
| ENGL-222* Creative Writing | 3     |
| ENGL-223 Short Story Writing | 3     |
| ENGL-224 Poetry Writing | 3     |
| ENGL-225* Writing About Cultural Identity in America | 3     |

**total minimum required units** 21

*The above courses have specific prerequisites. See course description for details.

**Students taking English 180 may need to take one more course from the above list as Literature of the Drama does not articulate with some university English programs. If so, 3 units earned from English 180 will apply to Group 4: Electives.

<table>
<thead>
<tr>
<th>ENGL-090 Introduction to College English</th>
<th>2.5 units</th>
<th>SC</th>
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</thead>
<tbody>
<tr>
<td>• Non degree applicable</td>
<td>9 hours lecture per term</td>
<td></td>
</tr>
<tr>
<td>• Recommended: Eligibility for ENGL-098 or equivalent</td>
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</table>

This supplemental course is designed to provide instruction in grammar, syntax, usage, punctuation and the writing process at an introductory level. The course will also cover the reading strategies necessary to write well. Weekly writing assignments will enable students to practice using the skills learned in class. This beginning course is intended to prepare students to succeed in basic skills English courses.

<table>
<thead>
<tr>
<th>ENGL-091 Special Studies in Reading and Writing</th>
<th>1 unit</th>
<th>P/NP</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Non degree applicable</td>
<td>9 hours lecture/27 hours laboratory per term</td>
<td></td>
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<tr>
<td>• Note: Sections for ESL students available</td>
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</tbody>
</table>

A series of short-term, one-unit mini-courses which develop specific skills in reading and writing. Courses include reading comprehension, effective reading strategies, spelling/vocabulary, sentence structure, and punctuation.

<table>
<thead>
<tr>
<th>ENGL-092 College Study Skills</th>
<th>2 units</th>
<th>P/NP</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Non degree applicable</td>
<td>36 hours lecture per term</td>
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</table>

This course is designed to improve the students’ study skills: goal setting; time management; note taking; reading comprehension; reading strategies for textbooks; main idea recognition; underlining and other text marking; concentration and memory; effective writing; test taking strategies. Students also determine their preferred learning style and discover ways to use that style most efficiently. Practice exercises will include readings from a variety of college subjects.
ENGL-095  Studies in Writing
.5-6 units  SC
• Non degree applicable
• Variable hours
• Recommended: ENGL-096 and ENGL-098 or equivalent recommendation from the assessment process
• Formerly ENGL-105
This course focuses on developing students’ ability to write at the college level. Depending on the topic, the course may cover such diverse areas as the writing process, developing a sense of voice in writing, critical analysis of student writing, identifying the organizational structures of various essays, and close analysis of fiction and nonfiction.

ENGL-096  Introduction to College Reading and Study Skills
3 units  SC
• Non degree applicable
• 54 hours lecture/18 hours laboratory per term
• Recommended: Reading/writing assessment process or ESL-096A or equivalent
• Note: ESL students are strongly encouraged to follow the ESL assessment process. ESL-096A is recommended for ESL students.
This course is designed for students who need work in basic reading and study skills required for college. Writing will be an essential component of this course. Students will learn to identify main ideas and supporting details and to determine methods of organization and relationship of ideas. A primary aim is to increase students’ enjoyment of reading as well as their ability to comprehend, interpret, and remember what they read. Students will practice using writing to respond to and demonstrate their understanding of what they read. The course will also emphasize effective study skills and vocabulary development.

ENGL-098  Introduction to College Writing
3 units  SC
• Non degree applicable
• 54 hours lecture/18 hours laboratory per term
• Recommended: Reading/writing assessment process or ESL-096A or equivalent
• Note: ESL students are strongly encouraged to follow the ESL assessment process. ESL-096A is recommended for ESL students.
This course is designed to help students express their ideas in writing, and gain confidence in writing essays. Students will compose essays for an academic audience and learn to write clear, complete and varied sentences and coherent paragraphs. Students will read and learn to analyze a variety of short texts in order to develop ideas for writing. Students will also become familiar with the steps of the writing process: drafting, revising, editing, and proofreading. An additional goal is for students to learn basic rules of grammar, and punctuation.

ENGL-099  English Grammar and Usage
3 units  SC
• Non degree applicable
• 54 hours lecture per term
• Formerly ENGL-110
This course provides intensive instruction on the rules of grammar, punctuation, spelling and their application in writing. Students will learn to recognize grammatical errors in their writing, to make informed judgments about the style and syntax of the sentences they write, to reduce the number of misspelled words, and to use a broader vocabulary in their writing. The course is intended to prepare students for more advanced English classes and to increase their knowledge of the fundamentals of English.

ENGL-116  College Reading Development
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-096 or reading/writing assessment process or equivalent
• Note: Students may apply either ENGL-116 or 118 to the associate degree, but not both courses
This course is designed to develop strategies for reading a variety of college-level materials. Students will learn ways to interact with what they read in order to increase appreciation as well as comprehension. The course will cover close analysis of reading, flexible approaches to reading, vocabulary development, and study skills. The central focus throughout the course will be on reading comprehension as an active process, with written response as the primary method for evaluating and analyzing readings.

ENGL-118  College Writing Development
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-098 or reading/writing assessment process or equivalent
• Note: Students may apply either ENGL-116 or 118 to the associate degree, but not both courses
This course helps students to improve their expression of ideas in college-level expository essays. Through continual writing practice, students will improve their skills in observation, fluency, organization, and revision, as well as other parts of the writing process. Students will learn to analyze a variety of texts with an emphasis on nonfiction.
This course engages students regularly in the writing and reading process, requiring a substantial amount of reading of significant literature. Students will apply disciplined thought to language in order to comprehend and analyze college-level readings and to compose college-level essays that are coherent, detailed, and free of serious error. In their essays, students will use a variety of types of support including primary and secondary research. Students will understand and employ varied rhetorical strategies used by accomplished writers. CSU, UC

ENGL-123 Critical Thinking: Composition and Literature
3 units LR
- 54 hours lecture per term
- Prerequisite: ENGL-122 or equivalent

ENGL-123 is a continuation of ENGL-122 emphasizing the study of poetry, fiction, and drama. The course is designed to encourage continued improvement in essay composition through a focus on critical thinking about literary works. The course will increase understanding of the creation of aesthetic meaning and the use of symbolic forms in language and thought; and introduce students to several literary genres in the context of culture. CSU, UC

ENGL-124 The Nature of Language: An Introduction To Linguistics
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course introduces students to the study of formal, psychological, and socio/cultural properties of language. Students will learn the analysis, description, and functions of language in relation to culture, society, and personality. CSU, UC

ENGL-126 Critical Thinking: The Shaping of Meaning in Language
3 units LR
- 54 hours lecture per term
- Prerequisite: ENGL-122 or equivalent

This course will focus on the development of logical reasoning, analysis of primarily expository and persuasive texts, and analytical and argumentative writing skills. It is designed to develop critical thinking, reading, and writing skills beyond the level expected in ENGL-122. This course will concentrate on how expository texts make their arguments as demonstrated through higher levels of critical thinking such as analysis, synthesis and evaluation. CSU, UC

ENGL-130 Introduction to Technical Writing
3 units SC
- 54 hours lecture per term
- Recommended: ENGL-122 or equivalent

This course is an introduction to writing in the technical environments of science and industry, with an emphasis on selecting appropriate evidence, and on understanding and employing various levels of technical vocabulary and abstraction. Strategic use of visual support, technical metaphor, and application of communication principles to technical settings are also addressed. CSU

ENGL-140 Tutor Training
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course introduces students to the basic principles and methods of tutoring, including but not limited to the tutoring sequence, the Socratic method of questioning, communication skills, and learning theory. Students will receive instruction on how to work with tutees who have difficulties comprehending reading, developing writing and utilizing study skills with the intent of making those tutees independent learners. CSU

ENGL-150 Introduction to Literature
3 units SC
- 54 hours lecture per term
- Recommended: ENGL-122 or equivalent

This course will focus on representative works from the four major genres of literature (poetry, drama, the short story, and the novel). This course will teach students to recognize the distinguishing elements of each literary form and develop competency in the methods used to analyze all literature. The choice of texts will reflect the historical development of these genres in order to enhance students’ appreciation of the extent to which imaginative literature reflects its historical moment and is shaped by expressive and visual arts of the time. CSU, UC

ENGL-151 The Short Story
3 units SC
- 54 hours lecture per term
- Recommended: ENGL-122 or equivalent

This course is an introduction to the short story: themes, forms, history of the form, individual writer’s techniques. Students read and discuss short stories and become more independent critics of them. In addition, students in the course will examine a variety of critical approaches to literature, understand the significance of these perspectives, and apply this information in order to develop a deeper understanding of the text. CSU, UC
### ENGL-152  The Short Film
3 units  SC
- 54 hours lecture per term
- **Recommended: ENGL-122 or equivalent**

This survey course explores the history, nature, and structure of the short narrative, documentary, and experimental film. The course compares and contrasts literature to film, noting how each medium deals with theme and structure. Many films from the DVC collection, including some showing the lives and stories of members of American subcultures and cultures around the world, along with new releases from major short-films distributors, will be viewed, discussed and written about. CSU, UC (credit limits may apply to UC - see counselor)

### ENGL-153  Contemporary Poetry
3 units  SC
- 54 hours lecture per term
- **Recommended: Eligibility for ENGL-122 or equivalent**

This course focuses on the reading, critical study, critical analysis, and discussion of contemporary poetry. Postmodern American poetry is emphasized, although consideration will also be given to contemporary world poetry and other poetry written in English. Earlier traditions, such as modernism, will be briefly discussed. Historical, social, cultural, and psychological contexts will be provided. Consideration will be given to the forms, functions, and definitions of the poetry studied. Students should reach a heightened awareness and understanding of language and artistic excellence. CSU, UC

### ENGL-154  Shakespeare and His World
3 units  SC
- 54 hours lecture per term
- **Recommended: ENGL-122 or equivalent**

This course will focus on the language, structure, characterization, and philosophy of Shakespeare’s plays. The historical, social, and artistic forces which helped to shape his works during the Elizabethan and Jacobean ages will be discussed. The relationship between Shakespeare’s work as literature will be examined by close analysis, and as performing arts, experienced in theater, film, opera, or television. CSU, UC

### ENGL-155  Studies in Literature
.5-3 units  SC
- Variable hours
- **Recommended: ENGL-122 or equivalent**

This course focuses on the reading, critical study, critical writing and discussion of a special literature. Consideration will be given to the literature’s forms, functions, and definitions. Also of concern will be the literature’s significance in terms of historical, social, cultural, and psychological contexts. CSU

### ENGL-162  Language, Literature and Culture
3 units  SC
- 54 hours lecture per term
- **Recommended: Eligibility for ENGL-116/118 or equivalent**

This course examines language, literature and the arts from a multi-cultural context. Students will read stories, drama, poetry and essays that reflect a broad range of cultural viewpoints; they will observe and analyze relevant print and visual media; and they will compare and consider such artistic forms as architecture, music, fashion and painting in the context of compared cultures. Attention will be devoted to understanding the linguistic or attitudinal challenges posed by cross-cultural communication. The course will be helpful to American-born students seeking a wider cultural perspective and to International students and other advanced ESL students in their acculturation and language development efforts. CSU, UC

### ENGL-163  Asian American Literature
3 units  SC
- 54 hours lecture per term
- **Recommended: ENGL-122 or equivalent**

This course introduces students to a variety of literary works from the Asian American culture, which are significant in illuminating the Asian American cultural experience. Readings are chosen for their literary, historical, cultural, philosophical and psychological importance. CSU, UC

### ENGL-164  Native American Literatures
3 units  SC
- 54 hours lecture per term
- **Recommended: ENGL-122 or equivalent**

This course presents the literary traditions and cultures of Native Americans, and through the study of various oral and written literary works (such as songs, myths, folktales, oratories, autobiographies, films, plays, poetry and prose) will examine issues important to Native peoples, such as cultural identity, language, self-determination. CSU, UC

### ENGL-166  African American Literature
3 units  SC
- 54 hours lecture per term
- **Recommended: ENGL-122 or equivalent**

This course is a study of the major works of fiction and poetry by black writers in Africa and America, spanning three hundred years. Students will gain an awareness of main themes, concepts, and characteristics of the literature. Emphasis is on the development of concepts and skills that will enable the student to study the literature, make comparisons, and draw conclusions about the nature of its development, its origin, and the influence of rhetoric, religion, philosophy, history, music, or other arts or literature. CSU, UC
ENGLISH

ENGL-167  Latin American Literature
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
The course focuses on the literature of Latin American cultures. Through analysis of poetry, fiction, drama, music and film, students will explore political, social, historical, and psychological elements that comprise the voices of Latin Americans. CSU, UC

ENGL-168  The Literatures of America
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
This course presents literature and related arts by and about gay men and lesbians. The works studied represent a wide variety of racial, cultural and socio-economic groups. This course presents literature and related arts by and about gay men and lesbians from Hispanic/Latino, African American, European American, Asian American, Native American cultural, ethnic, and a variety of socio-economic groups. Novels, short stories, poems and plays are presented with a focus on literary elements as well as historical, social and psychological contexts. Through an understanding of the historical, social, and psychological forces shaping the literature and related arts, students will reach a heightened awareness of gay and lesbian culture. Through critical analysis of these works, students will also reach a greater understanding of artistic excellence in general. CSU, UC

ENGL-170  World Mythology
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
This course explores myth as a vital part of human experience, individual and collective, past and present. Myths from a wide range of cultures (including Native American, African, Asian, Middle Eastern and European) are examined in terms of their appearance in folklore, ritual, literature and the arts, and are compared with regard to their thematic content and the beliefs and values they reflect. CSU, UC

ENGL-172  The Bible As Literature
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
Students read the Hebrew scriptures (Old Testament) and the New Testament as literature, studying the historical, intellectual, and spiritual environments in which the texts were composed. Major themes and characters are given close attention, as is the development of the canon. Literary genres such as poetry, essays, letters, and epics in scripture are compared with those genres found in other world literatures. CSU, UC

ENGL-173  Introduction to Gay and Lesbian Multicultural Voices in Literature
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
This course presents literature and related arts by and about gay men and lesbians. The works studied represent a wide variety of racial, cultural and socio-economic groups. This course presents literature and related arts by and about gay men and lesbians from Hispanic/Latino, African American,
ENGL-180  Literature of the Drama
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
This course examines representative works in dramatic literature and explores how these works are transformed by the process of filming or staging the play. Through reading, performance, writing, scene work, discussion, and, in some instances, interacting with professionals in the field, students will reach greater appreciation for major elements of drama like plot, characterization, theme, setting, and language. Reflecting on age-old themes and complex characters will give students new insights into their own values, choices, role models, and cultural heritage. CSU, UC

ENGL-190  Multicultural Literature by American Women
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
This course presents literature and related arts by and about women from at least three of the following cultural, ethnic, and racial groups: Hispanic Latina American, African American, European American, Asian American, and Native American cultural, ethnic and racial groups. Under scrutiny will be women's prescribed role in society as well as the language, ideology, substance and form of the artistic renderings. Through a study of the artist's work and an understanding of the historical, social, and psychological forces shaping the work, students should reach a heightened awareness of women's contributions and struggles in our society as well as in others. Through criticism of and writing about the art, the students should also reach a greater understanding of the genre. CSU, UC

ENGL-222  Creative Writing
3 units  SC
• 54 hours lecture per term
• Prerequisite: Eligibility for ENGL-122 or equivalent
Students will analyze the varied creative writing techniques of selected authors and present original writing for discussion and criticism by the class and the instructor. CSU, UC (credit limits may apply to UC - see counselor)

ENGL-223  Short Story Writing
3 units  SC
• 54 hours lecture per term
• Prerequisite: Eligibility for ENGL-122 or equivalent
In-depth study of the elements of the short story. Students write original stories for discussion and criticism by both class and instructor. CSU, UC (credit limits may apply to UC - see counselor)

ENGL-224  Poetry Writing
3 units  SC
• 54 hours lecture per term
• Prerequisite: Eligibility for ENGL-122 or equivalent
This course is an in-depth study of the elements of poetry. Students write original poems for discussion and criticism by both class and instructor. CSU, UC (credit limits may apply to UC - see counselor)

ENGL-225  Writing About Cultural Identity in America
3 units  SC
• 54 hours lecture per term
• Prerequisite: Eligibility for ENGL-122 or equivalent
In this expository writing course, students will read and write autobiography, biography, and creative nonfiction. They will develop skills related to research techniques and interviewing and present original prose writing (approximately 6000 words) for informal discussion and criticism. Students will read works in these genres by American authors with particular attention to multicultural groups. CSU, UC

ENGL-226  Literary Nonfiction
3 units  SC
• 54 hours lecture per term
• Prerequisite: Eligibility for ENGL-122 or equivalent
Students study classic and contemporary narrative nonfiction writing, specifically memoir, travel, nature and personal essays. Students write original, nonfiction essays that employ fictional and literary techniques. Students present their writing to other students and the instructor for feedback and revision. CSU, UC

ENGL-252  Early English Literature
3 units  SC
• 54 hours lecture per term
• Prerequisite: ENGL-122 or equivalent
Students read characteristic and significant British literature from its beginnings to Johnson; examine the evolution of style and manner in the written form of the language; appreciate the influence of the cultural heritage upon native art forms, ideas and institutions; and generally learn to read literature more skillfully. The course relates the literature to historical and cultural developments as expressions of periods and their styles and consciously relates that to at least one art - painting, music, or architecture. C-ID ENGL 160, CSU, UC
ENGL-253  Survey of Late English Literature
3 units  SC
• 54 hours lecture per term
• Prerequisite: ENGL-122 or equivalent
This course surveys British literature of the nineteenth and twentieth centuries. Students will read poems, fiction, drama and non-fiction from the Romantic, Victorian, modern and post-colonial periods. Attention will be focused on the development of literary forms and the relation between texts and broader historical and cultural themes and conditions. Topics include representations of class, gender, race, nature, and the self; critical questions such as the function of literature, the conventions of literary periods, canonocity, and issues of literary production. Students will also examine the aesthetic and/or cultural relationship between literature and one other art such as painting, music, or architecture.
C-ID ENGL 165, CSU, UC

ENGL-262  Survey of American Literature I
(First Contact - 1865)
3 units  SC
• 54 hours lecture per term
• Prerequisite: ENGL-122 or equivalent
This course introduces students to America’s literary traditions and a wide range of writers from the origins and first contact to 1865. Some of the most significant works of American literature may be studied from the American Renaissance; Native American, African American, and Hispanic perspectives; popular culture of the time, the abolitionist movement, and the women’s rights movement. Authors may include Emerson, Boudinot, Melville, Whitman, Poe, Fanny Fern, and Harriet Jacobs. CSU, UC

ENGL-263  Survey of American Literature
3 units  SC
• 54 hours lecture per term
• Prerequisite: ENGL-122 or equivalent
Survey of major literary works produced by American writers from approximately 1865 to the present. Students read poetry, fiction, and drama by American poets, prose writers, and playwrights. Changes in literary style are closely examined and compared with corresponding changes in other art forms - painting, music, sculpture, architecture, and film - produced in America and abroad during the period. CSU, UC

ENGL-272  Early World Literature
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
Reading, presentation, and discussion of representative oral and written literature from cultures around the world from ancient times to the mid-seventeenth century in modern English translations. CSU, UC

ENGL-273  Late World Literature
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
Reading, presentation and discussion of representative works of literature from cultures around world from the seventeenth century to modern times in English translation.
CSU, UC

ENGL-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to study special interests under the direction of the faculty. CSU

ENGLISH AS A SECOND LANGUAGE – ESL

Obed Vasquez, interim dean
English Division
Faculty Office Building, Room 136

ESL-067  Introduction to College English Skills
2 units  P/NP
• Non degree applicable
• 18 hours lecture/54 hours laboratory per term
• Note: ESL assessment process before entering is recommended
This course is designed for students for whom English is a second language at the introductory level who need to improve their speaking, listening, reading and writing skills to prepare them for entry into more advanced courses in the ESL program. The goals of the course are to develop and improve English language skills and to introduce students to the college environment.

ESL-072  Pronunciation/Listening Skills
2 units  P/NP
• Non degree applicable
• 18 hours lecture/54 hours laboratory per term
• Recommended: ESL-086 and ESL-088 or equivalents
This course is designed for ESL or international students who need instruction in improving listening comprehension and oral communication skills. Students will learn to perceive a variety of speech patterns and listening cues and a variety of speech forms, including conversations, directions, and lectures. Students will practice the sounds and rhythms of American English and improve their fluency by speaking in a variety of situations.
ESL-076  Intermediate Reading and Comprehension Skills
3 units  SC
- Non degree applicable
- 54 hours lecture/18 hours laboratory per term
- Recommended: ESL-067 or equivalent
- Note: Each section has a weekly 1 hour scheduled study group. Students must check the schedule of classes and reserve the associated time.

This is an intermediate-level course designed for students for whom English is a second language who need instruction in reading comprehension and study skills to enhance their performance in future college courses. Students will continue to develop basic reading comprehension skills such as identifying main ideas in paragraphs, understanding paragraph organization, and using context clues to understand new vocabulary.

ESL-078  Intermediate Writing Skills
3 units  SC
- Non degree applicable
- 54 hours lecture/18 hours laboratory per term
- Recommended: ESL-067 or equivalent
- Note: Each section has a weekly 1 hour scheduled study group. Students must check the schedule of classes and reserve the associated time.

This course is designed for ESL students at the intermediate level who need to improve their ability to write correct sentences and who are ready to begin writing paragraphs and narratives. Coursework will include work on grammar, usage, parts of speech, punctuation, and idioms. Writing assignments will include sentences, paragraphs and narratives.

ESL-081  Studies in Reading, Writing, and Listening/Speaking Skills
2 units  SC
- Non degree applicable
- 36 hours lecture per term
- Recommended: Eligibility for ESL-086, ESL-088 or equivalent

This course is designed for students for whom English is a second language who need to improve their speaking, listening, reading and writing skills to prepare them for more advanced courses in the ESL and English programs. Topics for the course may include reading comprehension, spelling, vocabulary, sentence structure, punctuation, and conversation.

ESL-083  Language Laboratory
2 units  P/NP
- Non degree applicable
- 18 hours lecture/54 hours laboratory per term

This laboratory course is designed for ESL or international students who need to practice their reading, writing, listening and speaking skills. The course offers basic instruction on how to use word-processing, basic English language learning software, and the internet. The course offers individualized instruction to students at various skill levels, from intermediate to advanced. The course provides the setting and instructional assistance for students to practice communication skills, to get help with English class assignments, and to learn how to do basic computer research.

ESL-086  High Intermediate Reading Comprehension
3 units  SC
- Non degree applicable
- 54 hours lecture/18 hours laboratory per term
- Recommended: ESL-067 or equivalent
- Note: Each section has a weekly 1 hour scheduled study group. Students must check the schedule of classes and reserve the associated time.

This course is designed for ESL-students at the high intermediate level who need preparation for college level reading and related study skills. Class activities include a close exploration of the reading process - especially of textbook materials; development of critical thinking skills; vocabulary development; listening practice and note-taking; use of dictionary and other reference resources; academic and cultural orientation.

ESL-088  High Intermediate Writing Skills
3 units  SC
- Non degree applicable
- 54 hours lecture/18 hours laboratory per term
- Recommended: ESL-078 or equivalent
- Note: Each section has a weekly 1 hour scheduled study group. Students must check the schedule of classes and reserve the associated time.

This course is designed for ESL-students at the high intermediate level who need to improve their writing skills to prepare for college-level writing and who are ready to begin writing essays. Coursework will include instruction in sentence, paragraph and essay structure; principles of grammar and mechanics; voice-audience awareness; revising and editing techniques. Writing assignments will include paragraphs and short essays.
ESL-091  Topics in Vocational English Skills
3 units  SC  
- Non degree applicable  
- Variable hours  

ESL-091 is designed for advanced English as a second language students who may be concurrently enrolled in a course required for a certificate of achievement and accomplishment. This course will teach reading skills, vocabulary-building strategies, writing skills, listening and oral communication skills, and study skills to help students master the content and requirements in a course leading to a certificate of achievement and accomplishment. The focus of this course will change depending on the vocational area that it serves.

ESL-096A  Introduction to College Reading and Study Skills
3 units  SC  
- Non degree applicable  
- 54 hours lecture/18 hours laboratory per term  
- Recommended: ESL-086 and ESL-088 or eligibility for ESL-096A based on the results from the ESL assessment process  

This course is designed for advanced ESL students to develop the critical reading skills needed in college and the advanced writing skills needed to demonstrate their knowledge. Students will learn to identify themes and supporting details as well as to determine methods of organization and relationship of ideas in college-level materials. A primary aim is to increase students’ reading fluency and to develop their ability to comprehend, interpret and write about what they read, demonstrating relative control over conventions of written English. This course will also emphasize effective college study skills and vocabulary development.

ESL-098A  Introduction to College Writing
3 units  SC  
- Non degree applicable  
- 54 hours lecture/18 hours laboratory per term  
- Recommended: ESL-086 and ESL-088 or equivalent or eligibility for ESL-098A based on the results from the ESL assessment process  

This course is designed for advanced ESL students to gain confidence and fluency in writing essays or themes for American colleges. In this context, students will learn to write clear, complete and varied sentences and coherent paragraphs. An additional goal is for students to learn basic rules of grammar, punctuation and spelling and to be able to identify and correct errors in their writing. Students will also become familiar with the steps of the writing process: drafting, revising, editing, proofreading.

ENVIRONMENTAL SCIENCE - ENVSC

Tish Young, dean  
Physical Sciences and Engineering Division  
Physical Sciences Building, Room 263  

Possible career opportunities

Career opportunities in the field of environmental studies have grown with the increase of human population and the need to document and study the relationship between humans and nature. Environmental scientists are needed to interpret, analyze and enforce the guidelines of governmental policies. Careers include working for the government at all levels, working for companies in science and technology, as well as working in companies in energy fields. Such specialties include pollution prevention, resource conservation and environmental restoration, environmental stewardship, and newly emerging fields such as energy management technology and biodiversity preservation. Individuals studying in this field are trained to provide both public and private environmental services in a variety of settings: private business, consulting services and government agencies.

Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree

Environmental science

Associate in science degree - Environmental science

The associate in science degree in environmental science offers a distinctive program of interdisciplinary study. It is a field of inquiry exploring energy and climate systems and their complex relationships with the world’s diverse human cultures. To achieve this goal, students and faculty work together across disciplines to develop an understanding of environmental sustainability in all its dimensions. The program focuses on current environmental concerns that have far-reaching implications for the fate of human society, ecological systems, and energy diversity. This involves an integration of knowledge from a variety of disciplines to understand the function of the ecological system and human impact upon these systems at a local, regional, and global scale.

DVC environmental science students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are
advised to select either General Education Option 2 (IGETC) or Option 3 (CSU G.E.). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate in science degree, students must complete each required course with a “C” grade or higher and complete general education requirements as listed in the catalog. Degree requirements can be completed by attending classes in the day, evening, online, or a combination of those. Certain classes may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIOSC-170</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-130</td>
<td>Energy, Society, and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-140</td>
<td>Introduction to Weather</td>
<td>3</td>
</tr>
<tr>
<td>OCEAN-101</td>
<td>Fundamentals of Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-120</td>
<td>General College Physics I</td>
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**plus at least 4 units from:**

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<tr>
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<tr>
<td>CHEM-108</td>
<td>Introductory Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
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**plus at least 9 units from:**

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<td>ARCHI-120</td>
<td>Introduction to Architecture and Environmental Design</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-126</td>
<td>Nature Study and Conservation</td>
<td>4</td>
</tr>
<tr>
<td>COOP-170</td>
<td>Occupational Work Experience Education</td>
<td>1-4</td>
</tr>
<tr>
<td>ENSYS-120</td>
<td>Introduction to Alternate Energy Systems</td>
<td>2</td>
</tr>
<tr>
<td>GEOG-127</td>
<td>Introduction to Global Positioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-130</td>
<td>Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>MATH-182</td>
<td>Calculus for Management, Life Science and Social Science I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-192</td>
<td>Analytic Geometry and Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-112</td>
<td>Fundamentals of Physical Science</td>
<td>3</td>
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</tbody>
</table>

**total minimum required units**

29

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**FILM – FILM**

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

**Possible career opportunities**

The study of film prepares students for careers in the entertainment industry, law, business, and education, or for further education at the graduate or professional level. Career options include: feature film editors, executives in video distribution companies, technicians for local news programs, and independent filmmakers. Other occupations include: cinematographer, movie and stage grip, technical writer, playwright, screenwriter, author, producer, editor, rigger, camera operator, and film laboratory technician. Some careers may require more than two years of study.

**FILM-140 American Cinema/American Culture**

3 units SC

- **54 hours lecture per term**

This course is a history of cinema focusing on the development of American film making as part of a larger cultural context including literature, drama, various genres, vaudeville and related art forms. The course will investigate the interplay of economic, industrial, aesthetic, and cultural forces that shape the language of film - how film conveys meaning and functions as a work of art. Other themes to be explored include how Hollywood functions as a business, reflects societal values and concerns (such as the Great Depression and WWII), and responds to new technologies such as radio, television, and the coming of sound for film. CSU, UC

**FILM-150 Topics in Film**

3-4 units SC

- **Variable hours**
- **Recommended: Eligibility for ENGL-122 or equivalent**

A supplemental course in film to provide a study of current concepts and problems in film. Specific topics will be announced in the schedule of classes. CSU

**FILM-160 American Ethnic Cultures in Film**

3 units SC

- **54 hours lecture per term**
- **Recommended: Eligibility for ENGL-122 or equivalent**

This course will evaluate and explore various American cultures: African American, American Indian, Asian American, Hispanic, and European American as represented in feature film. Emphasis is on the analysis of similarities and differences, paying particular attention to social and cultural representations. In addition, the course will include issues specific to the world of cinema including how film language communicates ideas and stimulates emotional responses as well as how economic considerations influence Hollywood distribution practices. CSU, UC

**FILM-165 Digital Editing**

3 units SC

- **36 hours lecture/54 hours laboratory per term**
- **Note: Same as BCA-165 and ARTDM-145**

An introduction to the techniques, concepts and aesthetics of digital non-linear, computerized editing for film, television and digital media. The student will become familiar with various professional software programs and develop an understanding of organization, timelines and story as well as editing for visual and audio effect. CSU
FILM-180 Comparative Film Studies
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course will examine major trends and genres in the world of film. This course will emphasize how plot, theme and character are developed in a visual medium and how the language and syntax of film conveys meaning as compared to literature and drama. The course will also examine the relationship of film to historical, social, and cultural trends. CSU, UC (credit limits may apply to UC - see counselor)

FILM-280 Introduction to Film: American Cinema 1900-1950
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of major trends in American Cinema from 1900 to the demise of the studio system in the 1950s. The methodology includes lectures and the viewing of key films from notable artists and movements that have influenced the development of film arts around the world. In addition, this course will analyze how social, economic, and historical forces shape film art, as well as, the development of global media culture, and understanding how cinema communicates as an art form. CSU, UC

FILM-281 Introduction to Film: World Cinema 1900-1960
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of major trends in World Cinema from 1900 to the French New Wave of the 1960s. The methodology includes lectures and the viewing of key films from notable artists and movements that have influenced the development of film arts around the world. An analysis of how social, economic, and historical forces shape film art will be stressed, as well as, the development of global media culture, and understanding how film communicates as an art form. CSU, UC (credit limits may apply to UC - see counselor)

FILM-282 Introduction to Film: American Cinema 1950 to the Present
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of major trends in American Cinema from the demise of the studio system in the 1950s to the present. The methodology includes lectures and the viewing of key films from notable artists and movements that have influenced the development of film arts around the world. An analysis of how social, economic, and historical forces shape film art will be stressed, as well as, the development of global media culture, and understanding how film communicates as an art form. CSU, UC

FILM-283 Introduction to Film - World Cinema 1960 to the Present
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of major trends in World Cinema since 1960 from French New Wave to the growth of Asian, Latin American, and Third-World cinema. The course methodology includes lectures and the viewing of key films from notable artists and movements that have influenced the development of film arts around the world. It will stress the social, economic, and historical forces that shape film art, as well as, the development of global media culture and understanding how film communicates as an art form. CSU, UC

FILM-284 Introduction to Film - Women in Cinema
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of the major influences of women on film history. The course includes lectures and the viewing of key films made by notable women directors, producers, screenwriters, editors and actors who have influenced the development of film arts around the world. An analysis of how social, economic, and historical forces have shaped women's role in the development of film will be stressed, as well as, growth of global media culture, and how film communicates as an art form. CSU, UC

FILM-290 Film and TV Scriptwriting - Beginning
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This is a beginning film writing class. The course will focus on the planning, outlining and structuring of an original feature-length fiction screenplay. The student will study film terms and formats, work with treatment, scenario and shooting scripts, analyze film and television clips, shorts, tapes, and full-length films with emphasis on understanding the writer's perspective. Numerous writing assignments and exercises will be assigned with the intent of developing a student's ability to write for a visual medium. CSU

FILM-291 Film and TV Scriptwriting - Intermediate
3 units SC
- 54 hours lecture per term
- Prerequisite: FILM-290 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
This is an intermediate film writing class. The course will focus on developing dramatic conflict inside of a three-act structure. There will be numerous writing assignments including the writing of the first-act of a feature-length screenplay. The purpose of the class is to hone and increase the student’s ability to write for a visual medium. CSU
FILM-292  Fundamentals of Film Making - Beginning  
3 units  SC  
• 36 hours lecture/54 hours laboratory per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
The course teaches the student to execute short, single-camera digital videos by applying the introductory elements of the class including: camera operation and lens selection, audio recording, script development and visual concepts, lighting setup, digital production, and basic digital editing. CSU, UC (credit limits may apply to UC - see counselor).

FILM-293  Fundamentals of Film Making - Intermediate  
3 units  SC  
• 36 hours lecture/54 hours laboratory per term  
• Prerequisite: FILM-292 or equivalent  
• Recommended: Eligibility for ENGL-122 or equivalent  
This course teaches the student to create intermediate level single-camera digital videos that utilize mixed soundtracks, sophisticated lighting schemes, sync sound, polished editing and the use of visual metaphors. CSU, UC (credit limits may apply to UC - see counselor).

FILM-294  Film and TV Scriptwriting - Advanced  
3 units  SC  
• 54 hours lecture per term  
• Prerequisite: FILM-291 or equivalent  
• Recommended: Eligibility for ENGL-122 or equivalent  
The purpose of this class is for the advancing student to produce a feature length screenplay. Therefore, emphasis will be placed on developing and refining authentic characters, solid stories and dramatic structure. There will be numerous writing exercises and evaluations. CSU

FRENCH – FRNCH  
Students with prior foreign language instruction should check with a language teacher regarding proper placement in foreign language courses. The following system is generally used to determine the appropriate term of college work based on high school language: two years equal one college term; three years equal two college terms; four years equal three college terms.

Michael Almaguer, dean  
Applied and Fine Arts  
Business and Foreign Language Building, Room 204

Possible career opportunities  
The study of French can open up opportunities in communications, foreign trade and banking, transportation, government, the Foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.

Program level student learning outcomes  
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree  
French

Certificate of achievement  
French

Associate in arts degree - French  
The associate in arts degree in French at DVC will provide students with skills in understanding, speaking, reading and writing French. The curriculum exposes students to French culture and civilization and provides foundational skills in language that can apply to a broad range of international and domestic career opportunities and professions. The degree will provide lower division preparation for transfer to UC, CSU and other four year colleges and universities to earn a bachelor's degree.

The DVC French major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate-granting institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU Breadth). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students
may not take a credit/no credit option for major courses and each of the major requirements must be completed with a “C” grade or higher. Certain courses may satisfy both a major and a general education requirement; however, the units are counted only once.

Students must complete at least 20 units from the list of core courses. The core courses provide students with the essential grammar of the language, culture and basic literature of the francophone world. Students who have no prior knowledge of French will complete the first four courses in the list for a total of 20 units. Students with prior knowledge of French may start at the second term level and take fifth and sixth terms to achieve a total of 21 units.

**complete a minimum of 20 units from:**
- FRNCH-120 First Term French
- FRNCH-121 Second Term French
- FRNCH-220 Third Term French
- FRNCH-221 Fourth Term French
- FRNCH-230 Fifth Term French
- FRNCH-231 Sixth Term French

**total minimum required units** 20

**Certificate of achievement - French**

This certificate of achievement was created to give students the opportunity to show potential employers in this country and in other countries that the student has completed a certain number of courses in French and prepares students with an intermediate to advanced knowledge of French and familiarizes them with the culture of the Francophone world.

This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of at least 13 units from one of the following lists of courses which must be completed with a “C” grade or higher.

**List A**
- FRNCH-120 First Term French
- FRNCH-121 Second Term French
- FRNCH-220 Third Term French
- FRNCH-221 Fourth Term French
- FRNCH-230 Fifth Term French
- FRNCH-231 Sixth Term French

**List B**
- FRNCH-121 Second Term French
- FRNCH-155 First Term Conversational French
- FRNCH-156 Second Term Conversational French
- FRNCH-157 Third Term Conversational French
- FRNCH-220 Third Term French
- FRNCH-221 Fourth Term French

**total minimum required units** 13

**FRNCH-120 First Term French**

<table>
<thead>
<tr>
<th>5 units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 hours lecture/18 hours laboratory per term</td>
<td></td>
</tr>
</tbody>
</table>

This is a basic course in understanding, speaking, reading, and writing French. There is extensive utilization of cultural material and information. CSU, UC

**FRNCH-121 Second Term French**

<table>
<thead>
<tr>
<th>5 units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 hours lecture/18 hours laboratory per term</td>
<td></td>
</tr>
<tr>
<td>Recommended: FRNCH-120 or equivalent</td>
<td></td>
</tr>
</tbody>
</table>

A second-term basic course at a more advanced level in understanding, speaking, reading, and writing French. Cultural material and information will also be covered. CSU, UC

**FRNCH-150 Topics in French**

<table>
<thead>
<tr>
<th>3-4 units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable hours</td>
<td></td>
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</tbody>
</table>

A supplemental course in French to provide a study of current concepts and problems in French and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

**FRNCH-155 First Term Conversational French**

<table>
<thead>
<tr>
<th>3 units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 hours lecture/18 hours laboratory per term</td>
<td></td>
</tr>
<tr>
<td>Note: This course does not satisfy the academic requirements of the FRNCH-120-121 series</td>
<td></td>
</tr>
</tbody>
</table>

Instruction in basic speaking, listening, and comprehensive skills. Introduction to simple grammatical structures and vocabulary to enable students to communicate in everyday situations. CSU

**FRNCH-156 Second Term Conversational French**

<table>
<thead>
<tr>
<th>3 units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 hours lecture/18 hours laboratory per term</td>
<td></td>
</tr>
<tr>
<td>Recommended: FRNCH-155 or equivalent</td>
<td></td>
</tr>
<tr>
<td>Note: This course does not satisfy the academic requirements of the FRNCH-120-121 series</td>
<td></td>
</tr>
</tbody>
</table>

Second term conversational course designed to improve speaking and oral comprehension skills. Building on previously acquired knowledge, it will include a more extensive grammar and vocabulary to expand beyond the self and on to conversation of a more general nature. Emphasis will be on oral use of the language. Comprehension will be reinforced through listening practice. CSU
FRNCH-157  Third Term Conversational French
3 units  SC
• 54 hours lecture/18 hours laboratory per term
• Recommended: FRNCH-156 or equivalent
• Note: This course does not satisfy the academic requirements of the FRNCH-120-121 series
This is a third term conversational French course designed to improve and refine speaking, listening, and comprehensive skills by reviewing and introducing target vocabulary and grammar. Students will be able to discuss topics of social, political, and cultural nature. Students will also have the opportunity to present a well-researched expose on various aspects of French culture. CSU

FRNCH-220  Third Term French
5 units  SC
• 90 hours lecture/18 hours laboratory per term
• Recommended: FRNCH-121 or equivalent
This course develops a functional fluency in understanding, speaking, reading and writing French, as well as providing an introduction to the study of French literature. This is a further study and interpretation of foreign culture. CSU, UC

FRNCH-221  Fourth Term French
5 units  SC
• 90 hours lecture/18 hours laboratory per term
• Recommended: FRNCH-220 or equivalent
Advanced grammar study and review. Study of francophone literature in French with emphasis on the short story and poetry. Cultural study integrated into class discussions. Class conducted in French. CSU, UC

FRNCH-230  Fifth Term French
3 units  SC
• 54 hours lecture per term
• Recommended: FRNCH-221 or equivalent
This is a continuation of FRNCH-221 with intensive study of additional literary works. There is further development of language skills through student preparation and presentation of reports. This course is conducted entirely in French. CSU, UC

FRNCH-231  Sixth Term French
3 units  SC
• 54 hours lecture per term
• Recommended: FRNCH-230 or equivalent
This is a continuation of FRNCH-230 with intensive study of additional literary works. There is further development of language skills through student preparation and presentation of reports. This course is conducted entirely in French. CSU, UC

FRNCH-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to study special interests under the direction of faculty. CSU

FRNCH-299  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

GEOGRAPHY – GEOG
Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
Geography is an interdisciplinary study focusing on the spatial relations of physical, cultural and economic systems of our world. As such, geographers are employed in a wide array of fields in many capacities such as: city/county planning; surveying; cartography; aerial photographic interpretation; remote sensing; environmental studies; meteorology; GIS (geographic information systems); and GPS (global positioning systems). Geographers are employed by private sector firms, government and non-profit organizations. Many career options may require more than two years of college study.

Cultural geography careers include geography education at many levels, analyst, consultant and planner. Most career options require more than two years of college study.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.
GEOGRAPHY

Associate in arts degree
Social/cultural geography

Associate in science degrees
Geographic information systems/Global positioning system
Meteorology
Physical geography

Certificate of achievement
Geographic information systems/Global positioning system

Certificate of accomplishment
Geographic information systems/Global positioning system

Associate in arts degree - Social/cultural geography
The social-cultural geography major at Diablo Valley College offers students the opportunity to prepare for a broad range of professions through the study of the spatial distribution of languages, religions and other aspects of human culture. Students will be prepared to transfer to UC, CSU and other four-year colleges and universities to earn a Bachelor’s degree. DVC prepares students to pursue careers in government, business, international relations, and education.

The DVC social-cultural geography major consists of 18 units of required courses in which students develop an understanding of the origin, diffusion and spatial distribution of various attributes of human culture.

The DVC social-cultural geography major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select courses used for transfer to four-year institutions of their choice.

To earn an associate in arts degree, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major, and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

major requirements
GEOG-125 Introduction to Geographic Information Systems (GIS)........................................... 3
GEOG-126 Advanced Geographic Information Systems............................................................... 3
GEOG-127 Introduction to Global Positioning Systems................................................................... 3
GEOG-128 Advanced Global Positioning Systems................................................................. 3
GEOG-160 Remote Sensing................................................................. 4
GEOG-162 Maps and Cartography.......................................................................................... 3

plus at least 6 units from:
COMSC-100 Introduction to Computers and Information Systems........................................... 3
COMSC-100L Introduction to Computer Software......................................................... 1
COMSC-110 Introduction to Programming........................................................................ 4
COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA).............. 2
COMSC-172 UNIX and Linux Administration.............................................................. 2
COMSC-255 Programming with Java.................................................................................. 4

plus at least 6 units from:
ANTHR-126 Introduction to Archaeological Field Methods.................................................. 3
BIOSC-126 Nature Study and Conservation........................................................................ 4
BIOSC-170 Environmental Science......................................................................................... 3
COOP-170 Occupational Work Experience Education.................................................. 1-4
ENGIN-126 Computer Aided Design and Drafting - AutoCAD........................................ 4
GEOG-120 Physical Geography......................................................................................... 3
GEOL-120 Physical Geology............................................................................................... 3

total minimum required units 31

Associate in science degree - Geographic information systems/Global positioning system
The associate in science degree program in geographic information systems (GIS)/global positioning system (GPS) is designed to prepare students for entry into careers that employ generalized or specialized applications of GIS. GIS is a versatile and powerful technology that allows data input, data management, analysis and display of result within a single setup. Most local, state, and federal government agencies use GIS, as do businesses, planners, architects, foresters, geologists and a host of other occupations. Students learn technical and analytical skills for research as well as practical skills necessary to enter the job market and obtain positions with such titles as GIS technician, GIS specialist, GIS analyst, GIS programmer, GIS coordinator, GIS supervisor and GIS manager. To earn a degree, students must complete each course used to meet a major requirement with a “C” grade or higher and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

major requirements
GEOG-125 Introduction to Geographic Information Systems (GIS)........................................... 3
GEOG-126 Advanced Geographic Information Systems............................................................... 3
GEOG-127 Introduction to Global Positioning Systems................................................................... 3
GEOG-128 Advanced Global Positioning Systems................................................................. 3
GEOG-160 Remote Sensing................................................................. 4
GEOG-162 Maps and Cartography.......................................................................................... 3

plus at least 6 units from:
COMSC-100 Introduction to Computers and Information Systems........................................... 3
COMSC-100L Introduction to Computer Software......................................................... 1
COMSC-110 Introduction to Programming........................................................................ 4
COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA).............. 2
COMSC-172 UNIX and Linux Administration.............................................................. 2
COMSC-255 Programming with Java.................................................................................. 4

plus at least 6 units from:
ANTHR-126 Introduction to Archaeological Field Methods.................................................. 3
BIOSC-126 Nature Study and Conservation........................................................................ 4
BIOSC-170 Environmental Science......................................................................................... 3
COOP-170 Occupational Work Experience Education.................................................. 1-4
ENGIN-126 Computer Aided Design and Drafting - AutoCAD........................................ 4
GEOG-120 Physical Geography......................................................................................... 3
GEOL-120 Physical Geology............................................................................................... 3

total minimum required units 31
**Associate in science degree - Meteorology**

The meteorology major at Diablo Valley College offers students the opportunity to prepare for a range of professions through the study of meteorology as an applied science. Students will be prepared to transfer to UC, CSU and other four-year colleges and universities to earn a baccalaureate degree. DVC prepares students to pursue careers in government, private forecasting and broadcast meteorology.

The DVC meteorology major consists of 18 units of required core courses through which students develop an understanding of the atmosphere, the physical principles governing weather, the spatial distribution of weather and how the atmosphere links to other components of earth's physical environment.

The DVC meteorology major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.

To earn an associate in science degree with a major in meteorology, students must complete each course used to meet a major requirement with a "C" grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major, and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-120</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-121</td>
<td>Physical Geography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-135</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-140</td>
<td>Introduction to Weather</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-141</td>
<td>Introduction to Weather Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Maps and Cartography</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-120</td>
<td>General College Physics</td>
<td>4</td>
</tr>
</tbody>
</table>

**total minimum required units** 18

**Certificate of achievement - Geographic information systems/Global positioning system**

The geographic information systems (GIS)/global positioning system (GPS) program is designed to prepare students for entry into careers that employ generalized or specialized applications of GIS. GIS is a versatile and powerful technology that allows data input, data management, analysis and display of result within a single setup. Most local, state, and federal government agencies use GIS, as do businesses, planners, architects, foresters, geologists and a host of other occupations. Students learn technical and analytical skills for research as well as practical skills necessary to enter the job market and obtain positions with such titles as GIS technician, GIS specialist, GIS analyst, GIS programmer, GIS coordinator, GIS supervisor and GIS manager.

The DVC physical geography major consists of 24 units of study. Students are required to take 14 units of core courses in which they develop an understanding of the physical environment and learn how to acquire, map and analyze spatial data relevant to the physical environment.

The DVC physical geography major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.

To earn an associate in science degree with a major in physical geography, students must complete each course used to meet a major requirement with a "C" grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major, and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>GEOG-120</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-121</td>
<td>Physical Geography Laboratory</td>
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<tr>
<td>GEOG-135</td>
<td>World Regional Geography</td>
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</tr>
<tr>
<td>GEOG-140</td>
<td>Introduction to Weather</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-141</td>
<td>Introduction to Weather Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Maps and Cartography</td>
<td>3</td>
</tr>
<tr>
<td>BSC-126</td>
<td>Nature Study and Conservation</td>
<td>4</td>
</tr>
<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-127</td>
<td>Introduction to Global Positioning Systems</td>
<td>3</td>
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<td>GEOL-120</td>
<td>Physical Geology</td>
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</tr>
<tr>
<td>GEOL-122</td>
<td>Physical Geology Laboratory</td>
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</tr>
<tr>
<td>GEOL-125</td>
<td>Geology of California</td>
<td>3</td>
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</table>

**total minimum required units** 18
To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Required courses are available in the evening and during the day.

###_required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>GEOG-125</td>
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<tr>
<td>GEOG-126</td>
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<tr>
<td>GEOG-127</td>
<td>3</td>
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<tr>
<td>GEOG-128</td>
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**plus at least 3 units from:**

<table>
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<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>ANTHR-126</td>
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<tr>
<td>BIOSC-126</td>
<td>4</td>
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<tr>
<td>BIOSC-170</td>
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<td>COMSC-100L</td>
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<td>COOP-170</td>
<td>1-4</td>
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<tr>
<td>ENGIN-126</td>
<td>4</td>
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<td>GEOL-120</td>
<td>3</td>
</tr>
<tr>
<td>GEOL-122</td>
<td>1</td>
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</tbody>
</table>

###total minimum required units 15

###Certificate of accomplishment - Geographic information systems/Global positioning system

The geographic information systems (GIS)/global positioning system (GPS) program is designed to prepare students for entry into careers that employ generalized or specialized applications of GIS. GIS is a versatile and powerful tool that allows data input, data management, analysis and display of result within a single setup. Most local, state, and federal government agencies use GIS, as do businesses, planners, architects, foresters, geologists and a host of other occupations. Students learn technical and analytical skills for research as well as practical skills necessary to enter the job market and obtain positions with such titles as GIS technician, GIS specialist, GIS analyst, GIS programmer, GIS coordinator, GIS supervisor and GIS manager.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Required courses are available in the evening and during the day.

###required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>GEOG-125</td>
<td>3</td>
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<tr>
<td>GEOG-126</td>
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<td>GEOG-128</td>
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**plus at least 6 units from:**

<table>
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<tr>
<th>Course</th>
<th>Units</th>
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<tr>
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<td>COOP-170</td>
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<td>ENGIN-126</td>
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<td>GEOL-122</td>
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</table>

###total minimum required units 31

###GEOG-120 Physical Geography

3 units  SC  
- 54 hours lecture per term  
- Recommended: MATH-090 or one year of high school algebra or equivalent

A general course to introduce the fundamental principles of physical geography. This course is intended to provide an intelligent understanding of the Earth as the home of human beings and to show the interrelationships found within the physical environment. Quantitative reasoning, development of mathematical concepts and problem solving are emphasized. CSU, UC

###GEOG-121 Physical Geography Laboratory

1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: GEOG-120 or equivalent (may be taken concurrently)  
- Note: Field trips may be included in the course

A laboratory course to supplement GEOG-120-Physical Geography. Emphasis will be placed on using the skills and tools of modern physical geography and analyzing and interpreting geographic data. Topics include maps, aerial photographs, satellite images, weather instruments and computer analysis. CSU, UC
GEOG-124 Thinking and Communicating Geospatially
3 units SC
• 54 hours lecture per term
This course is a survey of geographic information technologies including GIS (Geographic Information Systems), GPS (Global Positioning System), RS (Remote Sensing), maps and cartography, mobile and online mapping and an overview of how these technologies are utilized by various agencies, industries, and disciplines for resource management, problem solving, and decision making. CSU

GEOG-125 Introduction to Geographic Information Systems (GIS)
3 units SC
• 54 hours lecture/18 hours laboratory per term
• Recommended: COMSC-100L or equivalent
An introduction to Geographic Information Systems (GIS) as a tool for spatial analysis. The course will cover GIS concepts, techniques and methodologies. Laboratory activities will be used to reinforce lecture concepts. The course will prepare students for advanced university level courses in spatial analysis or for entry level positions in GIS-related fields. CSU

GEOG-126 Advanced Geographic Information Systems
3 units SC
• 54 hours lecture/18 hours laboratory per term
• Prerequisite: GEOG-125 or equivalent
This course is an application of advanced analytical techniques of geographic information systems (GIS) to manipulate, analyze and predict spatial patterns. Students will work on individual projects to learn the issues involved in managing and representing spatial information. CSU

GEOG-127 Introduction to Global Positioning Systems
3 units SC
• 54 hours lecture per term
An introduction to the Global Positioning System (GPS). Development of the GPS, operational characteristics, limitations, potential errors and applications will be covered. Activities with GPS receivers will be required. This course will prepare students for advanced coursework in the GPS or for coursework in Geographic Information Systems. CSU

GEOG-128 Advanced Global Positioning Systems
3 units SC
• 54 hours lecture per term
• Prerequisite: GEOG-127 or equivalent
An advanced course on the Global Positioning System (GPS). Advanced topics including data dictionaries, differential GPS and linking GPS to Geographic Information Systems will be covered. This course will prepare students for additional studies in specific applications of GPS or for coursework in Geographic Information Systems. In addition, skills obtained in this course may allow students to seek employment in the spatial science field. CSU

GEOG-130 Cultural Geography
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
The nature and causes of the spatial distribution of human activity. Phenomena such as population, language, religion, popular culture, agricultural practices, political structure, economic organization, settlement patterns, resource exploration, and technological innovation are examined in order to understand the interactive relationship between human beings and their environment. CSU, UC

GEOG-135 World Regional Geography
3 units SC
• 54 hours lecture per term
A geographic perspective of physical, cultural, political and economic characteristics of countries and regions of the world. A general survey of world place locations, and influence of geographic factors on international cooperation and conflicts. Survey of the transformation of the cultural landscape of the United States. CSU, UC

GEOG-140 Introduction to Weather
3 units SC
• 54 hours lecture per term
• Recommended: It is strongly recommended that students have successfully completed MATH-090 (or equivalent) prior to taking this course
An introductory course in meteorology that is both a descriptive and analytical course on the physical principles affecting the earth’s weather. Topics covered include the nature of the atmosphere, solar energy, heat, temperature, pressure, stability, moisture, wind, storms, severe weather and forecasting. The course introduces climatology as a scientific study and will look at Earth’s climatic history. The course will also look at current research in climate modeling and the possibility of global climate change. C-ID GEOG 130, CSU, UC
GEOG-141  Introduction to Weather Laboratory  
1 unit  SC  
- 54 hours laboratory per term  
- Co-requisite: GEOG-140 or equivalent (may be taken previously)  
- Recommended: MATH-090 or equivalent  
A laboratory course to supplement GEOG-140 (Introduction to Weather). Fundamental concepts in meteorology and measurement techniques including selected mathematical concepts used in developing an understanding of weather and climate. Analysis of real-time weather data will be stressed. CSU, UC  

GEOG-150  Topics in Geography  
.3-4 units  LR  
- Variable hours  
A supplemental course in geography to provide a study of current concepts and problems in geography. Specific topics will be announced in the schedule of classes. CSU  

GEOG-160  Introduction to Remote Sensing  
4 units  SC  
- 54 hours lecture/54 hours laboratory per term  
- Recommended: COMSC-100L or equivalent  
This course introduces the basic principles of remote sensing techniques including aerial photographs, satellite images and radar images. It explains how these techniques are used for collecting data about the earth and how such data can be interpreted and mapped with the help of image processing software and geographic information systems. CSU  

GEOG-162  Maps and Cartography  
3 units  SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: MATH-090 or equivalent  
The course introduces basic principles of mapping and representation of spatial data using conventional and computerized cartographic techniques. Elements of map such as scale, distance, direction, and map projections as well as cartographic techniques of data analysis, processing, symbolization, and representation are examined in detail. This course is designed to develop a better understanding of maps and map-interpretation. CSU  

GEOG-299  Student Instructional Assistant  
.5-3 units  SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.  
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU  

GEOLOGY – GEOL  
Tish Young, dean  
Physical Sciences and Engineering Division  
Physical Sciences Building, Room 263  

Possible career opportunities  
Geologists work in exploration for oil, natural gas, coal and uranium for energy, and for metals used in everyday life. They search for clean sources of groundwater for drinking and agriculture (hydrology). They seek to understand geologic hazards and how to mitigate them (seismology, flood and landslide control, and volcanology). They work to monitor and clean up pollutants in soil, groundwater and surface water. Currently, the best employment opportunities are in hydrology and pollution control. Many career options may require more than two years of college study.  

Program level student learning outcomes  
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.  

Associate in science degree  
Geology
Associate in science degree - Geology
The geology major at Diablo Valley College (DVC) prepares students to transfer to a University of California, California State University, or other baccalaureate-granting college or university to earn a bachelor's degree in geology or other earth science.

The geology major at DVC consists of at least 38 units of study, including 8 units of geology where students will learn the fundamentals of geologic science and gain hands-on experience in geology laboratories. In addition, students will complete a year of calculus courses, a year of chemistry courses, and a year of physics courses that are typically required for a bachelor's degree at baccalaureate-granting institutions. A list of electives including courses such as California Geology, Maps and Cartography, or Introduction to Field Geology allows the student to explore specific fields of greater interest.

The DVC geology major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate-granting institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU Breadth). Option 1 (DVC General Education) is not generally advised.

To earn an associate in science degree with a major in geology, students must complete each course used to meet a major requirement with a "C" grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the major. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

Group 1: Core geology courses
GEOL-120 Physical Geology ........................................... 3
GEOL-121 Earth and Life Through Time ... 3
GEOL-122 Physical Geology Laboratory .... 1
GEOL-124 Earth and Life Through Time Laboratory ... 1

Group 2: Core mathematics courses
complete at least the first two courses (at least 10 units):
MATH-192 Analytic Geometry and Calculus I ................. 5
MATH-193 Analytic Geometry and Calculus II ................. 5
MATH-292 Analytic Geometry and Calculus III ............... 5

Group 3: Core chemistry courses
complete 10 units from:
CHEM-120 General College Chemistry I ................. 5
CHEM-121 General College Chemistry II .......... 5

Group 4: Core physics courses
Complete a minimum of two terms from one sequence (at least 8 units):
PHYS-130 Physics for Engineers and Scientists A: Mechanics and Wave Motion .......... 4
PHYS-230 Physics for Engineers and Scientists B: Heat and Electro-Magnetism .............. 4
PHYS-231 Physics for Engineers and Scientists C: Optics and Modern Physics ............... 4
or
PHYS-120 General College Physics I ...... 4
PHYS-121 General College Physics II ....... 4

Group 5: Electives
complete at least one course (2-4 units):
GEOG-125 Introduction to Geographic Information Systems (GIS) ......................... 3
GEOG-127 Introduction to Global Positioning Systems ................. 3
GEOG-160 Introduction to Remote Sensing ................. 4
GEOG-162 Maps and Cartography ...... 3
GEOG-125 Geology of California ................. 3
GEOG-125 Introduction to Field Geology ................. 2

total minimum required units 38

GEOL-120 Physical Geology
3 units LR
• 54 hours lecture per term
• Recommended: MATH-090 or one year of high school algebra and eligibility for ENGL-122 or equivalents
A general course in geologic science which attempts to encompass nearly all phases of geology. The course is designed to give the student a greater appreciation and deeper understanding of the fundamental processes which have changed and are presently changing the Earth's crust. The recognition of common minerals, rocks and landscape features of the Earth will be included. Practice in quantitative reasoning and development of mathematical concepts is provided. C-ID GEOL 100, CSU, UC

GEOL-121 Earth and Life Through Time
3 units LR
• 54 hours lecture per term
• Recommended: GEOL-120 or equivalent and GEOL-122 or equivalent
The history of the Earth from its beginning to the present. Topics included are the origin of the Earth, the development of plant and animal life and the physical changes in the Earth which have led to the features which are observed today. C-ID GEOL 110, CSU, UC
GEOL-122  Physical Geology Laboratory  
1 unit  LR  
- 54 hours laboratory per term  
- Co-requisite: GEOL-120 or 125 or equivalent (may be taken previously)  
- Recommended: MATH-090 or one year of high school algebra or equivalent  
- Note: Field trips may be included in the course  
This course is the laboratory component to Physical Geology (GEOL-120) or Geology of California (GEOL-125). Laboratory work includes the identification of rocks and minerals, topographic and geologic map exercises, internal structure of the earth using cross-sections, earthquakes and tectonic activity, and surficial features of the earth. CSU, UC

GEOL-124  Earth and Life Through Time Laboratory  
1 unit  LR  
- 54 hours laboratory per term  
- Prerequisite: GEOL-121 or equivalent (may be taken concurrently)  
A laboratory course in the techniques of historical geological investigations. Topics will include geologic dating, plate tectonics, stratigraphy, fossils, biological evolution, the planet's origin and the processes that have influenced paleogeography during the past 4.6 billion years. Individual laboratory will also include identification and interpretation of the basic rocks and minerals that make up the earth, as well as recognition and classification of the common types of fossils. C-ID GEOL 110L, CSU, UC

GEOL-125  Geology of California  
3 units  LR  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: A field trip may be required  
This course is designed to familiarize students with the varied geological, topographical and geographical aspects of California. This will include a general study of the provinces of California, the major rock types and their occurrence, the major earthquake faults and their frequency of activity, and the general geologic history. Mineral and petroleum resources of the state will be discussed. C-ID GEOL 200, CSU, UC

GEOL-135  Introduction to Field Geology  
2 units  LR  
- 18 hours lecture/54 hours laboratory per term  
- Prerequisite: GEOL-120 and GEOL-122 or equivalents  
- Note: Field trips are definitely required. Most trips are to local parks or open spaces and students are responsible for their own transportation to and from these required components.  
A course in general field methods of geologic science. The course is designed to provide students with the basic skills required to collect geologic data in the field and the skills necessary for constructing simple geologic maps. Types of fieldwork will include compass and orienteering work, measurement of rock features and descriptions of outcrops, as well as identification and mapping of geologic contacts. Geologic field work can be strenuous; students should expect to walk off trail over rough terrain carrying their own equipment. We will work through rain or shine; only seriously inclement weather will suspend work. CSU, UC

GEOL-298  Independent Study  
.5-3 units  SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered  
An opportunity for advanced students to study special interests under direction of the faculty. CSU

GEOL-299  Student Instructional Assistant  
.5-3 units  SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor  
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

GERMAN – GRMAN  
Students with prior foreign language instruction should check with a language teacher regarding proper placement in foreign language courses. The following system is generally used to determine the appropriate term of college work based on high school language: two years equal one college term; three years equal two college term; four years equal three college terms.

Michael Almaguer, dean  
Applied and Fine Arts Division  
Business and Foreign Language Building, room 204

Possible career opportunities  
The study of German can open up opportunities in communications, foreign trade and banking, transportation, government, the Foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.
Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Certificate of achievement

German

Certificate of achievement - German

This certificate of achievement was created to give students the opportunity to show potential employers in this country and in other countries that the student has completed a certain number of courses in German and prepares students with an intermediate to advanced knowledge of German and familiarizes them with the culture of the German-speaking world.

This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of at least 13 units from one of the following lists of courses which must be completed with a “C” grade or higher.

<table>
<thead>
<tr>
<th>List A</th>
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<tbody>
<tr>
<td>GRMAN-120 First Term German</td>
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<tr>
<td>GRMAN-121 Second Term German</td>
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<td>GRMAN-220 Third Term German</td>
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<td>GRMAN-221 Fourth Term German</td>
<td>5</td>
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<tr>
<td>GRMAN-230 Fifth Term German</td>
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<tr>
<td>GRMAN-231 Sixth Term German</td>
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<tbody>
<tr>
<td>GRMAN-121 Second Term German</td>
<td>5</td>
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<tr>
<td>GRMAN-155 First Term Beginning Conversational German</td>
<td>3</td>
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<tr>
<td>GRMAN-156 Second Term Beginning Conversational German</td>
<td>3</td>
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<tr>
<td>GRMAN-157 Third Term Beginning Conversational German</td>
<td>3</td>
</tr>
<tr>
<td>GRMAN-220 Third Term German</td>
<td>3</td>
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<td>GRMAN-221 Fourth Term German</td>
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Total minimum required units 13

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<tr>
<td>5 units</td>
<td>SC</td>
</tr>
<tr>
<td>90 hours lecture/18 hours laboratory per term</td>
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</table>

This is a basic course in communication skills, vocabulary, idioms, and grammatical structures. A new and exciting video program augments the course and provides cultural background for the German-speaking countries. Audio tapes further expose the student to everyday spoken German and provide an opportunity to practice the language. CSU, UC

<table>
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<th>GRMAN-121 Second Term German</th>
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<tbody>
<tr>
<td>5 units</td>
<td>SC</td>
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<tr>
<td>90 hours lecture/18 hours laboratory per term</td>
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<tr>
<td>Recommended: GRMAN-120 or equivalent</td>
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</table>

A second term course in German with emphasis on communicative skills including vocabulary expansion, idioms, writing, and completion of a basic grammar overview. Study of culture, history, and geography of the German-speaking countries through the Focus Deutsch video and audio program. CSU, UC

<table>
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<th>GRMAN-150 Topics in German</th>
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<td>.3-4 units</td>
<td>SC</td>
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<tr>
<td>Variable hours</td>
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</table>

A supplemental course in German to provide a study of current concepts and problems in German and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

<table>
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<th>GRMAN-155 First Term Beginning Conversational German</th>
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<tr>
<td>3 units</td>
<td>SC</td>
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<tr>
<td>54 hours lecture/18 hours laboratory by arrangement per term</td>
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<tr>
<td>Recommended: GRMAN-155 or equivalent</td>
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</table>

This is the first term of the beginning German conversation series. It is a participatory class based on practical material with oral-aural practice. The present tense is emphasized, and covers basic vocabulary and cultural material. CSU

<table>
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<th>GRMAN-156 Second Term Beginning Conversational German</th>
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<td>Recommended: GRMAN-156 or equivalent</td>
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</table>

This is the second term of the beginning German conversation series. It is a participatory class based on practical material with oral-aural practice. The present perfect and simple past tenses are introduced and contrasted. New vocabulary and cultural material are presented. CSU

<table>
<thead>
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<th>GRMAN-157 Third Term Beginning Conversational German</th>
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<td>3 units</td>
<td>SC</td>
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<tr>
<td>54 hours lecture/18 hours laboratory by arrangement per term</td>
<td></td>
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<tr>
<td>Recommended: GRMAN-157 or equivalent</td>
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</tbody>
</table>

This is the third term of the beginning German conversation series. It is a participatory class based on practical material with oral-aural practice. The present perfect and simple past tenses are reviewed and practiced. Subjective, passive voice, and modals are introduced. New vocabulary and cultural material are presented. CSU
GRMAN-220  Third Term German
5 units  SC
  • 90 hours lecture/18 hours laboratory per term
  • Recommended: GRMAN-121 or equivalent
This is a course in intermediate German. Students will expand conversation skills with emphasis on speaking more fluently and with assurance. A grammar review and development of reading and writing skills will also be presented. Short stories, video, and audio programs provide a rich basis for conversation, discussion, and cultural insights. CSU, UC

GRMAN-221  Fourth Term German
5 units  SC
  • 90 hours lecture/18 hours laboratory per term
  • Recommended: GRMAN-220 or equivalent
This intermediate course is a continuation of GRMAN-220 and includes completion of a grammar review and exposure to the finer points of the language, such as particles and when and how to use indirect discourse. The video program exposes the student to many aspects of life in Austria, Germany, and Switzerland, including the various accents of the native speakers. CSU, UC

GRMAN-230  Fifth Term German
3 units  SC
  • 54 hours lecture per term
  • Recommended: GRMAN-221 or equivalent
Students refine their knowledge of advanced German and their insights into the culture of the German-speaking countries through contemporary literature, popular writings, such as magazines, advertisements, videos and film. Many group activities and projects, with an emphasis on communicative skills. CSU, UC

GRMAN-231  Sixth Term German
3 units  SC
  • 54 hours lecture per term
  • Recommended: GRMAN-230 or equivalent
Intensive study of selected literary works (prose, poetry, drama) from the German speaking countries. Students deal critically with both the language and the content of the readings. Exploration of different writing styles and oral communication, such as debates, oratory, jokes, and storytelling. CSU, UC

GRMAN-299  Student Instructional Assistant
.5-3 units  SC
  • Variable hours
  • Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

HEALTH SCIENCE – HSCI

Diablo Valley College is approved by the California Board of Registered Nurses for continuing education credits (provider #CEP 7992) Health Science courses which can be used are HSCI-124, 140, 164 and 170

Tish Young, dean
Biological and Health Sciences Division
Physical Sciences Building, Room 263

Possible career opportunities
A health science graduate may work in federal, state or county health agencies, community clinics, voluntary health agencies and hospitals, insurance or pharmaceutical companies.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Health education

Associate in science degree - Health education
The associate in science (AS) degree in health education exposes the student to a multi-dimensional approach to health by incorporating the study of social, behavioral and physiological sciences. Students will learn about risk factors for disease and disability and be taught behavior-changing skills, all of which have broad applications in fields that teach health education such as academic, community, corporate, and/or medical. The course of study also provides a broad foundation in health sciences for those students who want to pursue specialized occupations in the health profession.

Students may apply the knowledge to work in areas such as a workplace wellness, county health department, hospital/health insurance health education center, state or university health center, Planned Parenthood, or any health club that offers health education information. Students wishing to pursue a career in the field of public health education should consider this two year program as it provides preparation for baccalaureate degrees useful in the field of health education.

DVC health education students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC)
or Option 3 (CSU G.E.). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate in science degree with a major in health education, students must complete each course used to meet a major requirement with a “C” grade or higher and complete general education requirements as listed in the catalog. Degree requirements can be completed by attending classes in the day, the evening, or both. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

### major requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>HSCI-124</td>
<td>Health and Wellness</td>
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</tr>
<tr>
<td>HSCI-140</td>
<td>Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI-115</td>
<td>Nutrition and Health: Personal Applications</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-101</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-120</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOP-180</td>
<td>Internship in Occupational Work Experience Education</td>
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<tr>
<td>COUNS-120</td>
<td>Student Success</td>
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<tr>
<td>HSCI-126</td>
<td>Stress Management and Health</td>
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<tr>
<td>HSCI-127</td>
<td>Drugs, Health and Society</td>
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<tr>
<td>HSCI-164</td>
<td>Health and Healing Systems: Cross-Cultural Perspectives</td>
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<td>HSCI-170</td>
<td>Women's Health</td>
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<tr>
<td>HSCI-230</td>
<td>Advanced First Aid/CPR</td>
</tr>
<tr>
<td>HSCI-298</td>
<td>Independent Study</td>
</tr>
<tr>
<td>KINES-240</td>
<td>Principles of Optimizing Human Performance</td>
</tr>
<tr>
<td>LS-121</td>
<td>Information Literacy and Research Skills</td>
</tr>
<tr>
<td>NUTRI-120</td>
<td>Sports Nutrition: Fueling the Athlete</td>
</tr>
<tr>
<td>NUTRI-160</td>
<td>Nutrition: Science and Applications</td>
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</table>

**total minimum required units** 18

### HSCI-124  Health and Wellness

3 units SC

- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: The nutrition, tobacco and substance abuse components of this course fulfill a portion of the state health education requirements for a teaching credential. For CPR training see HSCI-131.

An overview of all aspects of health and wellness, including physical, mental, spiritual, emotional, environmental and social dimensions. This course examines current scientific research on methods of improving health and wellness including, but not limited to, nutrition, fitness, mental health, drug abuse, sexuality and behavior change. CSU, UC (credit limits may apply to UC - see counselor)

### HSCI-125  Consumer Health

3 units SC

- 54 hours lecture per term
- Recommended: Eligibility for ENGL-116/118 or equivalent

This course is designed to examine consumer aspects of health and medical care in contemporary society. Course study will include topics such as evaluating health care delivery systems, health care providers, and health insurance plans. Students will also learn how to critically assess health information and health-related services and products, as well as where to obtain health information, services and products. CSU

### HSCI-126  Stress Management and Health

3 units SC

- 54 hours lecture per term
- Recommended: ENGL-116/118 or equivalent

This course will examine the theoretical frameworks of stress research and common stress management techniques. Topics of study will include defining stress, understanding physiological theories of stress, defining sources and causes of stress, and examining health consequences of chronic stress. Students will examine and analyze numerous strategies to manage and cope with stress such as: time management, relaxation techniques, communication skills, diet and exercise. CSU

### HSCI-127  Drugs, Health and Society

3 units SC

- 54 hours lecture per term
- Recommended: ENGL-116/118 or equivalent

This course introduces concepts, theories, and perspectives associated with the bio-psycho-social effects of drug use in our society. The pharmacological classification of psychoactive substances and their effects will be explored as well as definitions and evidence concerning substance dependence, abuse, tolerance, and withdrawal. An analysis of health and social policy related to the legal and illegal use of psychoactive substances will also be examined. CSU, UC (credit limits may apply to UC - see counselor)

### HSCI-128  Medical Terminology

3 units SC

- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BUSIM-231

This course will prepare students to work in the health care field. This course teaches construction, pronunciation, spelling, definition and common usage for all medical terms in anatomy, physiology, pathology and health care. This course includes an overview of body systems, pharmacology, diagnostic procedures and clinical test protocols. CSU
HSCI-130  Community Health  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course explores health status and health disparities in diverse, low-income communities in the United States. Students will become familiar with current health policy issues in urban communities and the processes for influencing public policy. Emphasis will be placed on the development of skills to serve as an effective advocate for community health. CSU, UC

HSCI-131  Cardiopulmonary Resuscitation (CPR)  
.5 unit  SC  
- 9 hours lecture/3 hours laboratory per term  
- Recommended: ENGL-116/118 or equivalent  
This course is designed to teach lifesaving skills to be used in respiratory and cardiac emergencies and to recertify those with CPR already. CSU

HSCI-140  Human Sexuality  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This is an introductory course examining human sexuality from a biological and cross-cultural perspective. Historical and traditional influences, as well as current perspectives will be presented. This course will facilitate students' knowledge of each other's cultures and traditions as they relate to sexuality. Topics that will be examined include sexual anatomy and physiology, gender issues, sex research, relationships and intimacy, communication, sexual behaviors, sexual orientation, sexual minorities, contraception, abortion, sexually transmitted diseases, and enhancing sexual fulfillment. CSU, UC

HSCI-150  Topics in Health Science  
.3-4 units  SC  
- Variable hours  
- Recommended: Eligibility for ENGL-122 or equivalent  
A supplemental course in health science to provide a study of current concepts and problems in health science. Specific topics will be announced in the schedule of classes. CSU

HSCI-164  Health and Healing Systems: Cross-Cultural Perspectives  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Continuing Education Units (CEUs) for nurses  
This course examines health, disease, healing and medicine from an interdisciplinary perspective. Concepts and philosophies from traditional cultural healing systems and contemporary Western medicine will be examined from psychological, sociological, biological, historical and cultural perspectives. Topics covered include the history of Western medical thought, principles of indigenous healing systems, the role of gender in healing, the effects of personality and emotions on health and disease, and integrative medicine. CSU, UC

HSCI-170  Women's Health  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
An exploration of the biological, sociopolitical, and psychological aspects of women's health and medical care in contemporary society. The course examines contemporary issues of women's health with emphasis on the politicization of the social, physical, emotional, intellectual, and environmental components of health. CSU, UC (credit limits may apply to UC - see counselor)

HSCI-230  Advanced First Aid/CPR  
3 units  SC  
- 54 hours lecture per term  
- Note: Continuing Education Units (CEUs) for nurses  
This advanced course involves the theory and detailed demonstration of the first aid care of the injured. The student will learn to assess a victim's condition and incorporate proper treatment. Standard first aid, cardio-pulmonary resuscitation (CPR), and automatic external defibrillator (AED) certification(s) will be granted upon successful completion of requirements. This course is required training for medical professionals. C-ID KIN 101, CSU, UC

HSCI-298  Independent Study  
.5-3 units  SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered  
An opportunity for advanced students to study special interests under the direction of faculty. CSU

HSCI-299  Student Instructional Assistant  
.5-3 units  SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.  
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU
HEATING, VENTILATION, AIR CONDITIONING, REFRIGERATION - HVACR

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

HVACR-110 Beginning Electrical Theory
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course introduces concepts of electrical principles used in air conditioning and refrigeration. Topics include meters, circuits, contactors, relays, thermostats, pressure switches, motors, overloads, circuitry and troubleshooting. This course will also cover safety as it pertains to the heating ventilation air conditioning and refrigeration (HVACR) industry.

HVACR-111 Mechanical Refrigeration Theory
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course is a study in the design, assembly and operation of compression systems to include charging, recovery, recycling and reclamation, installation, heat pumps, part load, and troubleshooting.

HVACR-113 The Refrigeration Cycle
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course covers the design, assembly and operation of compression systems to include charging, recovery, recycling and reclamation, installation, heat pumps, part load, and troubleshooting.

HVACR-114 Intermediate Electrical I
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

A sequential approach to exploring basic series and parallel circuits related to air conditioning (AC) and refrigeration. Motors, relays, contactors, thermostats, pressure switches and overloads are examined and wired. The concluding projects are basic AC and refrigeration systems. Special emphasis will be placed on electrical circuits diagnosis and troubleshooting.

HVACR-115 Intermediate Mechanical Refrigeration I
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course covers components and applications of refrigeration systems; electric, gas, oil, and alternative (stoves, fireplace inserts, and solar) heating; indoor air quality, comfort and psychometrics; and refrigeration applied to air conditioning.

HVACR-116 Intermediate Electrical II
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

A sequential approach to exploring basic series and parallel circuits related to air conditioning (AC) and refrigeration. Motors, relays, contactors, thermostats, pressure switches and overloads are examined and wired. The concluding projects are basic AC and Refrigeration systems. Special emphasis will be placed on electrical circuits diagnosis and troubleshooting.
HVACR-117 Intermediate Mechanical Refrigeration II
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

Continues topics in heating, air conditioning, and refrigeration including gas controls, gas ignition systems, safety and operating controls, gas furnace installation practices, ventilation and combustion air, and gas furnace troubleshooting.

HVACR-118 Electrical Troubleshooting I
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course will cover advanced electrical controls with special emphasis on troubleshooting and repair. Topics include proportional controls, economizers and variable air volume (VAV) controls. Motor starting techniques will be discussed including variable frequency drives (VFDs) with safety procedures being stressed.

HVACR-119 Electrical Troubleshooting II
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course covers additional topics in advanced electrical controls with special emphasis on troubleshooting and repair. Covered will be proportional controls, economizers and VAV controls. Motor starting techniques will be discussed including Variable Frequency Drives with safety procedures being stressed.

HVACR-120 Introduction to Direct Digital Controls
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course will cover direct digital controls (DDC) as they apply to the air conditioning and refrigeration industry. Topics include transmitters, sensors, power supplies and controllers. The course includes hands-on wiring testing and programming of typical components found in the industry. The student will learn techniques for troubleshooting and diagnosing hardware and software problems with DDC systems. Students will also be introduced to basic programming languages to better understand the internal operation of the system.

HVACR-121 Introduction to Variable Frequency Drives
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

Introduction to variable frequency drives (VFD’s), applications of use, and limited troubleshooting. Parameterization for start up, open loop, closed loop, floating point, and preset speed profiles will be covered.

HVACR-122 Introduction to Market Refrigeration Systems
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course covers the most common refrigeration equipment such as cases, defrost methods, timers, control devices, oil float systems, and heat reclaim controls. Typical market systems will be explored. Also, reading floor plans, refrigeration schedules and piping diagrams in conjunction with laying out undergrounds and overheads in a typical market will be discussed. Understanding all aspects of component operation and location including compressors, evaporators, condensers, refrigerated cases, walk-ins, heat reclaim, and connecting paraphernalia, i.e. valves, driers, etc. will be covered.

HVACR-123 Introduction to Pneumatic Controls
2 units LR
- 18 hours lecture/36 hours laboratory per term
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course will investigate and recognize the operation of direct and reverse acting controls, air compressors, sizing of valves and dampers, thermostats, auxiliary devices, transmitters and receiver controllers. This sequential pattern is reinforced with various laboratory experiments.
HVACR-124  Introduction to Boilers
2 units  LR
  • 18 hours lecture/36 hours laboratory per term
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course covers the components and operation of boiler systems used in hotels, apartment buildings, schools, and other large institutions. Students will be prepared for licensing examinations. A comprehensive overview of the safe and efficient operation of high pressure boilers and related equipment is also provided, including the latest combustion control technology, as well as EPA regulations and their implications.

HVACR-125  Advanced Compressor and Motor Theory
2 units  LR
  • 18 hours lecture/36 hours laboratory per term
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

The course will include reciprocating compressor disassembly and assembly while developing a working knowledge of compressor function, troubleshooting, alignment, and performance. Unloaders, oils, starters and start-up procedures will be explored. Prominent Trane and Carrier compressors will be examined.

HVACR-126  Start Test Balance: Water Side I
2 units  LR
  • 18 hours lecture/36 hours laboratory per term
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course introduces proper procedures for start, test, and balance of air conditioning systems utilizing basic principles of air and water flow will be explored. The principles of air conditioning and refrigeration will be overviewed and analyzed through the use of the Mollier Diagram and course handouts.

HVACR-127  Start Test Balance: Air Side I
2 units  LR
  • 18 hours lecture/36 hours laboratory per term
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course provides an overview of commercial air conditioning systems currently in use today and the methods to service them. System operation, direct expansion (DX) and chiller systems, pumps, boiler controls and related systems will be covered. The use and application of heat load equations, charts and procedures as related to commercial and residential buildings is introduced.

HVACR-128  Start Test Balance: Water Side II
2 units  LR
  • 18 hours lecture/36 hours laboratory per term
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

Proper procedures for start, test, and balance of air conditioning systems utilizing basic principles of air and water flow will be explored. Refrigerant pipe sizing will be explored through the use of excerpts from Trane’s Refrigeration Manual and Carrier’s System Design Manual. The benefits of psychrometrics on human comfort through an understanding of temperature, humidity and air movement will be examined through the use of the psychrometric diagram and course handouts. Other topics explored are fan laws, air movement, pumps, piping, air and water measurement.

HVACR-129  Start Test Balance: Air Side II
2 units  LR
  • 18 hours lecture/36 hours laboratory per term
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.

This course provides a continued study of commercial air conditioning systems and the methods to service them. Air distribution and heat flow are emphasized. Students will investigate air measurement and air distribution of duct design in commercial and residential buildings.

Possible career opportunities
The study of history contributes to cultural literacy and develops critical thinking and other useful skills for a broad range of careers including education, public service and law. Most career options require more than two years of college study.

Obed Vazquez, interim dean
Social Sciences Division
Faculty Office Building, Room 136

HISTORY – HIST

The study of history contributes to cultural literacy and develops critical thinking and other useful skills for a broad range of careers including education, public service and law. Most career options require more than two years of college study.

Obed Vazquez, interim dean
Social Sciences Division
Faculty Office Building, Room 136

Possible career opportunities
The study of history contributes to cultural literacy and develops critical thinking and other useful skills for a broad range of careers including education, public service and law. Most career options require more than two years of college study.
HIST-120  History of the United States before 1877
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
A history of the United States before 1877. This course examines cultural, economic, political, and social factors and includes the experiences and contributions of Native American, African, Asian, Mexican/Latino and European men and women in the development of American society. The course will cover the origins, nature, and impact of the U.S. Constitution on American history before 1877 including the political philosophies of the framers, the operation of political institutions, and the rights and obligations of citizens. CSU, UC (credit limits may apply to UC - see counselor)

HIST-121  History of the United States after 1877
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course examines the history of the United States from 1877 to the present. The course explores cultural, economic, social, and political factors, including the operation and continuing evolution of local, state and federal governments under the U.S. and California Constitutions. The experiences of groups from diverse backgrounds are included: Euro Americans, Asian Americans, Africans, Native Americans and Mexican American/Latinas/os. In addition, this course will examine the growing international role of the United States from the late nineteenth century to the present. CSU, UC (credit limits may apply to UC - see counselor)

HIST-122  Critical Reasoning in History
3 units  SC
• 54 hours lecture per term
• Prerequisite: ENGL-122 or equivalent
Critical reasoning in history is a process of questioning, analyzing, and evaluating oral and written ideas, concepts, and interpretation of the past. This process will include an introduction to the principles of inductive and deductive reasoning. The goal is to learn how to identify historical viewpoints, gather and organize historical information, recognize historical relationships and patterns, and see the relevancy of historical insights as background for an understanding of current events and issues. To achieve this goal, critical reasoning in history involves an understanding and practice of certain definable skills. CSU, UC

HIST-124  History of California
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
The course is a survey of the history of California, including the culture of the native Indian people and the Hispanic and early American settlement of California. The course also covers the California constitution, the formation and growth of state and local government, the social, political, economic and cultural forces in the growth of modern California with special emphasis on the state's ethnic diversity. CSU, UC

HIST-125  History of the United States: A Mexican American Perspective
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course covers U.S. history from 1848 to the present with an emphasis on the role of Mexican-origin people, both immigrants and U.S. born. It examines the history from a social, political, economic, and cultural perspective. It emphasizes the contributions of Mexican-origin people to the multicultural development of contemporary American society, including their interaction with other Latino communities, as well as people of European, African, Asian, and Native descent. The impact of U.S. attitudes and policies on Mexican-origin peoples is also addressed. CSU, UC

HIST-126  The American West
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of the movement of the American people from the Atlantic seaboard across North America and into the Pacific. Focusing on the Westward Movement during the nineteenth century, it examines this historical experience from a social, political, economic, and cultural perspective up to the present. It emphasizes, too, the role of the diverse ethnic and racial communities of the West and their interaction with one another, as well as their contributions to the construction of the American national character. CSU, UC

HIST-127  African American Perspective History of the US to 1865
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of the United States from the perspective of African Americans, comparing the African experience with the experiences of Europeans, Native Americans, Asian Americans and Hispanics. Part of the course will be devoted to the U.S. government and the Constitution, the California government and Constitution, and other constitutional models for comparison and contrast. The course will examine the early African presence in America, the origins of the slave trade, and explore political, economic, demographic and cultural influences shaping African American life and culture prior to 1865. CSU, UC (credit limits may apply to UC - see counselor)
HIST-128  African American Perspective History of the US after 1865  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course is a survey of the history of the United States from the perspective of African Americans comparing the African American experience with the experiences of Native peoples, Europeans, Asian Americans and Hispanics/Latinos after 1865. The course explores the history of African American economic, cultural, institutional, political, and protest traditions from the post-Civil War period to the present. It also includes African American interaction with national, California state and local governments, especially with respect to the California Constitution. CSU, UC (credit limits may apply to UC - see counselor).

HIST-129  History of Asians and Pacific Islanders in the United States  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
An historical survey of the United States from 1840 to the present, with an emphasis on the Asian and Pacific Islander experience. The course focuses on the major periods of national development such as the Civil War, Reconstruction, Industrialization, Age of Reform, Great Depression, World Wars, Cold War and Vietnam, and Age of Conflict and Reform. Within this broad context, the course will also examine the perspective, developments, increasing diversity of ethnic groups, and contributions of Asians and Pacific Islanders in the United States with an emphasis on California. CSU, UC.

HIST-134  California Travel Study: An Individualized Approach  
1 unit  P/NP  
- 10 hours lecture/18 hours laboratory per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Students must petition to repeat  
This course presents four different historical tours. Students may choose one of the following: The California Missions: Myth and Reality; In Pursuit of Jack London; Historic Sacramento or WWII in the East Bay. Students will complete the course by following a set of printed course instructions, traveling to historic sites in the state, listening to prerecorded lectures about the sites, and completing a written evaluation of the sites. CSU.

HIST-135  History of Latin America - The Colonial Period  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course introduces the student to the history of colonial Latin America from 1492 through the European conquest, the creation of new empires, and the subsequent fall of the latter in the first two decades of the 19th century. The course explores the connections of past and present in the Latin American world including early Latin-American history from pre-Columbian indigenous cultures through the early-nineteenth century independence movements. The course examines how geography, the encounter between pre-Columbian cultures and Spanish/Portuguese colonialism, the introduction of African slavery, and the movements for independence shaped Latin America and its inhabitants. CSU, UC.

HIST-136  History of Latin America - The National Period  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course surveys the history of Latin America during the National Period (from independence to the present), considering the legacies of conquest and 300 years of Spanish colonialism. Latin American political, economic, social and cultural development during the nineteenth and twentieth centuries is examined using specific countries and regions as case studies. The course explores how geography, the encounter between pre-Columbian cultures and Spanish/Portuguese colonialism, the introduction of African slavery, and the movements for independence shaped Latin America and its inhabitants. CSU, UC.

HIST-140  History of Western Civilization to the Renaissance  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
The growth of western civilization to the 17th century. Emphasis is upon developing an understanding of modern civilization by tracing political, economic, social, cultural, and intellectual developments and relationships of the past. CSU, UC.
HIST-141  History of Western Civilization since the Renaissance
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
The history of Western civilization from the 17th century to the present. Emphasis is on understanding how the structures and outlook of modern civilization emerged by tracing political, economic, social, cultural, and intellectual developments from late medieval to contemporary times, with primary emphasis on developments of modern Europe. CSU, UC

HIST-150  History of East Asia (to 1600)
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
History of East Asia, with emphasis on China and Japan, from pre-historical times to the beginning of the 17th century. CSU, UC

HIST-151  History of East Asia (from 1600 - Present)
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
History of East Asia, with emphasis on China and Japan, from the 17th century to the present. The history of Korea and Vietnam will also be considered. CSU, UC

HIST-155  Topics in History
.3-4 units  SC
• Variable hours
A supplemental course in history to provide a study of current concepts and problems in history and related substantive areas. Specific topics will be announced in the schedule of classes. CSU

HIST-160  British Life and Culture
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is designed to introduce the student to British life and culture through a combination of lectures, visits, and readings. HIST-160 will be taught at the London Study Center and will be required of all students in the London Program. CSU

HIST-161  Spanish Life and Culture
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
A survey of Spanish life and culture from historical and contemporary perspectives. Specifically, the course will cover the history, politics, economics, culture, and society of modern-day Spain. This course is taught on-site within the study abroad program. CSU

HIST-170  History of Women in the United States (Pre-Colonial - 1877)
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of United States history (pre-colonial 1877) emphasizing women's life experiences within the context of larger historical changes. The course will examine the commonalities of women's experience based on their gender and the differences among women based on their race, ethnicity, class, and region. The course will explore how women fostered and were affected by social, political, economic, and cultural transformations. The course will consider the impact of the U.S. and California Constitutions and the activities of federal, state, and local governments on the experience of women. CSU, UC (credit limits may apply to UC - see counselor)

HIST-171  History of Women in the United States (1877- Present)
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of United States history (1877-present) emphasizing women's life experiences within the context of larger historical changes. The course will also examine the commonalities of women's experience based on their gender and the differences among women based on their race, ethnicity, class, and region. The course will explore how women fostered and were affected by the industrialization, secularization and urbanization of the United States, and the development of the United States as a world power. Women's abilities to mobilize and change the political institutions at the national, state and local levels will be a main theme. CSU, UC (credit limits may apply to UC - see counselor)

HIST-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department andInstruction Office; topics must extend study beyond courses offered.
An opportunity for students to study special interests under direction of the faculty. CSU
HIST-299  Student Instructional Assistant  
.5-3 units SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

**HORTICULTURE – HORT**

Tish Young, dean  
Biological and Health Sciences Division  
Physical Sciences Building, Room 263

Possible career opportunities

The horticulture program prepares students for numerous state licenses and industry certificates. State licenses include landscape contractor and pest control operator. Industry certifications include: nursery person, arborist, landscape technician, maintenance technician, and irrigation designer. Career choices in horticulture include: nursery technician, propagator, plant breeder, nursery manager, greenhouse grower, greenhouse manager, garden center manager, arborist/tree worker, landscape architect, landscape designer, grounds manager/municipal, landscape contractor, landscape maintenance contractor, golf course manager, and pest controller/advisor. Some career options may require more than two year of college work.

Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Certificates of achievement

Arboriculture  
Horticulture foundations  
Landscape construction and management  
Landscape architecture and design I  
Landscape architecture and design II  
Nursery level I - Retail  
Nursery level II - Wholesale

Certificate of achievement - Arboriculture

This program prepares students for employment as arborists (also called tree trimmers or pruners), fallers, and grounds maintenance workers in a variety of settings including public and private gardens, parks, golf courses, institutions, municipalities, utilities, government agencies, and commercial tree care services. The program is designed to meet ISA (International Society of Arboriculture) Certification requirements. It includes classroom, laboratory, and cooperative work experience/internship.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and on weekends.

required courses  

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOP-180</td>
<td>Internship Occupational Work</td>
<td>1-4</td>
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<tr>
<td>HORT-110*</td>
<td>Introduction to Horticulture</td>
<td>4</td>
</tr>
<tr>
<td>HORT-120*</td>
<td>Soil Science and Management</td>
<td>3</td>
</tr>
<tr>
<td>HORT-120L</td>
<td>Soil Science and Management Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>HORT-134*</td>
<td>Landscape Irrigation</td>
<td>3</td>
</tr>
<tr>
<td>HORT-137L*</td>
<td>Pruning Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>HORT-141*</td>
<td>Tree Identification</td>
<td>3</td>
</tr>
<tr>
<td>HORT-141L</td>
<td>Tree Identification Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>HORT-143*</td>
<td>Shrub Identification</td>
<td>3</td>
</tr>
<tr>
<td>HORT-179</td>
<td>Arboriculture</td>
<td>3</td>
</tr>
<tr>
<td>HORT-179L</td>
<td>Arboriculture Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>HORT-187</td>
<td>Sustainable Water Practices</td>
<td>2.5</td>
</tr>
</tbody>
</table>

total minimum required units  26.5-29.5

* requirement - Horticulture foundations certificate  
**restricted elective - Horticulture foundations certificate

Certificate of achievement - Horticulture foundations

This foundational program introduces students to the broad field of horticulture, which encompasses the functional, aesthetic, and environmentally sound creation and care of our landscapes. Green industry professionals work with urban and natural spaces on a daily basis, improving our quality of life and ensuring the sustainability of our environment. The courses have been designed both for full-time students planning to enter the horticulture field and for those people working in one of the many interesting areas of horticulture who wish to expand their horticultural knowledge. The courses of the horticulture foundations certificate are incorporated into other horticulture certificates, and form the introduction to those programs. Most classes are conducted during convenient evening hours to allow working students to study for a new career and those with jobs in the field of ornamental horticulture to upgrade their skills. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and on weekends.
HORTICULTURE

**Certificate of achievement - Landscape construction and management**

People working in the landscape field derive job satisfaction from enhancing the function and beauty of the environment while being physically active outdoors or helping support that activity in allied sales and service occupations. Landscape work involves construction and planting projects, irrigation system design and water management, and specialty fields such as turf management and tree care. This program provides an introductory base of plant knowledge and landscape skills, allowing students the option of entering a variety of jobs with the preparation for rapid advancement within their chosen occupations. The program emphasizes hands-on learning and most courses incorporate laboratory activities that apply knowledge and skills in realistic settings. The program is actively supported by the local horticulture industry. This program prepares students to enter the landscape construction and management industry. Students are prepared to take the California C-27 Landscape Contracting examination. Elements of the program will assist students to prepare for the California Landscape Contractors Association’s CLT examination and/or the California Association of Nurseryperson’s certification examination.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and on weekends.

**Certificate of achievement - Landscape architecture and design**

This program prepares students for entry-level positions in landscape architecture and design. The program focuses primarily on design for residential landscape situations and small commercial sites. Projects may range from the design of small focal planting beds and perennial borders to complete garden layouts. Garden designers provide the planting design in addition to developing the landscape spatial composition. The advent of computer-assisted design (CAD) technology in the landscape industry adds a new dimension to skill and training requirements for landscape and garden designers. Contra Costa County’s landscape industry is expanding, and demand for employees with landscape design skills including CAD contributes to the need for students to augment their design and drafting expertise with CAD skills. Elements of the program will assist students to prepare for the California Association of Nurseryperson’s certification examination. Students will develop portfolios that may be necessary for entrance into landscape design baccalaureate degree programs at University of California, Davis, California Polytechnic State University at San Luis Obispo, and Pomona.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and on weekends.

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**required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>HORT-110</td>
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</tr>
<tr>
<td>HORT-120</td>
<td>3</td>
</tr>
<tr>
<td>HORT-134</td>
<td></td>
</tr>
<tr>
<td>HORT-137L</td>
<td>1</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>HORT-141</td>
<td>3</td>
</tr>
<tr>
<td>HORT-143</td>
<td>3</td>
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</table>

**plus at least 1.5 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<td>HORT-130</td>
<td>3</td>
</tr>
<tr>
<td>HORT-146</td>
<td>1.5</td>
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</tbody>
</table>

**total minimum required units** 24.5

* requirement - Horticulture foundations certificate
** restricted elective - Horticulture foundations certificate

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**Certificate of achievement - Landscape architecture and design**

This program prepares students for entry-level positions in landscape architecture and design. The program focuses primarily on design for residential landscape situations and small commercial sites. Projects may range from the design of small focal planting beds and perennial borders to complete garden layouts. Garden designers provide the planting design in addition to developing the landscape spatial composition. The advent of computer-assisted design (CAD) technology in the landscape industry adds a new dimension to skill and training requirements for landscape and garden designers. Contra Costa County’s landscape industry is expanding, and demand for employees with landscape design skills including CAD contributes to the need for students to augment their design and drafting expertise with CAD skills. Elements of the program will assist students to prepare for the California Association of Nurseryperson’s certification examination. Students will develop portfolios that may be necessary for entrance into landscape design baccalaureate degree programs at University of California, Davis, California Polytechnic State University at San Luis Obispo, and Pomona.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and on weekends.

**required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
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<td>HORT-180</td>
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<td>HORT-181</td>
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<tr>
<td>HORT-182</td>
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<tr>
<td>HORT-184</td>
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**plus at least 6 units from:**

<table>
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<th>Course</th>
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<tr>
<td>HORT-145</td>
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</tr>
<tr>
<td>HORT-147</td>
<td>3</td>
</tr>
<tr>
<td>HORT-148L</td>
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<tr>
<td>HORT-165</td>
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</tr>
</tbody>
</table>

**total minimum required units** 19

* restricted elective - Horticulture foundations certificate
Certificate of achievement - Landscape architecture and design II

This program prepares students for employment as landscape designers, groundskeepers, outside maintenance workers, grounds supervisors, landscape gardeners, and landscape technicians. It is designed to meet the needs of self-employed landscape contractors who wish to increase their landscape design skills. Elements of the program will assist students to prepare for the California Association of Nurseryperson’s certification examination. Although this program is not designed as a transfer program to a baccalaureate-level landscape architecture program, this coursework will provide a solid foundation and acquaintance with the design tools used by the landscape architect. The program design includes classroom, laboratory, and cooperative work experience/internship.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and on weekends.

**required courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>COOP-180</td>
<td>Internship in Occupational Work Experience Education</td>
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<tr>
<td>HORT-180</td>
<td>Introduction to Landscape Architecture</td>
<td>3</td>
</tr>
<tr>
<td>HORT-181</td>
<td>Landscape Design I: Graphics</td>
<td>3</td>
</tr>
<tr>
<td>HORT-182</td>
<td>Landscape Design II</td>
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<tr>
<td>HORT-184</td>
<td>Planting Design</td>
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<tr>
<td>HORT-185</td>
<td>Site Analysis</td>
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<tr>
<td>HORT-186</td>
<td>Grading and Drainage</td>
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*plus a minimum of 4 units from:

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<tbody>
<tr>
<td>ARCHI-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
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*required courses*

<table>
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<tr>
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<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>HORT-140</td>
<td>Pest Management</td>
<td>1</td>
</tr>
<tr>
<td>HORT-141*</td>
<td>Tree Identification</td>
<td>3</td>
</tr>
<tr>
<td>HORT-145*</td>
<td>Groundcovers and Vines Identification</td>
<td>3</td>
</tr>
<tr>
<td>HORT-147*</td>
<td>Annuals and Perennials Identification</td>
<td>3</td>
</tr>
<tr>
<td>HORT-148L</td>
<td>California Native Plants Laboratory</td>
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</tr>
<tr>
<td>HORT-155</td>
<td>New Plant Introductions</td>
<td>3</td>
</tr>
</tbody>
</table>

*total minimum required units** 25.5

**restricted elective - Horticulture foundations certificate**

Certificate of achievement - Nursery level II - Wholesale

This program prepares students for employment in wholesale greenhouses, florists, growers, and nurseries. It will assist students preparing for the California Association of Nurseryperson’s exam. The program design includes classroom, laboratory, and cooperative work experience/internship.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and on weekends.

**required courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOP-180</td>
<td>Internship in Occupational Work Experience Education</td>
<td>1-4</td>
</tr>
<tr>
<td>HORT-110*</td>
<td>Introduction to Horticulture</td>
<td>4</td>
</tr>
<tr>
<td>HORT-120*</td>
<td>Soil Science and Management</td>
<td>3</td>
</tr>
<tr>
<td>HORT-132</td>
<td>Pest Management</td>
<td>1</td>
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<tr>
<td>HORT-134*</td>
<td>Landscape Irrigation</td>
<td>3</td>
</tr>
<tr>
<td>HORT-137L</td>
<td>Pruning Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>HORT-141**</td>
<td>Tree Identification</td>
<td>3</td>
</tr>
<tr>
<td>HORT-165</td>
<td>New Plant Introductions</td>
<td>3</td>
</tr>
<tr>
<td>HORT-183</td>
<td>Residential Garden Design</td>
<td>1</td>
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<tr>
<td>HORT-187</td>
<td>Sustainable Water Practices</td>
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*plus at least 3 units from:

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>HORT-145</td>
<td>Groundcovers and Vines Identification</td>
<td>3</td>
</tr>
<tr>
<td>HORT-147</td>
<td>Annuals and Perennials Identification</td>
<td>3</td>
</tr>
</tbody>
</table>

*total minimum required units** 25.5

**requirement - Horticulture foundations certificate**

**restricted elective - Horticulture foundations certificate**

Certificate of achievement - Nursery level I - Retail

This program prepares students for employment in garden centers, landscape companies, greenhouses, florists, and retail nurseries. It will assist students preparing for the California Association of Nurseryperson’s exam. The program design includes classroom, laboratory, and cooperative work experience/internship.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening, and on weekends.
HORT-090NC Adaptive Horticulture - Basic Skills and Practices
0 unit
• Non degree applicable
• Variable hours
• Note: This is a non-credit open entry/open exit course
A horticultural and vocational training class adapted for students with special needs. Students will learn basic horticultural skills in a garden, nursery and landscape setting.

HORT-091NC Adaptive Horticulture - Nursery Skills and Practices
0 unit
• Non degree applicable
• Variable hours
• Note: This is a non-credit open entry/open exit course
A horticultural and vocational training class adapted for students with special needs. This class will focus on nursery and plant propagation skills. Students will work in the DVC garden and in the adaptive horticulture nursery where they will learn pre-vocational and vocational training skills associated with nursery production in the nursery and in the garden.

HORT-092NC Adaptive Horticulture - Landscape Skills and Practices
0 unit
• Non degree applicable
• Variable hours
• Note: This is a non-credit open entry/open exit course
A horticultural and vocational training class adapted for students with special needs. Students will learn pre-vocational and vocational training skills for a garden, residential, and commercial setting.

HORT-110 Introduction to Horticulture
4 units
• 54 hours lecture/54 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
Introduction to horticulture explores the biology and economics of growing and care for plants. The course covers the breadth of basic horticulture practices and the biological and environmental principles on which they are based. The students are exposed to a variety of field studies that stress the practical applications of horticulture science: propagation, plant identification, pest/disease identification and control options, environmentally safe use of pesticides, and factors for favorable plant growth. There will be an overview to the different aspects of the horticulture industry. CSU, UC

HORT-120 Soil Science and Management
3 units
• 54 hours lecture per term
• Recommended: HORT-110 and eligibility for ENGL-122 or equivalents
• Formerly HORT-164
An introductory course on soil science and management of soils in landscapes. Soil biology, physics and chemistry are integrated with geological concepts in the applied scientific course. Landscape scale projects and solutions are evaluated in terms of their soils related elements. CSU, UC

HORT-120L Soil Science and Management Laboratory
1 unit
• 54 hours laboratory per term
• Prerequisite: HORT-120 or equivalent (may be taken concurrently)
• Recommended: HORT-110 and eligibility for ENGL-122 or equivalents
• Formerly HORT-164L
This is a laboratory unit supplementing the Soil Science and Management course HORT-120. Field trips, demonstrations and experiments will deepen the methodological knowledge of students in this field. CSU

HORT-125 Plant Pests and Diseases
3 units
• 54 hours lecture per term
• Recommended: HORT-110 and eligibility for ENGL-122 or equivalents
• Note: This course meets the California State Pest Control Advisor, California Association of Nurserymen, and International Society of Arboriculture Continuing Education Units (CEU) license certification for CEUs necessary for pest control operators and advisors
• Formerly HORT-161
Survey of major plant pests and diseases in Northern California, including bacteria, fungi, insects and mites. This course includes an introduction to the identification and recognition of pests, beneficials and diseases associated with plants. Emphasis will be on the biology of pest and beneficial species, and the ecologies within which they occur. Pest management will be presented using Integrated Pest Management (IPM) and Plant Health Care (PHC) models. Lectures will focus on key concepts in applied ecology, along with pest, beneficial and disease identification. CSU

HORT-130 Turf Grass Management
1.5 units
• 18 hours lecture/27 hours laboratory per term
An introduction to the field of turf grass management including production, installation and maintenance of various types of turf grass will be studied. Proper use of water, fertilizers and pest control will be examined. CSU
HORT-132  Pest Management  
1 unit  SC  
- 9 hours lecture/27 hours laboratory per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
Course offers students an opportunity to examine and try different methods and tools for managing pests in the urban environment with special emphasis on preparation and continuing education for the California Pest Control Operator’s License (PCO) and Pest Control Advisors License (POA). CSU

HORT-133  Landscape Construction  
3 units  SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly HORT-171  
Landscape Construction is intended to prepare the student with the skills and tools required to implement typical landscape hardscape features used in the landscape industry. The class will emphasize the practical application of these skills and tools. This course helps prepare for the C-27 landscape contracting license. CSU

HORT-134  Landscape Irrigation  
3 units  SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly HORT-177  
Course is designed for landscape professionals to successfully plan, assemble components and install a landscape irrigation system to provide adequate irrigation of a landscape site. The course helps prepare for the C-27 landscape contracting license. CSU

HORT-135  Landscape Estimating and Contract Documents  
3 units  SC  
- 54 hours lecture per term  
- Recommended: HORT-133 or equivalent  
This course is an introduction to professional landscape estimating, bidding and contract document preparation based on landscape plans. CSU

HORT-137L  Pruning Laboratory  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: HORT-110 or equivalent  
This course will familiarize students with basic pruning techniques necessary for landscape management and maintenance. This course is part of the basic training in the Horticulture program. CSU

HORT-141  Tree Identification  
3 units  SC  
- 54 hours lecture per term  
- Recommended: HORT-110 and eligibility for ENGL-122 or equivalents  
- Note: This course meets the plant certification for California Association for Nurserymen; California Landscape Contractor’s Licensing and satisfies International Society of Arboriculture Continuing Education units  
Taxonomic and nomenclatural identity, habits of growth, liabilities, and geographical origin of landscape trees: native and exotic. Focus on tree valuation, landscape use, and structural analysis of species from nursery stock to mature specimens. CSU

HORT-141L  Tree Identification Laboratory  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: HORT-110 or equivalent  
- Note: This course satisfies continuing education unit requirements for the International Society of Arboriculture Professional upgrades  
Field identification of trees, native and exotic. Cultural requirements, landscape design criteria and functional values. Field outings to local gardens and arboreta. Planting site analysis compared to tree candidate requirements are linked to standard arboricultural rating systems. CSU

HORT-143  Shrub Identification  
3 units  SC  
- 54 hours lecture per term  
- Recommended: HORT-110, HORT-140 and eligibility for ENGL-122 or equivalents  
- Note: This course meets the plant certification for California Association of Nurserymen; California Landscape Contractor’s Licensing and satisfies International Society of Arboriculture Continuing Education units  
Taxonomy, identity, growth habits, landscape values and nativities of shrubs, native and exotic, used in the urban landscape. Emphasis on contemporary and historical landscape design with shrubs, from maritime to continental environments. CSU

HORT-143L  Shrub Identification Laboratory  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: HORT-110 or equivalent  
- Note: This course satisfies California Association of Nurserymen’s continuing education requirements for members  
Field identification of shrubs, native and exotic. Cultural care requirements, landscape design criteria, and functional values. Field outings to local gardens and arboreta and parks. Introduction and identification of shrubs species less commonly seen in Mediterranean climate setting. CSU
HORT-145  Groundcovers and Vines Identification  
3 units  SC  
- 54 hours lecture per term  
- Recommended: HORT-110 and eligibility for ENGL-122 or equivalents  
- Note: This course meets the plant certification requirements for California Association of Nurserymen and current guidelines for State of California Landscape Contractors Association  
Taxonomy identity, habits of growth, cultural requirements and geographical origin of groundcovers and vines, native and exotic, used in the urban landscape. Analysis and evaluation of local landscape settings that appropriately support groundcover species. Aerial and edaphic requirements of 180 species introduced and discussed. CSU

HORT-146  Ornamental Grass Identification  
1.5 units  SC  
- 27 hours lecture per term  
- Note: Field trips will be required for this course  
This course will acquaint students with ornamental grasses and grass-like plants available for use in developing landscapes. Discussion will include native and non-native species suitable for a wide variety of environments. CSU

HORT-147  Annuals and Perennials Identification  
3 units  SC  
- 54 hours lecture per term  
- Recommended: HORT-110 and eligibility for ENGL-122 or equivalents  
- Note: This course meets the plant certification requirements for California Association of Nurserymen and current guidelines for the state of California licensing for landscape contractors  
Taxonomic identity, habits of growth, liabilities, cultural preferences and geographical origin of annual and perennials, native and exotic, used in the urban landscape. CSU

HORT-147L  Annuals and Perennials Identification Laboratory  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: HORT-110 or equivalent  
Field identification of annuals and perennials, native and exotic. Cultural requirements, landscape design criteria, and the functional values. Field outings to local gardens and arboreta. CSU

HORT-148L  California Native Plants Laboratory  
1 unit  SC  
- 54 hours laboratory per term  
- Note: Trip location varies for each course offering. Multiple day field trips to select California vegetation environments are taken to record relevant plant and habitat data.  
- Formerly HORT-148  
This is a field identification course of California native plants intended for landscape professionals involving the study of California plant communities and the environments that shape them. This course is designed to acquaint the landscape design student with the dominant and typical plant constituents of each vegetation unit in California focusing primarily on those native species currently used in the nursery industry. Habitat, soil and climatic factors are discussed in relationship with the plant species established in their natural and horticultural environment. The focus of this offering is the assimilation of more than 200 native species into the design portfolio of horticulture students for implementation in local landscapes. CSU

HORT-150  Topics in Horticulture  
3-4 units  SC  
- Variable hours  
A supplemental course in horticulture to provide a study of current concepts and problems in horticulture and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

HORT-160  Plant Propagation  
1.5 units  SC  
- 18 hours lecture/36 hours laboratory per term  
- Recommended: HORT-110 and eligibility for ENGL-122 or equivalents  
This course will teach the principles and practices of plant propagation by growing plants from seed and cuttings into marketable nursery stock. It will teach the student to understand the physiological process that a plant part goes through in becoming a living plant. CSU

HORT-163  Nursery and Greenhouse Practices  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course is designed to introduce the student to the nursery industry and explore the science of greenhouse management. Topics cover all aspects: from greenhouse design and structure, manufacturing and operation, to the business structure and management of a nursery. CSU
HORT-165  New Plant Introductions  
3 units  SC
- 54 hours lecture per term
- Recommended: HORT-110 and eligibility for ENGL-122 or equivalents

This course will help students learn the multitude of new plants becoming available in the nursery industry. It will help instruct the student in the selecting, testing and marketing process. It will cover the taxonomic identity of new plant introductions, habits of growth, liabilities, and geographical origin of plant materials used in the urban landscape. CSU

HORT-166  Fall Plant Production  
1 unit  SC
- 54 hours laboratory per term
- Recommended: HORT-160 and eligibility for ENGL-122 or equivalents

A continuing course on the principles and practices of container production. This course is designed to help students learn greenhouse management, the scheduling of fall and winter plant production and the marketing of fall and winter grown containerized nursery stock. CSU

HORT-167  Spring Plant Production  
1 unit  SC
- 54 hours laboratory per term
- Recommended: HORT-160 and eligibility for ENGL-122 or equivalents

A course on the principles and practices of container production. This course is designed to help students learn greenhouse management, the scheduling of spring and summer plant production and the marketing of spring and summer grown containerized nursery stock. CSU

HORT-179  Arboriculture  
3 units  SC
- 54 hours lecture per term
- Recommended: HORT-110 and HORT-141 and eligibility for ENGL-122 or equivalents
- Note: This course satisfies the continuing education requirement for the International Society of Arboriculture and the California Association of Nurserymen.

Introduction to arboriculture, applied tree biology and forest ecology. How to care for and maintain trees in urban, rural and wildland settings. This course is a survey of current knowledge of trees as applied to tree care, landscape maintenance and landscape design fields. CSU

HORT-179L  Arboriculture Laboratory  
1 unit  SC
- 54 hours laboratory per term
- Recommended: HORT-141, HORT-179 (should be taken concurrently) and eligibility for ENGL-122 or equivalents

Designed for new horticulture students and professionals alike, this course introduces the concepts and features required to prune woody species for aesthetics and health. CSU

HORT-180  Introduction to Landscape Architecture  
3 units  SC
- 54 hours lecture per term
- Recommended: HORT-110 and ENGL-122 or equivalents

This course is an introduction to the basic principles and concepts in the field of landscape architecture and landscape design. It will explore the history of human impact on natural environments and methods to mitigate those impacts. Design standards and practices governing landscape architecture and design like site analysis, planning and construction design will be covered. CSU, UC

HORT-181  Landscape Design I: Graphics  
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: HORT-110 and eligibility for ENGL-122 or equivalents
- Formerly HORT-170

This is the first out of two courses in landscape design techniques and concepts. It will cover the basics of the landscape design process; site analysis, methods of graphic representation of vegetation, topography, and other landscape elements. Students will explore different landscape design documents. CSU, UC

HORT-182  Landscape Design II  
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: HORT-181, ARCHI-130 or equivalents, and eligibility for ENGL-122 or equivalent
- Formerly HORT-174

This is the second of two courses in landscape design techniques and concepts. It will continue to cover and broaden the landscape design process including analysis, evaluation and application of various landscape principles based upon historical and ecological values. CSU, UC

HORT-183  Residential Garden Design  
1 unit  SC
- 18 hours lecture per term

This course is intended for students in the nursery industry and landscape construction as well as interested laypersons. Principles and techniques will be addressed as they apply to established residential landscapes. Students will be required to develop a conceptual plan for a residential garden. CSU
HORT-184  Planting Design  
2.5 units  SC  
• 36 hours lecture/18 hours laboratory per term  
• Recommended: HORT-181 and HORT-182 or equivalents  

This course will acquaint the student with the principles of design as they specifically apply to landscape plant material. Design principles will address various plant and hardscape palettes to develop an aesthetically pleasing, water-wise and environmentally sensitive landscape planting design. CSU  

HORT-185  Site Analysis  
1.5 units  SC  
• 18 hours lecture/27 hours laboratory per term  
• Recommended: HORT-182 or equivalent  

This course is an introduction to the field of landscape design and the profession of landscape architecture. Landscape fundamentals are introduced, with an emphasis on the understanding of space and form in the landscape, and how a sustainable landscape design can convey meaning while fulfilling functional requirements. CSU  

HORT-186  Grading and Drainage  
1.5 units  SC  
• 18 hours lecture/27 hours laboratory per term  
• Recommended: HORT-182 or equivalent  

In this course students will evaluate a landscape site and create and modify topography plans for proper grading and drainage of the site. CSU  

HORT-187  Sustainable Water Practices  
2.5 units  SC  
• 36 hours lecture/18 hours laboratory per term  

This course in landscape irrigation and sustainable water practices is designed for landscape professionals. It includes an overview of state and local water delivery systems and important water use and supply issues in California. It examines relationships among plants, soils, and water. Water audits, proper irrigation design and monitoring techniques that aid in the efficient use of local water resources will be addressed. CSU  

HORT-299  Student Instructional Assistant  
.5-3 units  SC  
• Variable hours  
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.  

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU  

HU MANITIES – HUMAN  

Michael Almaguer, dean  
Applied and Fine Arts  
Business and Foreign Language Building, Room 204  

Possible career opportunities  
The study of humanities can open up career opportunities in such diverse fields as advertising, banking, foreign service, journalism, law, public administration, publishing, and teaching.  

Program level student learning outcomes  
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.  

Associate in arts in letters and science degree  
Area of emphasis - Humanities  

Associate in arts in letters and science degree - area of emphasis - Humanities  
This degree program is designed for students who wish to study a broad range of college courses and complete additional coursework in an “area of emphasis”. Programs with an area of emphasis are designed to allow students to engage in an interdisciplinary study of a subject that is not limited to a single discipline. Many areas of emphasis programs provide preparation for study at four-year institutions.
The humanities area of emphasis is comprised of courses that integrate the different arts: music, dance, visual arts, architecture, literature, drama, philosophy and history. The area of emphasis provides a well rounded and rich background in the creative and intellectual expression of major world civilizations, intellectual and cultural movements, and individual works of creative expression. Humanities students develop skills in artistic analysis, aesthetic judgments, and other modes of critical thinking. Students develop the ability to view cultural material from multiple perspectives, appreciate and evaluate diverse forms of cultural expression, and understand the criticism and theory regarding major artistic works, styles, forms and movements.

DVC Humanities students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU G.E.). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate in arts degree with an area of emphasis in humanities, students must complete each required course with a "C" grade or higher, and complete general education requirements as listed in the catalog. Degree requirements can be completed by attending classes in the day, the evening, or both. Certain courses may satisfy both area of emphasis and general education requirements; however, the units are only counted once.

**area of emphasis requirements**

**complete at least 9 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTHS-190 Topics in Art History</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-193 History of Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-195 History of Prehistoric and Ancient Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-196 History of Medieval and Renaissance Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-197 History of Baroque to Early 20th Century Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-199 Contemporary Art History</td>
<td>3</td>
</tr>
<tr>
<td>DANCE-201 Western Culture Dance History: 20th Century to Present</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-141 History of the Theater: 17th Century to Present</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-142 Multicultural Perspectives in American Theater</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-181 Literature of World Drama: 17th Century to Present</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-123 Critical Thinking: Composition and Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-126 Critical Thinking: The Shaping of Meaning in Language</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-150 Introduction to Literature</td>
<td>3</td>
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<tr>
<td>ENGL-151 The Short Story</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-154 Shakespeare and His World</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-155 Studies in Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-170 World Mythology</td>
<td>3</td>
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<tr>
<td>ENGL-180 Literature of the Drama</td>
<td>3</td>
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<tr>
<td>ENGL-253 Survey of Late English Literature</td>
<td>3</td>
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<tr>
<td>ENGL-272 Early World Literature</td>
<td>3</td>
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<tr>
<td>ENGL-273 Late World Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-110 Introduction to Music Literature</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-112 America’s Music - A Multicultural Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-114 World Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-117 History of Rock and R&amp;B</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-118 History of Jazz</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 18

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**HUMAN-105 Introduction to Humanities: Arts and Ideas**

3 units  
* 54 hours lecture per term  
* Recommended: Eligibility for ENGL-122 or equivalent  

This is a non-chronological course that introduces students to the integration of creative arts and the world of ideas. Students will learn to analyze, interpret, and relate masterworks selected from literature, music, drama, painting, sculpture, photography, architecture, dance, and film, to trends in philosophy, religion and scientific thought. Works from diverse global cultures may be selected from throughout the various ages of history. Emphasis is placed on the student’s personal interaction with human creative expression. CSU, UC
HUMAN-108  The Roots of Hell
3 units  SC  
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This is an introductory course which is organized historically around the theme of hell; an historical and cross-cultural analysis of how poets, philosophers and artists have dealt with the dark side of human nature and represented life after death, guilt and responsibility, trial and redemption, and personal growth and enlightenment, offering literature, philosophy, art, architecture, sculpture, music and film from international sources. CSU, UC

HUMAN-110  Introduction to Humanities: Ancient Civilizations (to 500 A.D.)
3 units  SC  
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This is an introductory course that integrates the visual arts, music, literature, drama, architecture, philosophy and history. Students will study selections from original texts of literature and philosophy from ancient Egypt and Mesopotamia through the late Roman period (A.D. 500). CSU, UC

HUMAN-111  The Middle Ages and Renaissance (500 A.D.-1700 A.D.)
3 units  SC  
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This is an introductory course that integrates the visual arts, music, literature, drama, architecture, philosophy and history. Students will study selections from original texts of literature and philosophy from the end of the Roman period to the end of the Renaissance. CSU, UC

HUMAN-112  Introduction to Humanities: The Modern World (1700-Present)
3 units  SC  
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This is an introductory course that integrates the visual arts, music, literature, drama, architecture, philosophy and history. Students will study selections from original texts of literature and philosophy from the end of the Renaissance to the present. CSU, UC

HUMAN-115  Introduction to Humanities: The American Multicultural Experience
3 units  SC  
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This class will explore the multicultural diversity of contemporary American creative expression through an integrative survey of the visual arts, literature, music, thought and religion, dance, theater, and film. Study will focus on at least three of the following cultural groups: African-American, Native Indian, Asian-American, and Latino-American. This course will examine contemporary creative works in relation to their historical roots, as well as the contemporary cultural context in which they have been created. CSU, UC

HUMAN-116  The Arts and Culture of Asia
3 units  SC  
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This is an introductory course that studies selected visual arts, architecture, literature, philosophy, religion, music, theater, and cinema of Asian cultures, in a framework that includes both history and the modern world. The cultures studied will be selected from the following: East Asia, Southeast Asia, South Central Asia, Central Asia, the Middle East, and North Asia/Transcucasia. CSU, UC

HUMAN-118  Film, Fiction, and Criticism
3 units  SC  
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
Students will examine the aesthetic make-up of masterworks of literature chosen from the novel, the short story and the play, and will learn to draw intelligent conclusions about the structure and meaning of these literary works. Students will be introduced to the hands-on integration of three areas of the humanities - literature, cinema/video, and the branch of philosophy called aesthetic criticism. CSU, UC

HUMAN-123  American Popular Culture
3 units  SC  
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This is an introductory humanities course studying American popular culture: arts, entertainment, myths, the heroic tradition, and symbols. CSU, UC (credit limits may apply to UC - see counselor)
HUMAN-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.

An opportunity for advanced students to pursue special interests under direction of the humanities faculty. CSU

HUMAN-299  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ITALIAN - ITAL

Students with prior foreign language instruction should check with a language teacher regarding proper placement in foreign language courses. The following system is generally used to determine the appropriate term of college work based on high school language: two years equal one college term; three years equal two college terms; four years equal three college terms.

Michael Almaguer, dean
Applied and Fine Arts
Business and Foreign Language Building, Room 204

Possible career opportunities
The study of Italian can open up opportunities in communications, foreign trade and banking, transportation, government, the Foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Italian

Certificate of achievement
Italian

Associate in arts - Italian
The associate in arts degree in Italian at DVC will provide students with skills in understanding, speaking, reading and writing Italian. It also gives students a greater understanding of Italian culture and civilization and will prepare them for a broad range of international and domestic career opportunities and professions. The degree will also provide students the opportunity to transfer to UC, CSU and other four year colleges and universities to earn a bachelor’s degree.

The DVC Italian major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate-granting institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU Breadth). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a credit/no credit option for major courses and each of the major requirements must be completed with a “C” grade or higher. Certain courses may satisfy both major and general education requirements; however, the units are counted only once.

To earn an associate degree in Italian, students must complete 20 units from the list of major requirements, which will provide students with the essential grammar of the language, culture and basic literature of Italy. Students with no previous knowledge of Italian when entering DVC will take the first four courses in the list for a total of 20 units. If students enter the program with previous knowledge of Italian, they may start at the second term level and take fifth and sixth terms to achieve a total of 21 units.

complete at least 20 units from:
ITAL-120  First Term Italian........................................... 5
ITAL-121  Second Term Italian...................................... 5
ITAL-220  Third Term Italian......................................... 5
ITAL-221  Fourth Term Italian....................................... 5
ITAL-230  Fifth Term Italian......................................... 3
ITAL-231  Sixth Term Italian......................................... 3
total minimum required units 20

Certificate of achievement - Italian
This certificate of achievement was created to give students the opportunity to show potential employers in this country and in other countries that the student has completed a certain number of courses in Italian and prepares students with an intermediate to advanced knowledge of Italian and familiarizes them with the culture of Italy.
This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of at least 13 units from the following lists of courses which must be completed with a “C” grade or higher.

**List A**

ITAL-120 First Term Italian ................................................ 5  
ITAL-121 Second Term Italian ........................................ 5  
ITAL-220 Third Term Italian ................................ ........... 5  
ITAL-221 Fourth Term Italian ........................................... 5  
ITAL-230 Fifth Term Italian .............................................. 3  
ITAL-231 Sixth Term Italian ............................................. 3  

**List B**

ITAL-121 Second Term Italian ........................................ 5  
ITAL-155 First Term Conversational Italian ...................... 3  
ITAL-156 Second Term Conversational Italian ................. 3  
ITAL-157 Third Term Conversational Italian .................. 3  
ITAL-220 Third Term Italian ........................................... 5  
ITAL-221 Fourth Term Italian ........................................... 5  

**Total minimum required units** 13

ITAL-120 **First Term Italian**

5 units SC  
- 90 hours lecture/18 hours laboratory per term  
This is a basic course in understanding, speaking, reading, and writing Italian. There is an extensive utilization of cultural material and information. CSU, UC

ITAL-121 **Second Term Italian**

5 units SC  
- 90 hours lecture/18 hours laboratory per term  
- Recommended: ITAL-120 or equivalent  
This is a sequential course in Italian, including the understanding, speaking, reading, and writing of the language; a continuation of basic communicative structures and functions as well as a continued examination of the culture of Italy. CSU, UC

ITAL-150 **Topics in Italian**

3-4 units SC  
- Variable hours  
A supplemental course in Italian to provide a study of current concepts and problems in Italian and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ITAL-155 **First Term Conversational Italian**

3 units SC  
- 54 hours lecture/18 hours laboratory per term  
- Note: Course does not satisfy the academic requirements of the ITAL-120-121 series  
This course provides instruction in basic Italian conversation utilizing practical material with oral-aural practice based on this material. CSU

ITAL-156 **Second Term Conversational Italian**

3 units SC  
- 54 hours lecture/18 hours laboratory per term  
- Recommended: ITAL-155 or equivalent  
Note: Course does not satisfy the academic requirements of the ITAL-120-121 series  
This course improves conversational skills through a study and utilization of idiomatic and slang expressions current in contemporary Italian. Some study in dialect expressions is undertaken. CSU

ITAL-220 **Third Term Italian**

5 units SC  
- 90 hours lecture/18 hours laboratory per term  
- Recommended: ITAL-121 or equivalent  
This is an intermediate level course that develops functional fluency in understanding, speaking, reading, and writing Italian. Students are introduced to the study of Italian culture. There is further study and interpretation of Italian cultural. CSU, UC

ITAL-221 **Fourth Term Italian**

5 units SC  
- 90 hours lecture/18 hours laboratory per term  
- Recommended: ITAL-220 or equivalent  
This is an intermediate course that continues to develop fluency in all aspects of the Italian language with particular attention to literary forms as reflected in contemporary Italian. The present, past and imperfect subjunctive are covered. CSU, UC

ITAL-230 **Fifth Term Italian**

3 units SC  
- 54 hours lecture per term  
- Recommended: ITAL-221 or equivalent  
This course is a study of representative, Italian literary works. Students participate actively through discussion, oral reports, and written analysis in Italian. CSU, UC

ITAL-231 **Sixth Term Italian**

3 units SC  
- 54 hours lecture per term  
- Recommended: ITAL-230 or equivalent  
This is a continuation of ITAL-230 with intensive additional study of representative literary works. Students read various types of literature and participate actively through discussion, written reports and written analysis in Italian. CSU, UC
ITAL-299  Student Instructional Assistant  
.5-3 units  SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.  

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

JAPANESE – JAPAN

Students with prior foreign language instruction should check with a language teacher regarding proper placement in foreign language courses. The following system is generally used to determine the appropriate term of college work based on high school language: two years equal one college term; three years equal two college terms; four years equal three college terms.

Michael Almaguer, dean  
Applied and Fine Arts  
Business and Foreign Language Building, Room 204

Possible career opportunities

The study of Japanese can open up opportunities in communications, foreign trade and banking, transportation, government, the Foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.

Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Certificate of achievement - Japanese

This certificate of achievement was created to give students the opportunity to show potential employers in this country and in other countries that the student has completed a certain number of courses in Japanese and prepares students with an intermediate to advanced knowledge of Japanese and familiarizes them with the culture of Japan.

This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of at least 13 units from one of the following lists of courses which must be completed with a “C” grade or higher.

Associate in arts degree - Japanese

The associate in arts degree in Japanese at DVC will provide students with skills in understanding, speaking, reading and writing Japanese. The curriculum exposes students to Japanese culture and civilization and provides foundational skills in language that can apply to a broad range of international and domestic career opportunities and professions. The degree will provide lower division preparation for transfer to UC, CSU and other four year colleges and universities to earn a bachelor’s degree.

The DVC Japanese major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate-granting institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU Breadth). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a credit/no credit option for major courses and each of the major requirements must be completed with a “C” grade or higher. Certain courses may satisfy both major and general education requirements; however, the units are counted only once.

Students must complete the 20 units of major requirements and may select up to 9 units from the elective courses. The core courses provide students with the essential grammar of the language and culture of Japan. The elective courses provide students with practice in Kanji characters used in writing the Japanese language.

major requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>JAPAN-120 First Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-121 Second Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-220 Third Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-221 Fourth Term Japanese</td>
<td>5</td>
</tr>
</tbody>
</table>

plus 0-9 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPAN-130 First Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-131 Second Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-132 Third Term Kanji</td>
<td>3</td>
</tr>
</tbody>
</table>

| total minimum required units | 20 |

Certificate of achievement - Japanese

This certificate of achievement was created to give students the opportunity to show potential employers in this country and in other countries that the student has completed a certain number of courses in Japanese and prepares students with an intermediate to advanced knowledge of Japanese and familiarizes them with the culture of Japan.

This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of at least 13 units from one of the following lists of courses which must be completed with a “C” grade or higher.
JAPANESE

List A
JAPAN-120 First Term Japanese......................... 5
JAPAN-121 Second Term Japanese....................... 5
JAPAN-220 Third Term Japanese......................... 5
JAPAN-221 Fourth Term Japanese....................... 5

List B
JAPAN-120 First Term Japanese......................... 5
JAPAN-130 First Term Kanji............................ 3
JAPAN-131 Second Term Kanji.......................... 3
JAPAN-132 Third Term Kanji............................ 3
total minimum required units 13

JAPAN-120 First Term Japanese
5 units  SC
- 90 hours lecture/18 hours laboratory per term
This course is an introduction to the Japanese language. Using realistic situations, students will learn proper pronunciation, vocabulary, basic grammar, sentence structure, two types of Japanese characters (Hiragana and Katakana) and realistic aspects of Japanese culture. Basic Kanji characters will be introduced. CSU, UC (credit limits may apply to UC - see counselor)

JAPAN-121 Second Term Japanese
5 units  SC
- 90 hours lecture/18 hours laboratory per term
- Recommended: JAPAN-120 or equivalent
This course is designed for those who have taken Japanese 120 or who have the equivalent knowledge and skills. Students will further develop their ability to speak, read and write Japanese. They will deepen their knowledge of Japanese culture and society and improve their communication skills. An increasing number of Kanji characters will be introduced. CSU, UC (credit limits may apply to UC - see counselor)

JAPAN-130 First Term Kanji
3 units  SC
- 54 hours lecture per term
- Recommended: JAPAN-120 or equivalent
This course is an intensive study of Kanji characters to enhance competence in reading and writing Japanese in daily life situations. Examples include reading and comprehending simple essays and articles, and understanding a variety of advertisements. The course will cover up to 169 characters. CSU

JAPAN-131 Second Term Kanji
3 units  SC
- 54 hours lecture per term
- Recommended: JAPAN-130 or equivalent
This course is designed for those who have taken JAPAN-130 or who have the equivalent knowledge and skills. Students will further develop their competence in reading and writing Japanese. Examples include reading more complicated essays and letters, and understanding maps, road signs, and TV programs. The course will cover up to 345 characters. CSU

JAPAN-132 Third Term Kanji
3 units  SC
- 54 hours lecture per term
- Recommended: JAPAN-131 or equivalent
This course is designed for those who have taken JAPAN-131 or who have the equivalent knowledge and skills. Students will improve their advanced competence in reading and writing Japanese. Examples include reading and comprehending intermediate-level essays and understanding the pamphlets for travel, train timetables, and newspaper headlines. The course will cover up to 500 characters. CSU

JAPAN-150 Topics in Japanese
3-4 units  SC
- Variable hours
A supplemental course in Japanese to provide a study of current concepts and problems in Japanese and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

JAPAN-220 Third Term Japanese
5 units  SC
- 90 hours lecture/18 hours laboratory per term
- Recommended: JAPAN-121 or equivalent
This course develops fluency in speaking, listening, reading, and writing skills in Japanese. Students will learn both formal and informal speech styles, expand conversational skills, and build up vocabulary with 150 new Kanji characters. A variety of contemporary and traditional Japanese cultural elements will be explored. CSU, UC

JAPAN-221 Fourth Term Japanese
5 units  SC
- 90 hours lecture/18 hours laboratory per term
- Recommended: JAPAN-220 or equivalent
The course further develops the fluency in speaking, listening, reading, and writing skills in Japanese. Students will extend their ability to communicate effectively and properly in various real-life situations, learn complex grammatical structures, and increase vocabulary using a significant number of Kanji characters. Further study of contemporary and traditional Japanese cultural elements will be carried out. CSU, UC
JAPAN-298 Independent Study
.5-3 units SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to study special interests under the direction of faculty. CSU

JAPAN-299 Student Instructional Assistant
.5-3 units SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

JOURNALISM – JRNAL
Obed Vazquez, interim dean
English Division
Faculty Office Building, Room 136

Possible career opportunities
The journalism program prepares students in the writing, reporting, and critical thinking skills required for jobs in the news media or for transfer to a journalism program at a four-year institution. Career options include copy editor, script writer, broadcast journalist, newspaper reporter, magazine writer, columnist, public information officer, online writer, speech writer, freelance writer, advertising copy writer, editor, and photojournalist. Some career options may require more than two years of college study. Visit the Inquirer at www.theinquireronline.com

JRNAL-110 Mass Media of Communication
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course introduces students to the major mass media and their impact on American life. Students explore their history, how they are structured, who controls them and how they influence individual and social values. Topics include First Amendment rights and responsibilities, techniques of persuasion and propaganda, the blurred line between entertainment and news, the role of journalists in war time, issues of credibility and trust and the impact of the “new media” - digital technology and the Internet - on the traditional forms of mass communication. The course emphasizes critical thinking and analysis of the images and sounds that so powerfully shape the public mind. C-ID JOUR 100, CSU; UC

JRNAL-120 Newswriting Techniques
3 units SC
• 54 hours lecture per term
• Recommended: ENGL-118 or equivalent
This course introduces students to journalism reporting and writing for print, online and the broadcast media. It includes detail, exercising news judgment and crafting professional-style blogs. The course also covers sensitivity to multicultural issues and explores libel laws and media ethics. Students will learn how to write strong lead sentences, how to organize their findings into lively and informative stories, and how to write and revise their work on deadline. On occasion, their work will be published in the college’s student newspaper, The Inquirer, or its online news site. C-ID JOUR 110, CSU

JRNAL-124 Fundamentals of Journalism for Non-Majors I
1.5 units SC
• 9 hours lecture/54 hours laboratory by arrangement per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Journalism transfer students should take JRNAL-120
This course introduces non-journalism majors to the fundamentals of reporting and writing the news through a practical approach that includes student media experience. It includes exercising news judgment, conducting interviews, taking accurate notes, observing detail, taking simple digital news photographs and crafting a basic news story. Students will learn how to write strong lead sentences, how to organize their findings into lively and informative stories, and how to write and revise their work on deadline. Their work will be published in the college’s student newspaper, The Inquirer, or its online news site. CSU
JRNAL-125  Fundamentals of Journalism for Non-Majors II
1.5 units  SC
• 9 hours lecture/54 hours laboratory by arrangement per term
• Prerequisite: JRNAL-124 or equivalent
• Note: Journalism transfer students should take JRNAL-120

This course continues to acquaint non-journalism majors with the fundamentals of reporting the news through a practical approach that includes student media experience. It includes generating story ideas, developing sources, conducting more detailed interviews, writing and revising, and beginning to apply these skills in different media. The course also covers sensitivity to multicultural issues and explores media law and ethics in more depth. Work will be published in the college's student newspaper, The Inquirer, or its online news site. CSU

JRNAL-126  News Production Laboratory I
3 units  SC
• 18 hours lecture/108 hours laboratory by arrangement per term
• Prerequisite: JRNAL-120 (may be taken concurrently) or JRNAL-125 or equivalent
• Recommended: ENGL-118 or equivalent

Intermediate journalism students will broaden their news-gathering skills while producing content for the college's student newspaper, The Inquirer, and its website. Beat coverage and working in formats suitable for print, social media and the Web will be emphasized in this class. Students will be expected to exercise news judgment, meet daily and weekly deadlines, adhere to the highest ethical principles and be vigilant about accuracy. They will also exercise their First Amendment responsibilities by allowing The Inquirer to be a forum for the diverse views of the DVC community. C-ID JOUR 130, CSU

JRNAL-127  News Production Laboratory II
3 units  SC
• 18 hours lecture/108 hours laboratory by arrangement per term
• Prerequisite: JRNAL-126 or equivalent

Students with previous experience in working for publication will provide editorial leadership and in-depth coverage for the college's student newspaper, The Inquirer, and its website. Management skills, methods for tackling longer-term projects, and working in formats suitable for print, social media and the Web will be emphasized in this class. Students will be expected to exercise news judgment, meet daily and weekly deadlines, adhere to the highest ethical principles and be vigilant about accuracy. They will also exercise their First Amendment responsibilities by allowing The Inquirer to be a forum for the diverse views of the DVC community. C-ID JOUR 131, CSU

JRNAL-128  Journalism Portfolio Development
1 unit  SC
• 54 hours laboratory by arrangement per term
• Note: Classes such as JRNAL-120, ART-105, ART-160, ARTDM-136, ARTDM-165, ARTDM-214 or BCA-120 could provide good preparation for this course of instruction. Students are limited to taking four classes within the News Production family (JRNAL-124-128).

This intermediate class is designed for students preparing for employment in journalism and associated fields. Students with prior instruction in reporting, photography, illustration, design or digital media will create and publish works for The Inquirer while learning the basic principles of preparing a professional portfolio. CSU

JRNAL-160  Writing the Feature Story
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-118 or equivalent

Formerly JRNAL-150
This course equips students to research, write and market feature stories in the changing writing market. Students learn the differences in writing for newspapers, magazines and the growing Internet market. The first seven weeks focus on basic skills necessary in all feature writing, including choosing and focusing a subject, interviewing and leads. Students learn to evaluate the trustworthiness of websites and use Internet sources. Other lectures discuss media law, including libel and copyright, especially as related to the Internet, how to locate a market and how to write a query letter. Students choose and develop two major features and market to appropriate venues. CSU

JRNAL-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.

An opportunity for advanced students to study special interests under the direction of the faculty. CSU
KINESIOLOGY ACTIVITY – KNACT

Formerly Physical Education - PE

Christine Worsley, dean
Kinesiology, Athletics and Dance Division
Physical Education Office Building, Room 104

KNACT-100A  Beginning Swimming
.5-2 units  SC
• Variable hours
• Formerly PE-106

This is an activity course designed to teach beginning level swimming skills. Emphasis will be on correct swimming technique for the freestyle and backstroke strokes. Instruction will also address personal swimming safety, swimming strength development, and health and fitness improvement through swimming. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-100B  Intermediate Swimming
.5-2 units  SC
• Variable hours

This is an activity course designed to teach intermediate level swimming skills. Emphasis will be on correct swimming technique for all four competitive swim strokes (freestyle, backstroke, breaststroke and butterfly). Instruction will also include techniques of survival floating and the relationship between swimming and overall health and wellness. CSU

KNACT-102A  Beginning Aquatic Fitness
.5-2 units  SC
• Variable hours
• Recommended: KNACT-100A or equivalent
• Formerly PE-100

This is an activity course designed to introduce students to the development of cardiovascular fitness and muscular strength through swimming workouts. Freestyle and backstroke strokes will be performed and utilized within both aerobic (long distance) and anaerobic (sprint distance) style fitness programs. Students will improve cardiovascular conditioning, upper and lower body muscular strength and core strength. Students will also gain knowledge in assessing fitness improvement through swimming participation. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-102B  Intermediate Aquatic Fitness
.5-2 units  SC
• Variable hours
• Recommended: KNACT-102A or equivalent

This is an activity course designed to develop an intermediate level of cardiovascular fitness and muscular strength through swimming workouts. All four competitive strokes (freestyle, backstroke, breaststroke and butterfly) will be performed and utilized within both aerobic (long distance) and anaerobic (sprint distance) style fitness programs. Students will improve cardiovascular conditioning, upper and lower body muscular strength and core strength. Students will apply their knowledge of swimming fitness assessment and training principles to the development of a personal swimming fitness program. CSU

KNACT-104  Water Aerobics
.5-2 units  SC
• Variable hours
• Formerly PE-105

This is an activity course designed to improve muscular strength, flexibility and cardiovascular fitness, while reducing stress on the body by performing exercises in the water. Exercises will involve variations in movement and tempo to achieve fitness improvements. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-110A  Beginning Hatha Yoga
.5-2 units  SC
• Variable hours
• Formerly PE-108

This is a beginning level activity course exploring the principles of Hatha Yoga and how they apply to achieving lifetime fitness. It incorporates yoga postures (asanas) designed to strengthen and tone the body. Breathing exercises, relaxation and meditation techniques are learned and practiced throughout the course. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-110B  Intermediate Hatha Yoga
.5-2 units  SC
• Variable hours
• Formerly PE-109

This is an intermediate level activity course that emphasizes intense stretching, balancing, and building of muscular strength through yoga practice. A series of poses and breathing techniques will be practiced in order to create a more challenging yoga experience. Proper posture, relaxation and meditation techniques, as well as principles of healthy living, will be demonstrated and discussed throughout the course. The yoga experience is non-competitive. CSU, UC (credit limits may apply to UC - see counselor)
KNACT-110C Advanced Hatha Yoga
.5-2 units SC
  • Variable hours
This is an advanced level activity course that incorporates Hatha Yoga principles and practices with students' physical and emotional needs resulting in a more integrated understanding of the benefits of yoga. Various meditation and yoga styles will be studied, practiced and analyzed. CSU

KNACT-114A Beginning Stretch and Yoga for Sports
.5-2 units SC
  • Variable hours
  • Formerly PE-107
This is a beginning level activity course introducing principles of yoga asanas and imagery/relaxation techniques as related to a particular sport or activity. Emphasis is on general warm-up, flexibility and strengthening exercises and injury prevention. Preliminary flexibility and alignment measurement techniques are also examined. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-114B Intermediate Stretch and Yoga for Sports
.5-2 units SC
  • Variable hours
This is a course presenting intermediate principles of stretch technique, yoga asanas, and imagery/relaxation techniques as related to a particular sport or activity. Emphasis is on intermediate level warm-up, flexibility and strengthening exercises and injury prevention. Preliminary flexibility and alignment measurement techniques are also examined. CSU

KNACT-120 Physical Fitness
.5-2 units SC
  • Variable hours
  • Formerly PE-120
This is an activity course designed to improve physical fitness through participation in flexibility routines, resistance training, core strengthening, and cardiovascular exercise. Fitness training that benefits a particular sport or activity may also be considered. The benefits of physical fitness as an aspect of overall well-being will be discussed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-122A Beginning Body Sculpt
.5-2 units SC
  • Variable hours
  • Formerly PE-115
This is an activity course designed to teach beginning elements of body sculpt. Body sculpt is guided strength training, core stabilization and balance exercises performed to a specific music cadence and designed to improve muscular strength, muscular endurance and flexibility. Introductory technique will be emphasized and basic training elements will be developed. Fitness assessments will be performed and nutritional/wellness topics will also be discussed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-122B Intermediate Body Sculpt
.5-2 units SC
  • Variable hours
This is an activity course designed to teach intermediate elements of body sculpt. Body sculpt is guided strength training, core stabilization and balance exercises performed to a specific music cadence. This course is designed to improve muscular strength, muscular endurance, balance, body stabilization and flexibility. Intermediate technique will be emphasized and training elements will be developed. Fitness assessments will be performed and nutritional/wellness topics will also be discussed. CSU

KNACT-124A Beginning Hips, Thighs and Abs
.5-2 units SC
  • Variable hours
  • Formerly PE-127
This is an activity course emphasizing the basics of toning and strengthening of the hip, thigh, and abdominal areas. Range of motion of all joints will increase as a result of flexibility movements. General muscle tone and introductory knowledge of anatomy will be included. Basic cardiovascular conditioning techniques and fundamental use of modalities will be utilized. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-124B Intermediate Hips, Thighs and Abs
.5-2 units SC
  • Variable hours
This is an activity course emphasizing an intermediate level of toning and strengthening of the hip, thigh, and abdominal areas. Range of motion of all joints will increase as a result of flexibility movements. A more advanced level of muscle tone and introductory knowledge of anatomy will be included. Various conditioning techniques modalities will be utilized including, but not limited to, running, bender balls, stability balls and Pilates rings. CSU
KNACT-126  Aerobics/Step Aerobics
.5-2 units SC
• Variable hours
• Formerly PE-121

This is an activity course designed to improve aerobic-cardiorespiratory fitness utilizing a variety of current aerobic fitness training formats including choreographed and non-choreographed floor movement patterns, step training, and aerobic interval training. Muscle endurance, flexibility training, core strengthening and lecture will be incorporated. CSU, UC (credit limits may apply to UC – see counselor)

KNACT-128A  Beginning Cardio Kickboxing
.5-2 units SC
• Variable hours
• Note: Ability to participate in vigorous activity is recommended
• Formerly PE-138

This is an activity course that combines fundamental skills and technique from boxing, self defense and various forms of martial arts, such as, Karate and Muay Tai to promote a fun, yet effective and challenging aerobic workout. Jump rope and running will be primary cardiovascular activities. Basic flexibility, strength training, focus mitt training and muscular endurance activities may also be incorporated. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-128B  Intermediate Cardio Kickboxing
.5-2 units SC
• Variable hours
• Note: Ability to participate in vigorous activity is recommended
• Formerly PE-138

This is an activity course that combines intermediate skills and technique from boxing, self defense and various forms of martial arts, such as, Karate and Muay Tai to promote a fun, yet effective and challenging aerobic workout. Jump rope and running will be primary cardiovascular activities. Flexibility, strength training, focus mitt training and muscular endurance activities may also be incorporated. CSU

KNACT-130A  Beginning Fitness Walking
.5-2 units SC
• Variable hours
• Formerly PE-119

This is an activity course intended for students of beginning fitness levels who would like to utilize walking as a fitness enhancing activity. Introductory technique will be emphasized and basic walking programs will be developed. Walking routes begin on campus and explore a multitude of nearby parks and trails. Topics to be discussed include: fitness and health assessment, equipment and safety, walking techniques, motivation, nutrition basics, program design and evaluation. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-130B  Intermediate Fitness Walking
.5-2 units SC
• Variable hours

This is an activity course intended for students of intermediate fitness levels who would like to utilize walking as a fitness enhancing activity. Intermediate technique will be emphasized and intermediate walking programs will be developed. Walking routes begin on campus and explore a multitude of nearby parks and trails. Topics to be discussed include: fitness and health assessment, equipment and safety, walking techniques, motivation, nutrition basics, program design, evaluation, Volkssporting and Volksmarching. CSU

KNACT-132  Hiking
.5-2 units SC
• Variable hours
• Note: First class session will be held in the classroom
• Formerly PE-130

This is an activity course enabling students to learn about hiking and safety skills while enjoying the beautiful parks and open spaces of the Bay Area. Students will learn hike preparation, map reading and trail marking skills. Hiking sites vary, routes are from 4-10 miles long, and are often on hilly terrain and are all one day hikes. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-134A  Beginning Fitness Jogging
.5-2 units SC
• Variable hours
• Formerly PE-117

This is an activity course which is designed to teach basic concepts and elements of jogging, including form and technique. The sport of running, as well as safety and nutrition information as it relates to jogging/running will also be discussed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-134B  Intermediate Fitness Jogging
.5-2 units SC
• Variable hours

This is an activity course which is designed to teach intermediate concepts and elements of jogging, including form and technique. The sport of running, as well as safety and nutrition information as it relates to jogging/running will also be discussed. CSU
KNACT-136  Distance Track Training  
.5-2 units SC  
• Variable hours  
• Formerly PE-173
This is an activity course in distance running, interval and track training methods. Warm-up, stretching, interval training, cool down and recovery will be covered, as well as, information on types of racing, race strategies and techniques. Other topics to be explored include history, equipment, safety, assessing cardiovascular effects, running and race techniques, and values of distance running and interval training. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-138  Introduction to Triathlon Training  
.5-2 units SC  
• Variable hours  
• Note: Students must provide bicycle and helmet.  
• Formerly PE-118
This is an introductory activity course in triathlon training which offers students the opportunity to cross-train in triathlon skills (swimming, biking, and running) and learn introductory training methods to accomplish an increased level of fitness through training. The history, rules, equipment, and safety concerns of triathlon will be discussed, as well as, training methods and race strategies. No previous experience is needed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-140  Stationary Cycling  
.5-2 units SC  
• Variable hours  
• Formerly PE-129
This is an activity course using group stationary cycling training to develop cardiovascular fitness. Students will also utilize various strength and flexibility modalities, mental imagery, visualization, nutrition concepts, as well as assessment of their cardiovascular fitness training level through heart rate monitoring and resting heart rate values. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-144A  Beginning Super Circuit  
.5-2 units SC  
• Variable hours  
• Formerly PE-126
This is an activity course designed to teach the basic elements of cardiovascular fitness, muscular strength, muscular endurance, and flexibility in a unique and simultaneous combination of aerobic and resistance training exercises in one seamless total fitness workout. Individual health and fitness assessments will be conducted during the semester. Nutrition and other wellness topics will also be included. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-144B  Intermediate Super Circuit  
.5-2 units SC  
• Variable hours
This is an activity course designed to teach the intermediate elements of cardiovascular fitness, muscular strength, muscular endurance, and flexibility in a unique and simultaneous combination of aerobic and resistance training exercises in one seamless total fitness workout. Individual health and fitness assessments will be conducted during the semester. Nutrition and other wellness topics will also be included. CSU

KNACT-146A  Theory and Practice of Strength Training and Fitness I  
.5-2 units SC  
• Variable hours  
• Formerly PE-122
This is an activity course designed to increase muscular strength, muscular endurance, and fitness utilizing introductory plate-loaded apparatus, free weights, selectorized weight machines, treadmills, stationary bikes, elipticals, and stairmasters. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-146B  Theory and Practice of Strength Training and Fitness II  
.5-2 units SC  
• Variable hours
This is an activity course designed to increase muscular strength, muscular endurance, and fitness utilizing beginning level plate-loaded apparatus, free weights, selectorized weight machines, treadmills, stationary bikes, elipticals, and stairmasters. CSU

KNACT-146C  Theory and Practice of Strength Training and Fitness III  
.5-2 units SC  
• Variable hours
This is an activity course designed to increase muscular strength, muscular endurance, and fitness utilizing introductory plate-loaded apparatus, free weights, selectorized weight machines, treadmills, stationary bikes, elipticals, and stairmasters. Information about periodization program design will be presented. CSU

KNACT-146D  Theory and Practice of Strength Training and Fitness IV  
.5-2 units SC  
• Variable hours
This is an activity course designed to increase muscular strength, muscular endurance, and fitness utilizing introductory plate-loaded apparatus, free weights, selectorized weight machines, treadmills, stationary bikes, elipticals, and stairmasters. Information regarding biomechanics and its implications for strength training will be presented. CSU
KNACT-148A  Beginning Power Lifting  
.5-2 units  SC  
• Variable hours  
• Formerly PE-125  

This is an activity course designed to teach the basic elements of power lifting. Technique will be emphasized and training programs will be developed. The sport of power lifting, as well as safety and nutritional information as it relates to power lifting, will also be discussed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-148B  Intermediate Power Lifting  
.5-2 units  SC  
• Variable hours  

This is an activity course designed to teach intermediate elements of power lifting. Intermediate technique will be emphasized and more advanced training programs will be developed. The sport of power lifting, as well as safety and nutrition information as it relates to power lifting, will also be discussed. CSU

KNACT-150  Topics in Physical Activity  
.3-4 units  SC  
• Variable hours  
• Formerly PE-150  

This is a supplemental activity course in physical activity to provide a study of current concepts and problems in fitness and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

KNACT-160A  Beginning Badminton  
.5-2 units  SC  
• Variable hours  
• Formerly PE-154  

This is an activity course involving beginning badminton techniques and strategies. This course focuses on the history, rules, etiquette, equipment, and scoring system of badminton. In addition, students will develop stroke techniques, footwork skills, and knowledge of singles and doubles strategies. Offensive and defensive positions and basic team strategies are addressed. No previous badminton experience is necessary. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-160B  Intermediate Badminton  
.5-2 units  SC  
• Variable hours  

This is an activity course involving intermediate badminton techniques and strategies. This course focuses on the history, rules, etiquette, equipment, and scoring system of badminton. In addition, students will develop intermediate stroke techniques, footwork skills, and knowledge of singles and doubles strategies. Offensive and defensive positions and intermediate team strategies will be addressed. CSU

KNACT-162  Bowling  
.5-2 units  SC  
• Variable hours  
• Note: A fee will be payable at time of registration  
• Formerly PE-158  

This is an activity course that focuses on the basic delivery technique, targeting, spare shooting and strategy of bowling. Additional topics include equipment, rules, etiquette, terminology and scoring. Students will have the opportunity to practice these techniques as well as participate in class competition. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-164A  Beginning Golf  
.5-2 units  SC  
• Variable hours  
• Note: Some class meetings will be held at Buchanan Field Golf Course to utilize their practice facilities  
• Formerly PE-162  

This is an activity course designed to introduce the game of golf and provide the skill and knowledge necessary to successfully transition to playing golf on a course. Equipment selection will be covered as well as full swing fundamentals, ball flight principles, chipping, pitching and putting. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-164B  Intermediate Golf  
.5-2 units  SC  
• Variable hours  
• Recommended: KNACT-164A or equivalent  
• Formerly PE-163  

This is an activity course focusing on intermediate level golf skills. Primary participation is through playing nine holes of golf. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-166  Tennis  
.5-2 units  SC  
• Variable hours  
• Formerly PE-172  

This is an activity course intended to introduce students to the game of tennis. The course will involve basic stroking methods, conditioning techniques, historical background, rules, scoring, as well as singles and doubles strategies. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-170A  Beginning Basketball  
.5-2 units  SC  
• Variable hours  
• Note: Students should be physically capable of performing vigorous exercise  
• Formerly PE-182  

This is an activity course in basketball with an emphasis on beginning level techniques, rules of the full court game and cardiovascular conditioning. CSU, UC (credit limits may apply to UC - see counselor)
KNACT-170B  Intermediate Basketball  
.5-2 units  SC  
• Variable hours  
This is an activity course in basketball with an emphasis on intermediate level techniques, rules of the full court game and cardiovascular conditioning. CSU

KNACT-172  Flag Football  
.5-2 units  SC  
• Variable hours  
• Formerly PE-186  
This is an activity course introducing students to the fundamentals of flag football. Rules of the game, safety, offensive and defensive skills, game strategy, and methods of scoring will also be addressed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-174A  Beginning Men's Lacrosse  
.5-2 units  SC  
• Variable hours  
• Formerly PE-189  
This is an activity course emphasizing the fundamental skills and strategies of men's lacrosse. This course focuses on rules, etiquette, safety, and lacrosse skills, such as catching, passing, cradling, shooting, and defending. Offensive and defensive positions and basic team strategies are also addressed. No previous lacrosse experience is necessary. Open to men and women. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-176A  Beginning Soccer  
.5-2 units  SC  
• Variable hours  
• Formerly PE-188  
This is an activity course involving beginning level skills and strategies of soccer. This course focuses on a beginning level of understanding of the rules, etiquette, safety, and soccer skills, such as dribbling, passing, shooting and defending. Offensive and defensive positions and basic team organization are also addressed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-176B  Intermediate Soccer  
.5-2 units  SC  
• Variable hours  
This is an activity course involving intermediate level skills and strategies of soccer. This course focuses on an intermediate level of application of the rules, etiquette, safety, and soccer skills, such as dribbling, passing, shooting and defending. Offensive and defensive team strategies and positioning are also addressed. CSU

KNACT-178  Indoor Soccer  
.5-2 units  SC  
• Variable hours  
• Formerly PE-187  
This is an activity course emphasizing the skills and strategies of indoor soccer. Indoor soccer is a scaled-down version of soccer, involving 5-6 players per team and small goals with no goalkeepers. Students will learn and implement the rules, etiquette and safety concerns of indoor soccer, as well as practice the skills and strategies of the game. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-182A  Beginning Volleyball  
.5-2 units  SC  
• Variable hours  
• Formerly PE-192  
This is an activity course designed to teach the student the beginning skills of volleyball and to incorporate them into successful non-competitive team play. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-182B  Intermediate Volleyball  
.5-2 units  SC  
• Variable hours  
• Formerly PE-193  
This is an activity course focused on intermediate volleyball knowledge and skills. The course will develop a higher level of performance and the utilization of multi-optional volleyball strategies. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-182C  Advanced Volleyball  
.5-2 units  SC  
• Variable hours  
This is an activity course that offers advanced volleyball students opportunities to analyze, evaluate and perform complex techniques. In addition, students will utilize advanced tactical drills and exercises in the development of game strategies. CSU

KNACT-195A  Beginning Plyometrics and Agility Training for Female Athletes  
.75-1 unit  SC  
• Variable hours  
• Note: This course is open to all students  
• Formerly PE-195  
This is an activity course involving beginning level plyometric and agility training for the female athlete. This course is designed to help improve performance and minimize the potential for injury. Beginning level training will include plyometric techniques, agility drills, flexibility exercises and core strengthening techniques. Fundamental health and nutritional issues specific to the female athlete will also be addressed. CSU, UC (credit limits may apply to UC - see counselor)
KNACT-195B  Intermediate Plyometrics and Agility Training for Female Athletes
0.25-1 unit  SC
• Variable hours
• Note: This course is open to all students
This is an activity course involving intermediate level plyometric and agility training for the female athlete. The course is designed to further develop neuromuscular control thereby enhancing sport-specific performance and minimizing the potential for injury. Intermediate training will include more complex plyometric techniques, agility drills, flexibility exercises and core strengthening techniques. Further evaluation of health and nutritional issues specific to the female athlete will also be addressed. CSU

KNACT-298  Independent Study
0.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and instruction office; topics must extend study beyond courses offered
• Formerly PE-298
An opportunity for advanced students to study special interests under the direction of the faculty. CSU

KNACT-299  Student Instructional Assistant
0.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
• Formerly PE-299
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

KINESIOLOGY COMBATIVE

KINESIOLOGY COMBATIVE - KNCMB

Formerly Physical Education Combative - PECMB

Christine Worsley, dean
Kinesiology, Athletics and Dance Division
Physical Education Office Building, Room 104

KNCMB-110  Self-Defense
0.5-2 units  SC
• Variable hours
• Formerly PECMB-112
This is an activity course that combines defensive techniques and concepts from jujitsu, judo, karate, and aikido. Students will explore self-defense techniques, as well as increase muscular fitness (strength, endurance, flexibility, and balance), improve self-discipline, focus, balance, relieve stress, and increase mental awareness. CSU, UC (credit limits may apply to UC - see counselor)

KNCMB-114  Jujitsu
0.5-2 units  SC
• Variable hours
• Formerly PECMB-110
This is an activity course involving the history, philosophy, techniques and safety aspects of jujitsu. This Japanese system of unarmed combat teaches students to yield to the opponent's strength to gain a physical advantage. Students will learn jujitsu techniques, as well as increase cardiovascular and muscular fitness. CSU, UC (credit limits may apply to UC - see counselor)

KNCMB-118A  Beginning Taekwondo
0.5-2 units  SC
• Variable hours
• Formerly PECMB-111
This is an activity course designed to teach beginning skills, the history, and philosophy of taekwondo, while increasing physical fitness and endurance. Special attention will be paid to safety procedures and injury prevention. Taekwondo is an ancient Korean martial art where students will learn “the way of fist and foot”. CSU, UC (credit limits may apply to UC - see counselor)

KNCMB-126A  Aikido
0.5-2 units  SC
• Variable hours
• Formerly PECMB-114
This is an activity course involving the history, philosophy, techniques and safety aspects of aikido. This is a Japanese warrior art involving a noncompetitive, non-fighting disci-
pline, that is comprised purely of defensive techniques and principles of movement. Students will learn fundamental aikido techniques, as well as increase cardiovascular and muscular fitness. CSU, UC (credit limits may apply to UC - see counselor)

**KNCMB-126B Intermediate Aikido**
- .5-2 units SC
- Variable hours
- Recommended: KNCMB-126A or equivalent
- Formerly PECMB-124

This is an activity course focusing on an intermediate level of aikido practice. Students will explore more complex skills and techniques with an emphasis on increased pace, as well as continue to develop concentration and cardiovascular and muscular fitness. CSU, UC (credit limits may apply to UC - see counselor)

**KNCMB-128 Aikido Weapons - Jo and Bokken**
- .5-2 units SC
- Variable hours
- Formerly PECMB-116

This is an activity course using Aikido weapons Jo (wooden staff) and Bokken (wooden sword.) The historical, philosophical, and safety aspects of Aikido weapons Jo and Bokken will also be explored. CSU, UC (credit limits may apply to UC - see counselor)

**KNCMB-130 Judo**
- .5-2 units SC
- Variable hours
- Formerly PECMB-118

This is an activity course involving the history, philosophy, techniques and safety aspects of judo. Judo emphasizes throws and pins, self-discipline, punctuality, courtesy, and respect. Students will learn judo techniques, as well as increase cardiovascular and muscular fitness. CSU, UC (credit limits may apply to UC - see counselor)

**KNCMB-134 Karate**
- .5-2 units SC
- Variable hours
- Formerly PECMB-119

This is an activity course involving the history, philosophy, techniques and safety aspects of Kajukembo Karate. This martial art form teaches the way of the “empty hand” using legs, arms and fists, as well as Kiai (expression of inner energy), which accompanies each action. Students will learn karate techniques, as well as increase cardiovascular and muscular fitness. CSU, UC (credit limits may apply to UC - see counselor)

**KNCMB-150 Topics in Martial Arts and Combatives**
- .3-4 units SC
- Variable hours
- Formerly PECMB-150

A supplemental course is martial arts/combatives to provide a study of current concepts, movements and problems in combatives and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

**KINESIOLOGY DANCE – KNDAN**

Formerly Physical Education Dance - PEDAN
also see DANCE

Christine Worsley, dean
Kinesiology, Athletics and Dance Division
Physical Education Office Building, Room 104

**KNDAN-100 Introduction to Dance**
- .5-2 units SC
- Variable hours
- Formerly PEDAN-129

This is an introductory course focusing on the development of coordination, rhythm, strength, flexibility, alignment and basic dance movement combinations in a variety of genres. Secondary focus is on basic musculoskeletal alignment, movement safety, and dance appreciation skills. CSU, UC

**KNDAN-105A Beginning Pilates Mat Work**
- .5-2 units SC
- Variable hours
- Formerly PEDAN-128

This is an activity course introducing basic mat exercises developed by Joseph Pilates focusing on intrinsic muscle groups. The class addresses individual needs, body alignment, and core strength development, with emphasis placed on back and abdominal strengthening. CSU, UC (credit limits may apply to UC – see counselor)

**KNDAN-105B Intermediate Pilates Mat Work**
- .5-2 units SC
- Variable hours

This is an activity course introducing intermediate mat exercises developed by Joseph Pilates focusing on intrinsic muscle groups. The class addresses individual needs, body alignment, and core strength development, with emphasis placed on back and abdominal strengthening as it relates to intermediate level exercises. CSU
KNDAN-110A  Ballet Fundamentals I  
.5-2 units SC  
• Variable hours  
• Formerly PEDAN-130
This is an introductory course in ballet technique. This class will focus on ballet barre, center adagio, allegro work, and across-the-floor combinations. It will also include an introduction to the history of the genre and principles of ballet as an art form. CSU, UC

KNDAN-110B  Ballet Fundamentals II  
.5-2 units SC  
• Variable hours
This is a beginning class in classical ballet technique. The class will focus on beginning barre, beginning center adagio and allegro work and beginning ballet movement combinations in the center. The course also includes history of ballet and principles as a contemporary art form. CSU

KNDAN-120A  Jazz Dance Fundamentals I  
.5-2 units SC  
• Variable hours  
• Formerly PEDAN-136
This is an introductory course in jazz dance technique. This class will focus on proper jazz dance alignment, center work and movement across the floor. It will also include an introduction to the history of jazz dance. CSU, UC

KNDAN-120B  Jazz Dance Fundamentals II  
.5-2 units SC  
• Variable hours
This is a beginning course in jazz dance technique. The class will focus on proper jazz dance alignment, center work and movement across the floor. It will also include an introduction to the history of jazz dance. CSU, UC

KNDAN-130A  Modern Dance Fundamentals I  
.5-2 units SC  
• Variable hours  
• Formerly PEDAN-142
This is an introductory course in modern dance technique. This class will focus on the development of proper modern dance alignment, center work, and movement across the floor. It will also include an introduction to modern dance history. CSU, UC

KNDAN-130B  Modern Dance Fundamentals II  
.5-2 units SC  
• Variable hours
This is a course in beginning modern dance technique. This class will focus on beginning modern dance alignment, center work, and modern dance movements across the floor. The course will also include discussion regarding the current events that shape the history of modern dance in America and in Europe. CSU

KNDAN-150  Topics in Dance Arts  
.3-4 units SC  
• Variable hours  
• Formerly PEDAN-150
A supplemental course in the dance arts to provide a study of current concepts and problems in dance field and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

KNDAN-155  World Dance Topics  
.3-4 units SC  
• Variable hours  
• Formerly PEDAN-155
A supplemental course in world dance to provide a study of selected cultural traditions. Specific topics such as Japanese, Hawaiian or Mexican dance will be announced in the schedule of classes. CSU

KNDAN-160A  Beginning Tap Dance  
.5-2 units SC  
• Variable hours  
• Formerly PEDAN-138
This is an activity course emphasizing beginning tap dance technique and covers a wide range of tap dance styles. The cultural and historical aspects of this genre will also be studied. CSU, UC

KNDAN-160B  Intermediate Tap Dance  
.5-2 units SC  
• Variable hours  
• Formerly PEDAN-141
This is an activity course designed to teach intermediate elements of tap dance technique. This course will introduce intermediate tap dance steps and combinations. The contribution of tap dance to American art and culture will also be studied. CSU, UC

KNDAN-162  Broadway Dance  
.5-2 units SC  
• Variable hours  
• Formerly PEDAN-165
This is a course in Broadway Musical dance technique. Dance styles from a variety of Broadway genres, as well as audition techniques, will be covered. The history of dance in musical theater and its impact on American culture will also be discussed. CSU, UC
KNDAN-164A  Beginning Ballroom/Social Dance  
.5-2 units  SC  
• Variable hours  
• Formerly PEDAN-160  
This is an activity course in basic ballroom/social dance. This course will focus on the techniques, history, terminology, principles and other elements, including style and rhythm of ballroom/social dance. A partner is not necessary as this course will incorporate an understanding of dance footwork specific to leaders and followers. A variety of dance styles will be covered, and may include American style fox-trot, American style waltz, American style tango, night club two-step, hustle, polka, quickstep and Viennese waltz. CSU, UC

KNDAN-166  Swing Dance  
.5-2 units  SC  
• Variable hours  
• Formerly PEDAN-161  
This is an introductory course in Swing dances. The techniques, terminology, steps, patterns, rhythms, music and history of the various Swing dances will be covered. This is a social dance class, but a partner is not required. CSU, UC

KNDAN-168A  Beginning Salsa and Latin Dance  
.5-2 units  SC  
• Variable hours  
• Formerly PEDAN-162  
This is an introductory course in the Latin dances, including Salsa. The techniques, terminology, steps, patterns, rhythms, music, history and development of a variety of Latin dances will be explored. This is a social dance class but a partner is not required. CSU, UC

KNDAN-168B  Intermediate Salsa and Latin Dance  
.5-2 units  SC  
• Variable hours  
• Recommended: KNDAN-168A or equivalent  
• Formerly PEDAN-163  
This is an intermediate level course in Salsa and Latin dance for students interested in improving their skills in these dances and partnering techniques. Increasingly complex techniques, patterns, terminology, rhythms, music history and development of a variety of Latin dances will be explored. CSU, UC

KINESIOLOGY INTERCOLLEGIATE ATHLETICS – KNICA

Formerly Physical Education Intercollegiate - PEIC

Christine Worsley, dean  
Kinesiology, Athletics and Dance Division  
Physical Education Office Building, Room 104

Activity courses – 0.5-3 units each, 13.5-162 hours of activity per term each, SC

Note: these courses may be repeated three times, beginning, intermediate, or advanced classes of the same activity may only be repeated a maximum of 3 times altogether. In the following activity courses, recreational and physical education skills are developed and attention is given to appropriate rules and techniques.

KNICA-098  Intercollegiate Pre-Participation Orientation  
.3 unit  P/NP  
• Non degree applicable  
• 5 hours lecture per term  
• Formerly PEIC-098  
This is a course preparing new students, intending to try-out/compete for an intercollegiate athletic team, for the upcoming academic term and season of competition. Students will complete the California Community College Athletic Association’s (CCCAA) athletic eligibility requirements, complete medical forms and waivers, register for the NCAA Clearinghouse, and fulfill other requirements for community college athletic competition.

KNICA-100  Student-Athlete Success I  
2 units  SC  
• 27 hours lecture/36 hours laboratory per term  
• Formerly PEIC-110  
This course is designed to prepare the first year student-athlete for intercollegiate competition and academic achievement. Topics for this class will include, but are not limited to, eligibility, college academic resources, personal responsibility issues, and opportunities after DVC. CSU
KNICA-101  Student-Athlete Success II  
2 units  SC  
• 27 hours lecture/36 hours laboratory per term  
• Formerly PEIC-111  
This course is designed to further assist student-athletes toward degree completion, transfer, and/or professional employment while competing in intercollegiate athletics. Topics for this class include, but are not limited to, transfer and athletic eligibility requirements for four year schools, the recruiting process, completing the application and/or professional employment process, scholarships and financial aid, leadership training, and personal responsibility for life success. CSU

KNICA-120  Analysis of the Multiple Aspects of Modern Day Football  
.5-2 units  SC  
• May be repeated once  
• Variable hours  
• Recommended: Competitive high school football experience or equivalent  
• Formerly PETHE-187  
This course provides students the opportunity to review and analyze offensive and defensive schemes of daily practice video and opponent game film. Implement and install weekly game plans on offense, defense, and special teams (kicking game). CSU, UC (credit limits may apply to UC - see counselor)

KNICA-199  Sport-Specific Athletic Conditioning  
.5-2 units  SC  
• May be repeated three times  
• Variable hours  
• Formerly PE-199  
This is an activity course designed for students to increase their off-season physical conditioning, skill/technique level, and knowledge of a specific intercollegiate sport. See current schedule of classes for sport offerings. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-200  Intercollegiate Baseball, Men  
3 units  SC  
• May be repeated once  
• 175 hours activity per term  
• Recommended: Competitive high school baseball experience or equivalent  
• Formerly PEIC-200  
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-202A  Intercollegiate Basketball-A, Men  
2 units  SC  
• May be repeated once  
• 115 hours activity per term  
• Recommended: Competitive high school basketball experience or equivalent  
• Note: Fall term only  
• Formerly PEIC-202A  
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-202B  Intercollegiate Basketball-B, Men  
1 unit  SC  
• May be repeated once  
• 60 hours activity per term  
• Prerequisite: KNICA-202A or tryout audition  
• Note: Spring term only  
• Formerly PEIC-202B  
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-203A  Intercollegiate Basketball-A, Women  
2 units  SC  
• May be repeated once  
• 115 hours activity per term  
• Recommended: Competitive high school basketball experience or equivalent  
• Note: Fall term only  
• Formerly PEIC-203A  
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-203B  Intercollegiate Basketball-B, Women  
1 unit  SC  
• May be repeated once  
• 60 hours activity per term  
• Prerequisite: KNICA-203A or tryout audition  
• Note: Spring term only  
• Formerly PEIC-203B  
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)
KNICA-204  Intercollegiate Cross Country, Men
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school cross country experience or equivalent
• Formerly PEIC-204

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-205  Intercollegiate Cross Country, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school cross country experience or equivalent
• Formerly PEIC-205

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-206  Intercollegiate Football, Men
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school football experience or equivalent
• Formerly PEIC-206

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-207  Intercollegiate Soccer, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school soccer experience or equivalent
• Formerly PEIC-207

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-210  Intercollegiate Tennis, Men
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school tennis experience or equivalent
• Formerly PEIC-210

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-215  Intercollegiate Softball, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school softball experience or equivalent
• Formerly PEIC-215

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-216  Intercollegiate Swimming and Diving, Men
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school swimming/diving experience or equivalent
• Formerly PEIC-216

Instruction and intercollegiate competition is offered in swimming and diving to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-217  Intercollegiate Swimming and Diving, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school swimming/diving experience or equivalent
• Formerly PEIC-217

Instruction and intercollegiate competition is offered in swimming to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-218  Intercollegiate Tennis, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school tennis experience or equivalent
• Formerly PEIC-218

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)
KNICA-219   Intercollegiate Tennis, Women
3 units SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school tennis experience or equivalent
• Formerly PEIC-219
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-220   Intercollegiate Track and Field, Men
3 units SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school track and field experience or equivalent
• Formerly PEIC-220
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-221   Intercollegiate Track and Field, Women
3 units SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school track and field experience or equivalent
• Formerly PEIC-221
Instruction and intercollegiate competition is offered in track and field to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-223   Intercollegiate Volleyball, Women
3 units SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school volleyball experience or equivalent
• Formerly PEIC-223
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-224   Intercollegiate Water Polo, Men
3 units SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school water polo experience or equivalent
• Formerly PEIC-224
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-225   Intercollegiate Water Polo, Women
3 units SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school water polo experience or equivalent
• Formerly PEIC-225
Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KINESIOLOGY – KINES

Formerly Physical Education Theory - PETHE

Christine Worsley, dean
Kinesiology, Athletics and Dance Division
Physical Education Office Building, Room 104

Possible career opportunities
A certified athletic trainer is an allied health care professional who works as a consultant and advisor to athletes, parents and coaches. A certified athletic trainer must obtain a bachelor’s degree from a CAAHEP accredited program. After obtaining a BS a graduate can work as a certified athletic trainer, physical therapist, physician, podiatrist or physician assistant.

Program Level Student Learning Outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of the current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.
To earn a degree, students must complete each course used for a major and Fitness Instruction II Practical Experiences in Personal Training and Fitness Instruction I Professional Aspects of Group Fitness Training and Group Exercise Instruction I Personal training plus at least 3 units from: BIOSC-101 Fundamentals of Biological Science ............ 3 BIOSC-102 Fundamentals of Biological Science with Laboratory............................................... 4 BIOSC-116 Human Biology ........................................... 3 BIOSC-117 Human Biology with Laboratory......................... 4 BIOSC-120 Introduction to Human Anatomy and Physiology ................................................. 5 BIOSC-139 Human Anatomy ........................................... 5 BIOSC-140 Human Physiology ........................................... 5 plus at least 3 units from: HSCI-124 Health and Wellness.......................................................... 3 HSCI-170 Women’s Health .......................................................... 3 plus at least 2 units from at least 2 different courses from: KNACT-146A Theory and Practice of Strength Training and Fitness I.......................................................... 0.5-2 KNACT-148A Beginning Power Lifting.......................................................... 0.5-2 plus at least 2 units from at least 2 different courses from: KNACT-110A Beginning Hatha Yoga ........................................... 0.5-2 KNACT-110B Intermediate Hatha Yoga ........................................... 0.5-2 KNACT-114 Stretch and Yoga for Sports ........................................... 0.5-2 KNACT-120 Physical Fitness ........................................... 0.5-2 KNACT-122A Beginning Body Sculpt ........................................... 0.5-2 KNACT-124A Beginning Hips, Thighs and Abs ........................................... 0.5-2 KNACT-126 Aerobics/Step Aerobics ........................................... 0.5-2 KNACT-128A Beginning Cardio Kickboxing ........................................... 0.5-2 KNACT-140 Stationary Cycling ........................................... 0.5-2 KNACT-144A Beginning Super Circuit ........................................... 0.5-2 KNDAN-105A Beginning Pilates Mat Work ........................................... 0.5-2 total minimum required units 34.5

recommended courses

Associate in science degree - Kinesiology
The associate in science degree in kinesiology offers students two areas of specialization from which to choose: sports and recreation management or coaching. The degree is a two-year course of study designed for students who are interested in a career as an athletic coach and/or preparing for an entry level job in sports or recreation administration at a wide variety of businesses such as fitness centers, spas and wellness centers, recreational facilities, etc.
While most of the kinesiology major requirements are transferable and many meet prerequisites required in associate majors, this degree is not designed as a transfer curriculum. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Possible programs of study at the baccalaureate level include pursuit of a teaching credential to become a secondary school teacher/coach, or exercise science, sports management or other specialty area related to the discipline of kinesiology. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU Breadth). Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn this degree, students must complete the core major requirements as indicated and select an area of specialization. Students must complete each course used to meet a major requirement with a “C” grade or higher and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however the units are only counted once. For this degree a maximum of 15 units may be double-counted.

**major requirements:**

- **HSCI-230** Advanced First Aid/CPR .................................. 3
- **KINES-210** Introduction to Kinesiology .................................. 3
- **KINES-234** Introduction to Sports Medicine and Athletic Training .................................. 3
- **KINES-240** Principles of Optimizing Human Performance .................. 3
- **KINES-242** Exercise Techniques and Physical Fitness Testing .................................. 1
- **KINES-246** Sport and Exercise Psychology .................................. 3
- **PSYCH-101** Introduction to Psychology .................................. 3

* plus at least 3 units from:
  - **NUTRI-120** Sports Nutrition: Fueling the Athlete .................. 3
  - **NUTRI-160** Nutrition: Science and Applications .................. 3

**coaching emphasis:**

* plus at least 3 units from:
  - **KINES-260** Theory of Coaching Individual Sports .................. 3
  - **KINES-262** Theory of Coaching Team Sports .................. 3
  - **KINES-264** Theory of Coaching Football .................. 3

* plus at least 2 units from:

* activity course or intercollegiate athletic participation must be selected in area of coaching emphasis

**total minimum required units** 33

**sport and recreation management emphasis:**

**required courses**

- **KINES-220** Introduction to Sport and Recreation Management .................................. 3
- **KINES-222** Practical Experience in Sport and Recreation Management .................................. 3
- **KINES-223** Practical Experience in Sport and Recreation Management II .................................. 3

*plus a minimum of 2 units from 3 different kinesiology activity (KNACT) courses

**total minimum required units** 33

**recommended degree electives:**

- **BIOSC-140** Human Physiology .................................. 5
- **KINES-230** Overview of Sports Medicine and Fitness Professions .................................. 2

**Associate in science degree - Sports medicine/athletic training**

The associate in science degree in sports medicine/athletic training program is a two-year course of study designed for students interested in becoming allied health care professionals such as athletic trainers or physical therapists. It combines academic, laboratory and clinical experience to prepare students for further study or to obtain employment as an entry-level rehabilitation/allied health paraprofessional. Earning this degree may facilitate the student’s transfer to a four-year college and/or professional program.

DVC Sports medicine/athletic training students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU G.E.). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

Students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.75 or higher and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements**

- **BIOSC-139** Human Anatomy .................................. 5
- **HSCI-124** Health and Wellness .................................. 3
- **KINES-230** Overview of Sports Medicine and Fitness Professions .................................. 2
- **KINES-232** Introduction to Sports Massage .................................. 1.5
- **KINES-234** Introduction to Sports Medicine and Athletic Training .................................. 3
- **KINES-235** Advanced Sports Medicine and Athletic Training .................................. 3
- **KINES-236** Clinical Experiences in Sports Medicine and Athletic Training I .................................. 2
- **KINES-237** Clinical Experiences in Sports Medicine and Athletic Training II .................................. 2
KINESIOLOGY

KINES-240 Principles of Optimizing Human Performance ....................................................... 3
KINES-242 Exercise Techniques and Physical Fitness Testing .............................................. 1
KINES-288 Clinical Experiences in Sports Medicine and Athletic Training III ................... 2
PSYCH-101 Introduction to Psychology .............................................................................. 3

plus at least 3 units from:
CHEM-108 Introductory Chemistry .................................................................................. 4
CHEM-109 Introduction to Organic and Biochemistry ..................................................... 4
CHEM-120 General College Chemistry I ......................................................................... 5
PHYS-110 Elementary Physics ......................................................................................... 3
PHYS-120 General College Physics I .............................................................................. 4

plus at least 3 units from:
BIOS-140 Human Physiology .......................................................................................... 5
HSCI-230 Advanced First Aid/CPR ............................................................................... 3
KINES-210 Introduction to Kinesiology .......................................................................... 3
NUTRI-160 Nutrition: Science and Applications ............................................................ 3
total minimum required units 38.5

KINES-246 Exercise Techniques and Physical Fitness Testing ............................................ 1

plus at least 3 units from:
NUTRI-120 Sports Nutrition: Fueling the Athlete ......................................................... 3
NUTRI-160 Nutrition: Science and Applications ............................................................ 3

plus at least 3 units from:
KINES-260 Theory of Coaching Individual Sports ......................................................... 3
KINES-262 Theory of Coaching Team Sports ................................................................. 3
KINES-264 Theory of Coaching Football ..................................................................... 3

plus at least 2 units from: *

plus at least 2 units from a minimum of two courses from:
KNACT-110A Beginning Hatha Yoga ................................................................. 0.5-2
KNACT-110B Intermediate Hatha Yoga .............................................................. 0.5-2
KNACT-114 Stretch and Yoga for Sport ............................................................. 0.5-2
KNACT-120 Physical Fitness .................................................................................. 0.5-2
KNACT-122A Beginning Body Sculpt ................................................................. 0.5-2
KNACT-124A Beginning Hip, Thighs and Abs .................................................. 0.5-2
KNACT-126 Aerobics/Step Aerobics ................................................................. 0.5-2
KNACT-128A Beginning Cardio Kickboxing ..................................................... 0.5-2
KNACT-140 Stationary Cycling ............................................................................. 0.5-2
KNACT-144A Beginning Super Circuit .................................................................. 0.5-2
KNACT-195A Beginning Plyometrics and Agility Training for Female Athletes .... 0.25-1
KNDAN-105A Beginning Pilates Mat Work .......................................................... 0.5-2
total minimum required units 19.5

Certificate of achievement - Group exercise instruction
The group exercise certificate program is a one-year course of study that will expose students to many facets of the fitness industry and prepares them to obtain entry-level employment as a group exercise instructor. Completion of the certificate requirements will also prepare students to sit for national group exercise instructor examinations.

To earn a certificate of achievement, a student must complete each course used to meet a certificate requirement with a grade of “C” or higher. Courses are available in the day and evening.

required courses ............................................................................................................ units
HSCI-230 Advanced First Aid/CPR ................................................................. 3
KINES-244 Introduction to Sports Medicine and Athletic Training ......................... 3
KINES-240 Principles of Optimizing Human Performance ........................................ 3
KINES-242 Exercise Techniques and Physical Fitness Testing ................................ 1

plus at least 3 units from:
NUTRI-115 Nutrition and Health: Personal Applications ......................................... 3
NUTRI-120 Sports Nutrition: Fueling the Athlete ...................................................... 3
NUTRI-160 Nutrition: Science and Applications ........................................................ 3

plus at least 2 from a minimum of two courses from:
KNACT-110A Beginning Hatha Yoga ................................................................. 0.5-2
KNACT-110B Intermediate Hatha Yoga .............................................................. 0.5-2
KNACT-114 Stretch and Yoga for Sport ............................................................. 0.5-2
KNACT-120 Physical Fitness .................................................................................. 0.5-2
KNACT-122A Beginning Body Sculpt ................................................................. 0.5-2
KNACT-124A Beginning Hip, Thighs and Abs .................................................. 0.5-2
KNACT-126 Aerobics/Step Aerobics ................................................................. 0.5-2
KNACT-128A Beginning Cardio Kickboxing ..................................................... 0.5-2
KNACT-140 Stationary Cycling ............................................................................. 0.5-2
KNACT-144A Beginning Super Circuit .................................................................. 0.5-2
KNACT-195A Beginning Plyometrics and Agility Training for Female Athletes .... 0.25-1
KNDAN-105A Beginning Pilates Mat Work .......................................................... 0.5-2
total minimum required units 19.5

*Activity courses or intercollegiate athletic participation must be in the selected area of coaching emphasis.
Certificate of achievement - Personal training

The personal training certificate program is a one-year course of study that will expose students to many facets of the fitness industry and prepares them to obtain entry-level employment as a personal trainer. Completion of the certificate requirements will also prepare students to sit for national personal training examinations.

To earn a certificate of achievement, a student must complete each course used to meet a certificate requirement with a grade of “C” or higher. Courses are available in the day and evening.

**required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tr>
<td>HSCI-230</td>
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<td>KINES-240</td>
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<tr>
<td>KINES-242</td>
<td>3</td>
</tr>
<tr>
<td>KINES-246</td>
<td>3</td>
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<td>KINES-254</td>
<td>2</td>
</tr>
<tr>
<td>KINES-255</td>
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**plus at least 3 units from:**

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<tr>
<td>NUTRI-115</td>
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<tr>
<td>NUTRI-120</td>
<td>3</td>
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<tr>
<td>NUTRI-160</td>
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**plus at least 1 unit from:**

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<th>Course</th>
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<td>KNACT-146A</td>
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</tr>
<tr>
<td>KNACT-148A</td>
<td>0.5</td>
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</tbody>
</table>

**total minimum required units** 24

**KINES-150  Topics in Kinesiology Theory**

3-4 units SC

- Variable hours
- Formerly PETHE-150

A supplemental course in physical education theory to provide a study of topics not covered in other courses or to address current developments in the field. Specific topics to be announced in the schedule of classes. CSU

**KINES-210  Introduction to Kinesiology**

3 units SC

- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly PETHE-210

This is an introductory course that surveys various subdisciplines related to the study of human movement. Students will examine the areas of history, sociology, biomechanics, physiology, and psychology, as they relate to the sport and exercise environment. In addition, students will explore three career pathways involving the study of human movement; teaching, research, and professional practice. The course also introduces students to the concepts and skills of locating, evaluating, synthesizing, and communicating information in various formats. C-ID KIN 100, CSU, UC (credit limits may apply to UC - see counselor)

**KINES-220  Introduction to Sport and Recreation Management**

3 units SC

- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly PETHE-215

This is an introductory course in sport and recreation management. Students will examine the history and development of the profession, discover and evaluate a variety of career opportunities, discuss organizational and managerial strategies, and analyze current trends in sport and recreation management. CSU

**KINES-222  Practical Experience in Sport and Recreation Management I**

2 units SC

- 36 hours lecture/108 hours laboratory by arrangement per term
- Prerequisite: KINES-220 or equivalent (may be taken concurrently)
- Formerly PETHE-216

This is an internship course that will expose students to the practical application and responsibilities within the field of sport and recreation management. They will have the opportunity to assist within the Diablo Valley College Physical Education and Athletics departments on a variety of projects including marketing, game management, website management, sports information, fundraising, and/or scheduling. CSU

**KINES-223  Practical Experience in Sport and Recreation Management II**

2 units SC

- 36 hours lecture/108 hours laboratory by arrangement per term
- Prerequisite: KINES-216 or equivalent
- Formerly PETHE-217

This is an internship course that continues to enhance student's skills and practical experiences within the field of sport and recreation management. Students will participate in creating and implementing projects within the Diablo Valley College Physical Education and Athletics Departments. Topics for projects include, but are not limited to, marketing, game management, website management, sports information, fundraising, and/or scheduling. CSU
KINES-230  Overview of Sports Medicine and Fitness Professions  
2 units  SC  
- 36 hours lecture per term  
- Formerly PETHE-279  
This course will acquaint students with various sports medicine, fitness and health care professions. Information to be presented includes job descriptions, educational and certification requirements, work environment and potential salary range. CSU

KINES-232  Introduction to Sports Massage  
1.5 units  SC  
- 18 hours lecture/27 hours laboratory per term  
- Formerly PETHE-283  
This course will present the theory of massage and its role in treating and preventing athletic injuries as well as preparing athletes for competition. Students will experience the application of a variety of massage, stretching and relaxation techniques. CSU

KINES-234  Introduction to Sports Medicine and Athletic Training  
3 units  SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly PETHE-284  
This course will provide the future coach, athletic trainer and other health care providers with the basic theoretical knowledge and practical skills necessary for the proper and effective management of common injuries. The students will also develop the ability to recognize these injuries, manage emergency situations and apply preventative taping. CSU, UC (credit limits may apply to UC - see counselor)

KINES-235  Advanced Sports Medicine and Athletic Training  
3 units  SC  
- 36 hours lecture/54 hours laboratory per term  
- Prerequisite: KINES-234 or equivalent  
- Formerly PETHE-285  
This course builds on concepts from KINES-234. It will introduce the student to the theoretical knowledge and practical skills necessary to evaluate and rehabilitate injuries. The medical and surgical management of injuries will also be discussed in presentations by orthopedic surgeons and podiatrists. CSU

KINES-236  Clinical Experiences in Sports Medicine and Athletic Training I  
2 units  SC  
- 108 hours laboratory by arrangement per term  
- Prerequisite: KINES-234 or equivalent (may be taken concurrently)  
- Formerly PETHE-286  
This course will expose students to basic injury prevention and care. The student will observe and assist athletic trainers in administering health care to the DVC athletes. Skills to be learned and performed include prophylactic taping and wrapping, immediate injury management and modality application. CSU

KINES-237  Clinical Experiences in Sports Medicine and Athletic Training II  
2 units  SC  
- 108 hours laboratory by arrangement per term  
- Prerequisite: KINES-235 (may be taken concurrently) and KINES-236 or equivalents  
- Formerly PETHE-287  
This course will expose students to injury evaluation and career exploration. The student will observe and assist athletic trainers in evaluating and treating DVC athletes. This may be augmented by off-campus observations of physicians and/or therapists. CSU

KINES-238  Clinical Experiences in Sports Medicine and Athletic Training III  
2 units  SC  
- 108 hours laboratory by arrangement per term  
- Prerequisite: KINES-237 or equivalent  
- Formerly PETHE-288  
This course will expose the student to advanced athletic injury evaluation and anatomy. The emphasis in this course will be problem solving and professional development. The student will observe and assist athletic trainers in evaluating and rehabilitating DVC student athletes. This may be augmented by off-campus observations of surgery. CSU

KINES-239  Clinical Experiences in Sports Medicine and Athletic Training IV  
2 units  SC  
- 108 hours laboratory by arrangement per term  
- Prerequisite: KINES-238 or equivalent  
This course will expose the student to advanced injury rehabilitation principles and clinical intervention techniques. The emphasis in this course will be problem solving and professional development. The student will observe and assist athletic trainers in evaluating and rehabilitating DVC student athletes. This may be augmented by off-campus observations of surgery. CSU
KINES-240  Principles of Optimizing Human Performance
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Formerly PETHE-281

This course explores the body’s adaptations to exercise and teaches students how to develop fitness programs to maximize these strength and conditioning adaptations. The information presented is valuable for students interested in professions such as personal training, physical therapy, athletic training/sports medicine, teaching and coaching, as well as for people who just want to improve their own fitness level or athletic performance. This knowledge will also prepare students intending to sit for national personal training exams. CSU, UC (credit limits may apply to UC - see counselor)

KINES-242  Exercise Techniques and Physical Fitness Testing
1 unit  SC
• 54 hours laboratory per term
• Recommended: KINES-240 or equivalent (may be taken concurrently)

This course is a companion laboratory course to KINES-240. It will teach students how to instruct others in the proper techniques of strength training and conditioning exercises. It will also teach students how to assemble and conduct testing programs to determine fitness levels and evaluate progress in exercise programs. This knowledge will assist students who plan to sit for a national personal training examination. CSU, UC (credit limits may apply to UC - see counselor)

KINES-246  Sport and Exercise Psychology
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Formerly PETHE-259

This course addresses the scientific approach to the psychological component of sport and exercise performance. Topics such as personality, motivation, group dynamics, leadership, etc., will be covered. Specific psychological skills training methods for enhancing performance will be discussed. In addition, the connection between sport and exercise participation to health, wellness and psychological development will be addressed. CSU

KINES-250  Professional Aspects of Personal Training
3 units  SC
• 54 hours lecture per term
• Recommended: KINES-140 or equivalent
• Formerly PETHE-291

This course is for students who are, or aspire to be, personal trainers. It will provide practical information on how to become certified as a personal trainer, effectively work with clients, including those within special populations, as well as start and manage a personal training business. CSU

KINES-252  Professional Aspects of Group Fitness Training
1.5 units  SC
• 18 hours lecture/27 hours laboratory per term
• Recommended: KINES-240 or equivalent
• Formerly PETHE-293

This course prepares the potential personal trainer and group exercise instructor for the practical aspects of training and managing clients in a group fitness setting. Principles and management of appropriate progression, regression modification for the group setting will be emphasized. Program design, exercise sequencing, training variables, use of strength equipment and practical teaching skills needed to design and instruct creative, effective and well-balanced group fitness training sessions/classes will be included. CSU

KINES-254  Practical Experience in Personal Training and Fitness Instruction I
2 units  SC
• 36 hours lecture/108 hours laboratory by arrangement per term
• Prerequisite: KINES-240 (may be taken concurrently) and KINES-250 (may be taken concurrently) or equivalents
• Formerly PETHE-294

This is an internship course that will expose students to the practical application and responsibilities of personal training through the observation and assistance of a fitness professional. Students will observe and assist with assessments on clients for fitness programs, and in the preparation and execution of fitness programs. Also included will be the observation of the adaptation/adjustment of fitness program specifics to meet the changing needs of the clients fitness level and risk factor management and development of long and short term fitness goals. CSU
KINES-255  Practical Experience in Personal Training and Fitness Instruction II

2 units  SC

• 36 hours lecture/108 hours laboratory per term
• Prerequisite: KINES-240 (may be taken concurrently) and KINES-250 (may be taken concurrently) or equivalents

Formerly PETHE-296

This is an internship course that will expose students to the practical application and responsibilities of personal training. Students will perform assessments on individuals for fitness programs, prepare and execute fitness programs, adapt and adjust fitness program specifics to meet the changing needs of the client’s fitness level and risk factor management, as well as assist in the development of long and short term fitness goals. CSU

KINES-258  Personal Training National Exam Preparation

2 units  SC

• 36 hours lecture per term
• Recommended: KINES-250 or equivalent

Formerly PETHE-292

This course is designed to provide students with the information necessary to sit for a National Personal Training Exam. The course will expand upon information presented in other personal training courses within the program to emphasize knowledge required for passing these exams. CSU

KINES-260  Theory of Coaching Individual Sports

3 units  SC

• 54 hours lecture per term

Formerly PETHE-260

This course is designed to provide students with an understanding of all facets of coaching individual sports. Topics will include methods of instruction, practice design, mental preparation, and program building. This course is appropriate for those looking for a career in coaching, current youth coaches and the athlete wanting to increase their knowledge of the sport. No previous coaching experience is necessary. CSU, UC (credit limits may apply to UC - see counselor)

KINES-262  Theory of Coaching Team Sports

3 units  SC

• 54 hours lecture per term

Formerly PETHE-261

This course is designed to provide students with an understanding of all facets of coaching team sports. Topics will include methods of instruction, practice design, mental preparation, and program building. This course is appropriate for those looking for a career in coaching, current youth coaches and the athlete wanting to increase their knowledge of the sport. No previous coaching experience is necessary. CSU, UC (credit limits may apply to UC - see counselor)

KINES-264  Theory of Coaching Football

3 units  SC

• 54 hours lecture per term

Formerly PETHE-264

This course is designed to provide students with an understanding of all facets of coaching football. The history, terminology, rules, strategies, skills, methods of instruction, conditioning mental preparation, and program building will be covered. This course is appropriate for those looking for a career in coaching, current youth coaches and the athlete wanting to increase their knowledge of the sport. No previous coaching experience is necessary. CSU, UC (credit limits may apply to UC - see counselor)

KINES-298  Independent Study

.5-3 units  SC

• Variable hours

• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend beyond courses offered.

• Formerly PETHE-298

An opportunity for advanced students to study special interests under the direction of the faculty. CSU

KINES-299  Student Instructional Assistant

.5-3 units  SC

• Variable hours

• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

• Formerly PETHE-299

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

LIBRARY STUDIES – L AND LS

Andy Kivel, interim director
Library and Learning Resources Division
Library Building, Room 219

Possible career opportunities

Library courses teach the skills necessary to effectively locate, organize and use information in any academic or work setting. There are various titles for the jobs you will be qualified for with a certificate of achievement or associate of science degree in library technology: library technician, library assistant, library paraprofessional, instructional media assistant, information specialist, library media specialist, and website editor.
Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree
Library technology
Certificate of achievement
Library technology

Associate in science degree - Library technology
The associate in science degree in library technology prepares students for employment in the dynamic field of library and information services. The skills learned in this program may be used in public, school, academic, and corporate libraries, as well as in other positions requiring information management skills. If you like working with people, books and information, consider a career in library technology.

DVC library technology students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU G.E.). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn the degree, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once. With department chairperson approval, other course substitutions are possible for use in completing the program.

major requirements

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<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tr>
<td>L-100</td>
<td>Introduction to a Career in Library Technology</td>
<td>1</td>
</tr>
<tr>
<td>L-103</td>
<td>Access to Library Resources and Services</td>
<td>2</td>
</tr>
<tr>
<td>L-104</td>
<td>Cataloging for Paraprofessionals</td>
<td>3</td>
</tr>
<tr>
<td>L-105</td>
<td>Reference and Research Services: Tools and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>L-108</td>
<td>Acquisition of Library Resources</td>
<td>1</td>
</tr>
<tr>
<td>LS-121</td>
<td>Information Literacy and Research Skills</td>
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plus at least 2 units from:

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<td>COOP-170</td>
<td>Occupational Work Experience Education</td>
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<tr>
<td>COOP-180</td>
<td>Internship in Occupational Work Experience Education</td>
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plus at least 3 units from:

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<td>ENGL-177</td>
<td>Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>L-109</td>
<td>Delivering Library Services: Issues, Theory and Techniques</td>
<td>2</td>
</tr>
<tr>
<td>L-110</td>
<td>Job Search Skills for Library Careers</td>
<td>1</td>
</tr>
<tr>
<td>L-111</td>
<td>Storytelling</td>
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<td>ARTDM-110</td>
<td>Digital Imaging Process and Technique I</td>
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<td>ARTDM-171</td>
<td>Introduction to Web Design</td>
<td>3</td>
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<tr>
<td>BUSMG-121</td>
<td>Practices and Concepts of Supervision</td>
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<tr>
<td>CIS-160</td>
<td>Microsoft Windows – Comprehensive Systems</td>
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<tr>
<td>COMSC-100</td>
<td>Introduction to Computers and Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-195</td>
<td>WWW Publishing with HTML</td>
<td>1</td>
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<tr>
<td>COMSC-196</td>
<td>Advanced WWW Publishing</td>
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<tr>
<td>COMTC-110</td>
<td>Introduction to Computer Hardware/Software</td>
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<tr>
<td>COOP-170</td>
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</tr>
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</table>

total minimum required units 19

Notes: maximum number of units applicable to the program units in COOP-170 or COOP-180 is four.
There may be no duplication of course units between groups of restricted electives.

Certificate of achievement - Library technology
This certificate program prepares students for employment in the dynamic field of library and information services. The skills learned in this program may be used in public, school, academic, and corporate libraries, as well as in other positions requiring information management skills. If you like working with people, books and information, consider a career in library technology.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher and maintain an overall GPA of 2.5. With department chairperson approval, other course substitutions are possible for use in completing the program.
**LIBRARY STUDIES**

**required courses**

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- COOP-180 Internship in Occupational Work Experience Education | 1-4

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</tr>
<tr>
<td>ARTDM-171</td>
<td>Introduction to Web Design</td>
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<tr>
<td>BUSMG-121</td>
<td>Practices and Concepts of Supervision</td>
<td>3</td>
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<tr>
<td>CIS-100</td>
<td>Microsoft Windows - Comprehensive</td>
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<tr>
<td>COMSC-100</td>
<td>Introduction to Computers and Information Systems</td>
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<tr>
<td>COMSC-195</td>
<td>WWW Publishing with HTML</td>
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<tr>
<td>COMSC-196</td>
<td>Advanced WWW Publishing</td>
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<tr>
<td>COMTC-110</td>
<td>Introduction to Computer Hardware/Software</td>
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<tr>
<td>COOP-170</td>
<td>Occupational Work Experience Education</td>
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<tr>
<td>COOP-180</td>
<td>Internship in Occupational Work Experience Education</td>
<td>1-4</td>
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<tr>
<td>ENGL-177</td>
<td>Children's Literature</td>
<td>3</td>
</tr>
<tr>
<td>L-109</td>
<td>Delivering Library Services: Issues, Theory and Techniques</td>
<td>2</td>
</tr>
<tr>
<td>L-110</td>
<td>Job Search Skills for Library Careers</td>
<td>1</td>
</tr>
<tr>
<td>L-111</td>
<td>Storytelling</td>
<td>2</td>
</tr>
<tr>
<td>L-112</td>
<td>Internet Skills for Library Personnel</td>
<td>1</td>
</tr>
<tr>
<td>L-150</td>
<td>Topics in Library Technology</td>
<td>0.3-4</td>
</tr>
<tr>
<td>LS-130</td>
<td>Internet and Online Research</td>
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</tr>
<tr>
<td>LS-150</td>
<td>Topics in Library Studies</td>
<td>0.3-4</td>
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</table>

**total minimum required units** | 19

**Note:** The maximum number of units applicable to the program requirements in COOP-170 or COOP-180 is four.

There may be no duplication of course units between groups of restricted electives.

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**L-100 Introduction to a Career in Library Technology**

1 unit | SC
- 18 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

An introduction to the dynamic field of library and information technology for paraprofessionals. This course explores various types of libraries and information centers, and the competencies needed for a successful career in the field as well as job opportunities in libraries and information centers. CSU

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**L-103 Access to Library Resources and Services**

2 units | LR
- 36 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course introduces students to the full array of access services in a variety of library settings. Special skills and competencies for paraprofessionals will be covered as they relate to providing quality services. The course will also explore the philosophy of access services from a historical and contemporary perspective. CSU

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**L-104 Cataloging for Paraprofessionals**

3 units | SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

An introductory course for library paraprofessionals on the basic theories, principles, concepts and procedures of bibliographic control, including descriptive cataloging, classification, subject analysis, physical processing, and bibliographic maintenance. Emphasis will be placed on print monographs, current Anglo-American Cataloging Rules, MARC 21 format, Library of Congress and Dewey classification and LC Subject Heading. CSU

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**L-105 Reference and Research Services: Tools and Techniques**

3 units | LR
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course is an introduction to the use of print and online information resources found in public, school, college and special libraries. Students learn effective techniques for assisting library patrons, and are provided opportunities for developing reference service skills. The class uses resources available through the Diablo Valley College library plus other commonly available resources. CSU
L-108  Acquisition of Library Resources
1 unit  LR
- 18 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course teaches concepts and practices in the selection, ordering and receiving of materials from the decision to purchase resources to their receipt, processing and distribution. Students will learn to use online systems and other technology applications in the practice of selecting and de-selecting resources. CSU

L-109  Delivering Library Services: Issues, Theory, and Techniques
2 units  SC
- 36 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course teaches oral and written communication skills and strategies essential to successful performance as a library paraprofessional. Communication within the organization, marketing, customer and community relations, and evaluation of services are covered. CSU

L-110  Job Search Skills for Library Careers
1 unit  SC
- 18 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course will prepare students for a successful job search in a library field. Utilizing traditional and electronic methods, students will explore the range of positions and work environments available; use sources of information for job market research; identify key workplace skills; learn best practices for writing applications, resumes, and cover letters; and practice interviewing techniques. CSU

L-111  Storytelling
2 units  SC
- 36 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
An introduction to storytelling designed to develop skills as storytellers in the library, classroom, home and other settings. The class will survey various types and formats of storytelling and provide practical experience in presenting and evaluating stories. CSU

L-112  Internet Skills for Library Personnel
1 unit  SC
- 18 hours lecture per term
- Recommended: L-103 or equivalent; eligibility for ENGL-122 or equivalent
This course teaches the use of the Internet in providing library and information services. The class is designed for library personnel whose responsibilities include using the Internet and other information systems for work-related tasks such as reference, cataloging, acquisitions and other information management activities. Exploration of advanced searching techniques, user training and evaluation of online resources are included. CSU

L-150  Topics in Library Technology
.3-.4 units  SC
- Variable hours
- Recommended: Eligibility for ENGL-122 or equivalent
A supplemental course in Library to provide a study of current concepts and problems in library technology. Specific topics will be announced in the schedule of classes. CSU

LS-099  Introduction to Library and Research Skills
.5 unit  P/NP
- 9 hours lecture per term
This short-term basic library and research skills course introduces students to information resources in an academic library, including online catalogs, electronic databases and the Internet. Emphasis will be placed on the organization, retrieval, and evaluation of information. The research skills learned are intended to be useful in college coursework.

LS-121  Information Literacy and Research Skills
1 unit  P/NP
- 9 hours lecture/27 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
The course teaches the research strategies and skills for successfully finding, retrieving, evaluating and using information in various formats. It combines library skills, research methods, and information technology literacy. Coursework includes the ethical and legal aspects of information use and the critical thinking skills necessary for effective college research. CSU, UC

LS-130  Internet and Online Research
1 unit  P/NP
- 18 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
Learn how to use the Internet and other online resources to locate and retrieve information for research and writing. Through demonstrations and hands-on activities, a range of Internet services will be introduced including advanced search tools on the open and closed web, resource sharing via social networking, and subscription journal databases. Evaluating information and choosing appropriate resources are practiced throughout the course. CSU

LS-150  Topics in Library Studies
.3-.4 units  SC
- Variable hours
A supplemental course in library studies to provide a study of current concepts and problems in research, information organization and retrieval, and related subdivisions. Specific topics will be announced in the schedule of classes. CSU
**MATHEMATICS – MATH**

Effective Spring 2006, the “or equivalent” used in the prerequisite and recommended statements in the math courses equates to appropriate placement through the assessment process or an equivalent college course. A mathematics laboratory is open daily in the Learning Center where mathematics advisors are available to aid students.

Rachel Westlake, dean  
Math and Computer Science Division  
Math Building, Room 267

**Possible career opportunities**

Mathematicians work in a variety of fields, among them statistics, analysis, actuarial science, mathematical modeling, computer programming, cryptography, research, and education. More than two years of college study is usually required for these career options. A strong background in mathematics is also required for many careers in engineering, accounting and finance, business administration, risk management, and business forecasting, as well as for research in computer science, social science, and the physical sciences.

**Program level student learning outcomes**

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

**Associate in science degree for transfer**

Mathematics

**Associate in science degree in mathematics for transfer**

The mathematics major is a liberal arts and sciences major for students planning to study mathematics, applied mathematics, or mathematics for secondary school teachers, but also for those pursuing a course of study in physics, chemistry, engineering, computer science, and economics. Mathematics at Diablo Valley College offers a broad range of courses including calculus, differential equations, linear algebra, discrete mathematics and statistics. This program fulfills typical lower division requirements at the CSUs. Some variations may exist at other four year colleges or universities and therefore it is essential that the student intending on majoring in mathematics refer to the catalog of the prospective transfer institution, consult with a program advisor and consult a counselor.

To earn an associate in science degree in mathematics for transfer, students must complete all required courses with a “C” grade or higher, and complete general education requirements listed in the catalog for the transfer degree. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Courses in mathematics may satisfy both major and general education requirements; however, the units are only counted once.

To receive the Diablo Valley College associate in science degree in mathematics for transfer, students must complete the required courses as outlined for the mathematics major, fulfill the minimum units of the requirements of the CSU general education pattern or the IGETC general education pattern, complete 60 college transfer level units, and obtain a minimum grade point average of 2.0.

**major requirements units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>MATH-192</td>
<td>Analytic Geometry and Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-193</td>
<td>Analytic Geometry and Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-292</td>
<td>Analytic Geometry and Calculus III</td>
<td>5</td>
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**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-194</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH-294</td>
<td>Differential Equations</td>
<td>5</td>
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**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-142</td>
<td>Elementary Statistics with Probability</td>
<td>4</td>
</tr>
<tr>
<td>MATH-194</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH-195</td>
<td>Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH-294</td>
<td>Differential Equations</td>
<td>5</td>
</tr>
</tbody>
</table>

**total minimum required units** 22

*Note: There may be no duplication of course units between lists of restricted electives.

**MATH-050 Alternate Credit for Prealgebra with Arithmetic Review**

4 units  
P/NP  
- Non degree applicable  
- 216 hours laboratory per term  
- Note: Students do not enroll directly in this course. Enrollment is limited to transfer by instructor.

This course is designed to allow students who are enrolled in MATH-075SP to receive non degree applicable credit for mastery of some but not all of the outcomes in MATH-075SP. In order to receive credit for MATH-050, students must enroll in MATH-075SP and make reasonable progress through the content.
MATH-051 Alternate Credit Elementary Algebra
5 units  P/NP
- Non degree applicable
- 270 hours laboratory per term
- Recommended: MATH-075 or equivalent
- Note: Students do not enroll directly in this course. Enrollment is limited to transfer by instructor.

This course is designed to allow students enrolled in MATH-090SP to receive credit for mastery of some but not all of the outcomes in MATH-090SP. In order to receive credit for MATH-051, students must enroll in MATH-090SP and make reasonable progress through the content.

MATH-052 Alternate Credit Intermediate Algebra
5 units  P/NP
- Non degree applicable
- 270 hours laboratory per term
- Recommended: MATH-090 or MATH-090SP or equivalent
- Note: Students do not enroll directly in this course. Enrollment is limited to transfer by instructor.

This course is designed to allow students enrolled in MATH-120SP to receive credit for mastery of some but not all of the outcomes in MATH-120SP. In order to receive credit for MATH-052, students must enroll in MATH-120SP and make reasonable progress through the content.

MATH-053 Alternate Credit College Algebra
4 units  P/NP
- Non degree applicable
- 216 hours laboratory per term
- Recommended: MATH-120 or equivalent
- Note: Students do not enroll directly in this course. Enrollment is limited to transfer by instructor.

This course is designed to allow students enrolled in MATH-135SP to receive credit for mastery of some but not all of the outcomes in MATH-135SP. In order to receive credit for MATH-053, students must enroll in MATH-135SP and make reasonable progress through the content.

MATH-075 Prealgebra with Arithmetic Review
4 units  SC
- Non degree applicable
- 72 hours lecture per term

Students will learn prealgebra, review arithmetic, and learn how to use them in their daily lives. Topics include the arithmetic operations, long multiplication and division, decimals, fractions, percents, signed numbers, natural number exponents, order of operations, introduction to the concept of variables, combining like terms, solving linear equations, application problems and the use of geometric formulas.

MATH-075SP Prealgebra with Arithmetic Review-Self Paced
4 units  SC
- Non degree applicable
- 216 hours laboratory per term
- Note: In this computer-assisted, flexibly-paced class, students will utilize an online learning system for their initial instruction, as well as receive assistance during weekly face-to-face meetings. Students will have some flexibility on how much time they take to learn topics and when they take assessments, though minimum requirements and deadlines will apply. The online laboratories require computer access and may be completed either on or off campus. The face-to-face meetings will be held in the DVC Math Lab (for lab schedule go to www.dvc.edu/PHCmathlab for Pleasant Hill or www.dvc.edu/SRCmathlab for SRC). Students are encouraged to complete MATH-075SP in one semester, or take up to 2 semesters. MATH-075SP is equivalent to MATH-075; students who have completed MATH-075 will not receive credit for MATH-075SP.

This course is a computer-assisted, flexibly-paced class equivalent to MATH-075. Students will learn prealgebra, review arithmetic, and learn how to use both in their daily lives. Topics include arithmetic operations, long multiplication and division, decimals, fractions, percents, signed numbers, natural number exponents, order of operations, introduction to the concept of variables, combining like terms, solving linear equations, application problems and the use of geometric formulas.

MATH-080 Topics in Basic Skills Math
.3-4 units  SC
- Non degree applicable
- Variable hours

This is a supplemental course in mathematics to provide a variety of topics for basic skills students. Specific topics will be announced in the schedule of classes.

MATH-090 Elementary Algebra
5 units  SC
- Non degree applicable
- 90 hours lecture per term
- Prerequisite: Placement through the assessment process or MATH-075 or MATH-075SP or equivalent
- Formerly MATH-110

This course is an introduction to the techniques and reasoning of algebra, including linear equations and inequalities, development and use of formulas, algebraic expressions, systems of equations, graphs and introduction to quadratic equations.
MATH-090E Elementary Algebra with Study Skills
6 units   SC
- Non degree applicable
- 108 hours lecture per term
- Prerequisite: Placement through the assessment process or MATH-075 or MATH-075SP or equivalent
This course integrates study skills for math success with an introduction to the techniques and reasoning of algebra, including linear equations and inequalities, development and use of formulas, algebraic expressions, systems of equations, graphs and introduction to quadratic equations. Study skills topics will include time management, note taking, memory techniques, studying for tests, test anxiety and math anxiety.

MATH-090SP Elementary Algebra - Self Paced
5 units   SC
- Non degree applicable
- 270 hours laboratory per term
- Prerequisite: Placement through the assessment process or MATH-075 or MATH-075SP or equivalent
- Note: In this computer-assisted, flexibly-paced class, students will utilize an online learning system for their initial instruction, as well as receive assistance during weekly face-to-face meetings. Students will have some flexibility on how much time they take to learn topics and when they take assessments, though minimum requirements and deadlines will apply. The online laboratories require computer access and may be completed either on or off campus. The face-to-face meetings will be held in the DVC Math Lab (for lab schedule go to www.dvc.edu/PHCmathlab for Pleasant Hill or www.dvc.edu/SRCmathlab for SRC). Students are encouraged to complete MATH-090SP in one semester, or take up to 2 semesters. MATH-090SP is equivalent to MATH-090; students who have completed MATH-090SP will not receive credit for MATH-090SP.

This course is a computer-assisted self-paced equivalent to MATH-090. The topics include linear equations and inequalities, development and use of formulas, algebraic expressions, systems of equations, operations on polynomials, factoring, graphs, and an introduction to quadratic equations.

MATH-094 Statway I
4 units   SC
- Non degree applicable
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: Placement through the assessment process or MATH-075 or MATH-075SP or equivalent
- Note: TI-83 or TI-84 graphing calculator required
This is the first semester of a two-semester course that introduces the concepts of probability and statistics with requisite arithmetic and algebraic topics integrated throughout. It is intended for students in humanities or social sciences majors. Topics include data collection, organization and graphical interpretation of data, qualitative and quantitative data sets, measures of central tendency and measures of dispersion, bivariate data and scatter plots, linear functions and their graphs, nonlinear functions and their graphs, and linear and exponential/logarithmic models. Learning strategies for success with an emphasis on study skills, resource acquisition, and maintaining a positive perspective towards learning are also discussed and applied.

MATH-111 Study Skills Support for Elementary Algebra
1 unit   SC
- Non degree applicable
- 18 hours lecture per term
- Co-requisite: MATH-090 or MATH-090SP or equivalent
- Note: MATH-111 is designed for students currently enrolled in MATH-090 who want extra support and assistance with study skills. It is especially recommended for students who have previously attempted MATH-090 without success.
This course is an optional support course intended to supplement MATH-090. Elementary Algebra. Students will learn and implement study skills designed to help improve their performance in their Elementary Algebra course. Topics will include time management, note taking, memory techniques, studying for tests, test anxiety and math anxiety.

MATH-114 Geometry
3 units   SC
- 54 hours lecture per term
- Prerequisite: Placement through the assessment process or MATH-090 or MATH-090SP or equivalent
- Recommended: Eligibility for ENGL-116/118 or equivalent
Students will use geometric definitions, axioms, and constructions and both inductive and deductive reasoning techniques to investigate the properties of lines, polygons, and circles. Students will prove geometric theorems, and derive and apply formulas for perimeter, area, and volume for a variety of plane and solid geometric objects.

MATH-120 Intermediate Algebra
5 units   SC
- 90 hours lecture per term
- Prerequisite: Placement through the assessment process or MATH-090 or MATH-090SP or equivalent
This course will expand upon the material covered in elementary algebra. Topics will include special products and factors, fractional equations, systems of linear equations, inequalities, conics, complex numbers, the binomial theorem, logarithms, and functions. The course is equivalent to a second year high school algebra course.
MATH-120SP  Intermediate Algebra - Self Paced
5 units  SC
• 270 hours laboratory per term
• Prerequisite: Placement through the assessment process or MATH-090 or MATH-090SP or equivalent
• Note: In this computer-assisted, flexibly-paced class, students will utilize an online learning system for their initial instruction, as well as receive assistance during weekly face-to-face meetings. Students will have some flexibility on how much time they take to learn topics and when they take assessments, though minimum requirements and deadlines will apply. The online laboratories require computer access and may be completed either on or off campus. The face-to-face meetings will be held in the DVC Math Lab (for lab schedule go to www.dvc.edu/PHCmathlab for Pleasant Hill or www.dvc.edu/SRCmathlab for SRC). Students are encouraged to complete MATH-120SP in one semester, or take up to 2 semesters. MATH-120SP is equivalent to MATH-120; students who have completed MATH-120 will not receive credit for MATH-120SP.

This course is a computer-assisted flexibly-paced class equivalent to MATH-120. The topics include special products and factors, fractional equations, systems of linear equations, inequalities, conics, complex numbers, the binomial theorem, logarithms, and functions. The course is equivalent to a second year high school algebra course.

MATH-121  Plane Trigonometry
3 units  SC
• 54 hours lecture per term
• Prerequisite: Placement through the assessment process or MATH-120 or 120SP or equivalent
• Recommended: High school geometry or equivalent

This course focuses on the theory and applications of trigonometry, including right triangle trigonometry, general angle trigonometry, and trigonometry on the unit circle, as well as trigonometric functions of real numbers. Applications include solutions of right and oblique triangles in problems in surveying, physics, engineering and navigation. CSU

MATH-124  Mathematics for Liberal Arts
3 units  LR
• 54 hours lecture per term
• Prerequisite: Placement through the assessment process or MATH-120 or 120SP or equivalent

Students will learn how to apply techniques and concepts of intermediate algebra and critical thinking to the solving of contemporary problems in mathematics. The course is a survey of topics that may include (but are not limited to): exponential functions, logarithmic scales, probability, statistics, finance, matrix operations, logic and geometry. CSU, UC

MATH-135  College Algebra
4 units  LR
• 72 hours lecture per term
• Prerequisite: Placement through the assessment process or MATH-120 or 120SP or equivalent

This course presents a study of functions and their graphs, including polynomial, rational, exponential, and logarithmic functions. Other topics include inequalities, nonlinear systems, conic sections. CSU, UC (credit limits may apply to UC - see counselor)

MATH-135SP  College Algebra - Self Paced
4 units  LR
• 216 hours laboratory per term
• Prerequisite: Placement through the assessment process or MATH-120 or 120SP or equivalent
• Note: In this computer-assisted, flexibly-paced class, students will utilize an online learning system for their initial instruction, as well as receive assistance during weekly face-to-face meetings. Students will have some flexibility on how much time they take to learn topics and when they take assessments, though minimum requirements and deadlines will apply. The online laboratories require computer access and may be completed either on or off campus. The face-to-face meetings will be held in the DVC Math Lab (for lab schedule go to www.dvc.edu/PHCmathlab for Pleasant Hill or www.dvc.edu/SRCmathlab for SRC). Students are encouraged to complete MATH-135SP in one semester, or take up to 2 semesters. MATH-135SP is equivalent to MATH-135; students who have completed MATH-135 will not receive credit for MATH-135SP.

This course is a computer-assisted flexibly-paced class, equivalent to MATH-135. The topics include study of functions and their graphs, including polynomial, rational, exponential, and logarithmic functions. Inequalities, nonlinear systems, conic sections. CSU, UC (credit limits may apply to UC - see counselor)

MATH-140  Tutor Training
1 unit  LR
• 18 hours lecture per term
• Prerequisite: Placement through the assessment process or MATH-142 or MATH-182 or MATH-191 or equivalent

Basic principles and methods of tutoring, including the tutoring sequence, leading and probing questions, communication skills, and learning theory. Application of tutoring techniques to specific areas of mathematics including algebra, trigonometry, and pre-calculus. Students will receive instruction in helping tutees with special needs. CSU
MATH-142  Elementary Statistics with Probability
4 units  LR
- 72 hours lecture per term
- Prerequisite: Placement through the assessment process or MATH-120 or 120SP or equivalent
- Note: TI-83 or TI-84 graphing calculator required
This course is designed to introduce the student to the study of statistics and probability. Topics include descriptive statistics (organization of data, histograms and measures of central tendency and spread), linear correlation and regression, design of experiments, introductory probability, random variables, the normal distribution and student’s t-distribution, and statistical inference, including confidence intervals and tests of significance. Use of a graphing calculator or computer for statistical analysis is required. CSU, UC (credit limits may apply to UC - see counselor)

MATH-144  Statway II
4 units  LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: MATH-094 or equivalent
- Note: TI-83 or TI-84 graphing calculator required
This is the second semester of a two-semester course that introduces the concepts of probability and statistics with requisite arithmetic and algebraic topics integrated throughout. It is intended for students in humanities or social sciences majors. Topics include sampling distributions, the Central Limit theorem, confidence intervals and hypothesis testing for means and proportions, chi square tests and mathematical modeling. Learning strategies for success with an emphasis on study skills, resource acquisition, and maintaining a positive perspective towards learning are also discussed and applied.

MATH-150  Topics in Mathematics
.3-4 units  SC
- Variable hours
- Formerly MATH-170
A supplemental course in mathematics to provide a study of current concepts and problems. Specific topics will be announced in the schedule of classes. CSU

MATH-181  Finite Mathematics
3 units  LR
- 54 hours lecture per term
- Prerequisite: Placement through the assessment process or MATH-120 or 120SP or equivalent
This course applies intermediate algebra and critical thinking to solving contemporary problems in business and the life sciences. Topics include linear models, systems of linear equations and inequalities, linear programming (with geometric method and the simplex method), matrix equations, sets and probabilities, Markov chains, game theory, and finance. Students will learn use of a graphing calculator or computer software to manipulate matrices. CSU, UC

MATH-182  Calculus for Management, Life Science and Social Science I
4 units  LR
- 72 hours lecture per term
- Prerequisite: Placement through the assessment process or MATH-135 or MATH-135SP or MATH-191 or equivalent
- Note: Not open to students who received credit for MATH-192 or equivalent
The first in a two-term calculus sequence for management, life science, and social science majors. Topics include the derivative and its applications (including curve sketching, optimization, and rates of change), an introduction to the integral (including Riemann sums and the Fundamental Theorem of Calculus) and its applications. CSU, UC (credit limits may apply to UC - see counselor)

MATH-183  Calculus for Management, Life Science and Social Science II
4 units  LR
- 72 hours lecture per term
- Prerequisite: MATH-182 or equivalent
- Recommended: MATH-121 or equivalent
This is the second course in a two-semester sequence in calculus for management, life science, and social science majors, and is a continuation of MATH-182. Topics include techniques of integration, applications of the integral, multivariable functions, differential equations, and Taylor polynomials. CSU, UC (credit limits may apply to UC - see counselor)

MATH-191  Pre-Calculus
5 units  LR
- 90 hours lecture per term
- Prerequisite: Placement through the assessment process OR MATH-120 or equivalent and MATH-121 or equivalent
- Note: This course has a technology requirement. See individual instructor for further information.
A thorough treatment of functions and their graphs, including polynomial, rational, logarithmic, exponential and trigonometric functions. Conic sections, nonlinear systems, vectors and complex numbers. Use of a graphing calculator or a computer algebra system. CSU, UC (credit limits may apply to UC - see counselor)

MATH-192  Analytic Geometry and Calculus I
5 units  LR
- 90 hours lecture per term
- Prerequisite: Placement through the assessment process or MATH-191 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
Students will learn the elements of analytic geometry, differentiation and integration of algebraic and transcendental functions with applications. Use of a graphing calculator or a computer algebra system is required. CSU, UC (credit limits may apply to UC - see counselor)
MATH-193 Analytic Geometry and Calculus II
5 units LR
- 90 hours lecture per term
- Prerequisite: MATH-192 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
Continuation of MATH-192. Further techniques and applications of integration in geometry, science and engineering. Continued work with algebraic and transcendental functions. Numerical methods in evaluation of the integral. Infinite series, solving differential equations, and applications of differential equations. Polar coordinates, parametric equations and conic sections. CSU, UC (credit limits may apply to UC - see counselor)

MATH-194 Linear Algebra
3 units LR
- 54 hours lecture per term
- Prerequisite: MATH-193 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
Introduction to linear algebra including vector spaces, matrices, determinants, bases, and linear transformations. Techniques for solving systems of equations using matrices, and applications of linear transformations. CSU, UC

MATH-195 Discrete Mathematics
4 units LR
- 72 hours lecture per term
- Prerequisite: MATH-193 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: MATH-193 or equivalent may be taken either as a prerequisite or concurrently
This course provides an introduction to propositional logic, induction, set theory, relations, and functions, counting and combinatorics, introduction to trees, graph theory, algorithms, and algebraic structures. The emphasis is on topics of interest to computer science students. CSU, UC

MATH-292 Analytic Geometry and Calculus III
5 units LR
- 90 hours lecture per term
- Prerequisite: MATH-193 or equivalent
This class covers the further study of limits, parametric equations, vector-valued functions, analytic geometry of three dimensions, partial derivatives, multiple integrals, and Green's, Stokes' and the Divergence theorems. CSU, UC

MATH-294 Differential Equations
5 units LR
- 90 hours lecture per term
- Prerequisite: MATH-292 or equivalent
- Recommended: MATH-194 or equivalent (may be taken concurrently)
This course presents an introduction to the theory and applications of ordinary differential equations and an introduction to partial differential equations. CSU, UC

MATH-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend beyond courses offered.
An opportunity for advanced students to pursue special interests under the direction of the faculty. CSU

MATH-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

MEDICAL LABORATORY TECHNOLOGY - MLT
Tish Young, dean
Biological and Health Sciences Division
Physical Sciences Building, Room 263

Possible career opportunities
MLT responsibilities will vary according to the size of the institution in which they are employed and the extent of the services it offers. Job projections predict that the need for clinical laboratory professionals will increase due to increased demand for testing a replacement of retirees. Students build a career as a medical lab technician while others use their entry jobs as a stepping-stone to accomplish other goals, such as four-year degree for a Clinical Lab Scientist (CLS). MLTs can work in hospital laboratories, physician office laboratories, commercial laboratories, biotechnology, research laboratories, pharmaceutical companies, technical service and sales, and veterinary laboratories.

Program Level Student Learning Outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.
**Associate in science degree**
Medical laboratory technology

**Certificate of achievement**
Medical laboratory technology

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**Associate in science degree - Medical laboratory technology**

This program prepares the student for a position in the health care industry as a medical laboratory technician (MLT). A medical laboratory technician performs routine clinical laboratory testing procedures to provide scientific information needed in diagnosis, prognosis, and treatment of disease. Technicians use sophisticated instrumentation for these evaluations which encompass quantitative and qualitative chemical and biological analyses of body specimens. Technicians function under the supervision of a qualified practitioner.

Through completing the program prerequisites, the student will receive a foundation in biology, chemistry, microbiology, and phlebotomy. The core medical laboratory technology courses provide specific theoretical and laboratory testing procedures, and gain practical exposure to laboratory operations.

Emphasis is placed on the clinical practice in the context of laboratory medicine. Students are prepared to take a nationally recognized certification examination and become licensed MLTs.

To be eligible for enrollment in the medical laboratory technology program applicants must possess a phlebotomy license from an accredited school and complete the specified prerequisite courses prior to submitting an application to be accepted into the program. Students must see a counselor or program advisor to apply for this program.

DVC’s associate degree in medical laboratory technology is designed for those students who desire to complete a two-year degree. General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 2 (CSU G.E.). To earn the degree, students must complete each of the required courses with a “C” grade (75 percent) or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major, and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however the units are only counted once.

**Certificate of achievement - Medical laboratory technology**

This program prepares the student for a position in the health care industry as a medical laboratory technician (MLT). A medical laboratory technician performs routine clinical laboratory testing procedures to provide scientific information needed in diagnosis, prognosis, and treatment of disease. Technicians use sophisticated instrumentation for these evaluations which encompass quantitative and qualitative chemical and biological analyses of body specimens. Technicians function under the supervision of a qualified practitioner.

Through completing the program prerequisites, the student will receive a foundation in biology, chemistry, microbiology, and phlebotomy. The core medical laboratory technology courses provide specific theoretical and laboratory testing procedures, and gain practical exposure to laboratory operations.
Emphasis is placed on the clinical practice in the context of laboratory medicine. Students are prepared to take a nationally recognized certification examination and become licensed MLTs.

To be eligible for enrollment in the medical laboratory technology program applicants must possess a phlebotomy license from an accredited school and complete the specified prerequisite courses prior to submitting an application to be accepted to the program. Students must see a counselor or program advisor to apply for this program. To earn a certificate of achievement, students must complete each of the required courses with a “C” grade (75 percent) or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate.

Students must possess a phlebotomy license from an accredited school and complete:

- **Required Courses**

  - MLT-100  Phlebotomy
    - 5 units
    - 54 hours lecture/108 hours laboratory per term
    - Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

  - MLT-101  Phlebotomy Practicum
    - 2 units
    - 108 hours laboratory per term
    - Prerequisite: MLT-100 or equivalent
    - Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

  - MLT-105  Introduction to Clinical Laboratory Profession
    - 1 unit
    - 18 hours lecture per term

  - MLT-110  Clinical Hematology with Laboratory
    - 4 units
  - MLT-115  Clinical Chemistry I with Laboratory
    - 4 units
  - MLT-120  Clinical Coagulation with Laboratory
    - 1.5 units
  - MLT-125  Clinical Urinalysis and Body Fluids with Laboratory
    - 1.5 units
  - MLT-130  Clinical Chemistry II with Laboratory
    - 4 units
  - MLT-135  Clinical Microbiology with Laboratory
    - 4 units
  - MLT-140  Clinical Immunology and Immunohematology
    - 4 units
  - MLT-160  Clinical Hematology, Coagulation, UA and Body Fluids Practicum
    - 4 units
  - MLT-165  Clinical Chemistry Practicum
    - 4 units
  - MLT-170  Clinical Microbiology Practicum
    - 4 units
  - MLT-175  Clinical Immunology and Immunohematology Practicum
    - 3 units

  - Total minimum required units – core program: 38 units

  - Total minimum required units: 57 units

- **Program Prerequisites or Equivalents**

  - BIOSC-146  Principles of Microbiology
    - 5 units
  - CHEM-108  Introductory Chemistry
    - 4 units
  - CHEM-109  Introduction to Organic and Biochemistry
    - 4 units
  - MLT-105  Introduction to Clinical Laboratory Profession
    - 1 unit

  - plus either:

    - BIOSC-120  Introduction to Human Anatomy and Physiology
      - 5 units
    - or

    - BIOSC-139  Human Anatomy
      - 5 units
    - and

    - BIOSC-140  Human Physiology
      - 5 units

  - Total minimum required units – prerequisites: 19 units

This competency-based course prepares students for entry-level positions in the laboratory. This program will provide the theory and training necessary to qualify graduates to perform job entry level tasks as laboratory assistants, including phlebotomy, by providing training of skill, knowledge and judgment in safety and standard precautions, infection control, patient care and other basic procedures in the clinical laboratory. CSU

Upon successfully completing MLT-100, students enroll in this course in order to be placed in an externship (practicum) which allows them to complete the number of hours of practice required as preparation for the phlebotomy certification exam. Externship site placement is arranged by Diablo Valley College in partnership with its clinical affiliates. Students will perform a minimum of 50 venipunctures and 10 capillaries on patients of various ages. CSU

Introduces the student to the functions and duties of a medical laboratory technician (MLT) and compares and contrasts these duties to the clinical laboratory scientist (CLS). The student will be introduced to clinical laboratory safety issues, regulatory agencies, infection control policies, and professional responsibilities relative to other departments of health care. The student will study medical terminology, patient’s bill of rights, and professional standards of the medical laboratory technician. The student will study specimen processing and computer skills to data management systems within the clinical laboratory. CSU
MLT-110  Clinical Hematology with Laboratory
4 units  LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: BIOSC-120 or BIOSC-140 and MLT-105 and Phlebotomy License or equivalents
- Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

This course presents the origin of the various types of blood cells with emphasis on the red and white blood cells. The student will learn about human hematological disorders and classify these based on clinical laboratory findings. A laboratory component is included that introduces the various techniques and safety procedures used in clinical hematology. The laboratory emphasizes the morphology and identification of common human blood cells. Admission to MLT-program is necessary prior to registration. Successful completion of this course is required to enroll in MLT-160 Clinical Hematology, Coagulation, Urinalysis and Body Fluids Practicum. CSU

MLT-115  Clinical Chemistry I with Laboratory
4 units  LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: CHEM-109, MLT-105 and Phlebotomy License or equivalents
- Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

Provides theoretical, fundamental, basic instrumentation methodologies, and includes practical concepts associated with testing procedures used in the clinical chemistry laboratory. Includes important characteristics and relevance of electrolytes and trace metals including their relationship to acid base balance. Introduces general laboratory principles and specific basic instrumentation methodologies used in clinical chemistry analysis. Review of laboratory math, and a reintroduction to quality control and quality assurance. Emphasizes variables of the preanalytical phase, characteristics important to quality laboratory technique, and safety. CSU

MLT-120  Clinical Coagulation with Laboratory
1.5 units  LR
- 18 hours lecture/27 hours laboratory per term
- Prerequisite: BIOSC-120 or BIOSC-140 and MLT-105 and Phlebotomy License or equivalents
- Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

Provides an overview of the hemostatic process, diseases, and laboratory evaluations associated with the process. Introduces the various techniques and safety procedures used in the clinical coagulation laboratory. Emphasizes platelet function tests, and intrinsic and extrinsic clotting pathway testing. CSU

MLT-125  Clinical Urinalysis and Body Fluids with Laboratory
1.5 units  LR
- 18 hours lecture/27 hours laboratory per term
- Prerequisite: BIOSC-120 or BIOSC-140 and MLT-105 and Phlebotomy License or equivalents
- Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

Introduces various properties and constituents of urine and body fluids via “hands on” learning. Emphasizes interpretation and handling of urine and body fluid specimens. Includes examination of urine and body fluids physically, chemically and microscopically, and compares these clinical values to health and disease. CSU

MLT-130  Clinical Chemistry II with Laboratory
4 units  LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: MLT-105, MLT-115 and Phlebotomy License or equivalents
- Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

Introduces the relationships between the endocrine system and specimens assayed in the clinical laboratory, including tumor markers, therapeutic drugs, and toxicology. Emphasizes liver, kidney, pancreatic function and vitamins assayed with test results, and comparison with states of health and disease. Includes function and laboratory analysis of various body fluids. Introduces the endocrine system, therapeutic drug assays and compounds, and other clinical chemistry tests. Emphasizes the automated instrumentation which will include quality control review, maintenance, and clinical operation. CSU

MLT-135  Clinical Microbiology with Laboratory
4 units  LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: BIOSC-146, MLT-105 and Phlebotomy License or equivalents
- Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

Introduces microorganisms of medical microbiology with emphasis on the characteristics of clinically significant microorganisms and their biochemical profile, media for isolation, and identification methods for selected pathogens. Emphasizes identification methods, theories, and techniques used in basic bacteriology, parasitology, virology, and mycology. The laboratory introduces various techniques and safety procedures in clinical microbiology. Emphasizes morphology and identification of common pathogenic organisms. CSU
MLT-140  Clinical Immunology and Immunohematology with Laboratory
4 units LR
• 54 hours lecture/54 hours laboratory per term
• Prerequisite: BIOSC-120 or BIOSC-140 and MLT-105 and Phlebotomy License or equivalents
• Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

Introduces basic principles of antigen and antibody reactions included in blood grouping and typing, compatibility testing and serological procedures. Emphasizes serological and immunohematology procedures and techniques to measure analytes qualitatively and quantitatively. CSU

MLT-160  Clinical Hematology, Coag, UA and Body Fluids Practicum
4 units LR
• 220 hours laboratory per term
• Prerequisite: MLT-110, MLT-120, and MLT-125 or equivalents
• Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

Introduces entry-level clinical laboratory practice and experience in the department of hematology, urinalysis, coagulation and body fluids. Emphasizes technique, theory and application of knowledge. Different instrumentation methods will be introduced and studied as well as bench/manual methods. Competence will be evaluated based on final clinical evaluations. This practicum will be conducted at a clinical affiliate site that will be assigned by the MLT (medical laboratory technology) Program Coordinator. CSU

MLT-165  Clinical Chemistry Practicum
4 units LR
• 220 hours laboratory per term
• Prerequisite: MLT-130 or equivalent
• Note: Only students who are accepted into the medical laboratory technology program (or accepted as an alternate) will be allowed to register for this course.

Introduces entry-level clinical laboratory practice and experience in the department of chemistry and special chemistry. Emphasizes technique, accuracy, and precision. Different instrumentation methods will be introduced as well as bench/manual methods. Competence will be evaluated based on final clinical evaluations. This practicum will be conducted at a clinical affiliate site that will be assigned by the MLT (medical laboratory technology) Program Coordinator. CSU

MLT-170  Clinical Microbiology Practicum
4 units LR
• 220 hours laboratory per term
• Prerequisite: MLT-135 or equivalent
• Note: Only students who are accepted into the medical laboratory technician program (or accepted as an alternate) will be allowed to register for this course.

Introduces entry-level clinical laboratory practice and experience in the department of microbiology, mycology, parasitology and virology. Emphasizes identification methods, theory and technique. Different instrumentation methods will be introduced and studied as well as bench/manual methods. Competence will be evaluated based on final clinical evaluations. This practicum will be conducted at a clinical affiliate site that will be assigned by the MLT (medical laboratory technology) Program Coordinator. CSU

Possible career opportunities
Music prepares students for careers as performers, teachers, composers, historians, arts administrators, and more. Career options include: conductor, arranger, film scorer/composer, music business/manager, music editor, music supervisor/director, songwriter, transcriber, editor (print music publishing), choir director, midi engineering, recording engineer, studio director or manager, sound designer, music therapist, instrumental soloist, sound technician, and tour coordinator. Many careers require more than two years of study.
**Program level student learning outcomes**

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

**Associate in arts degrees**

Music

Music industry studies

**Certificate of achievement**

Music industry studies

**Associate in arts degree - Music**

The associate in arts degree in music offers students the opportunity to attain the basic skills and knowledge needed as preparation for careers in music and further undergraduate study. The music major is a two-year program of transferable courses open to all students. Required courses include applied music, theory and musicianship, piano proficiency, and large ensemble. The choice of large ensemble performance courses and literature courses enables the student to customize his/her own needs and/or special interests.

This degree provides students with the foundations for a broad range of musical specializations such as instrumental performance, vocal performance, jazz performance, composition, theory, musicology, ethnomusicology, music education, and music industry. Music faculty and staff are dedicated to assisting students in exploring performance and teaching opportunities, and transfer to four-year institutions of higher learning.

The DVC music major is intended for transfer. Students who intend to transfer to a four-year baccalaureate program should consult with a counselor regarding specific major preparation requirements at the transfer institution of their choice. Students may not take a pass/no pass option for major courses. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.

Students must complete each of the courses required for the major with a “C” grade or higher. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements**

<table>
<thead>
<tr>
<th>units</th>
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<tbody>
<tr>
<td>applied music</td>
</tr>
<tr>
<td>a minimum of 2 times for a total of 3 units</td>
</tr>
<tr>
<td>MUSIC-100  Applied Music ...................................................... 1.5</td>
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</tbody>
</table>

**theory and musicianship**

<table>
<thead>
<tr>
<th>units</th>
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<tbody>
<tr>
<td>MUSIC-122* Theory and Musicianship I .................................. 4</td>
</tr>
<tr>
<td>MUSIC-123* Theory and Musicianship II ................................ 4</td>
</tr>
<tr>
<td>MUSIC-222 Theory and Musicianship III .................................. 4</td>
</tr>
<tr>
<td>MUSIC-223 Theory and Musicianship IV .................................... 4</td>
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</table>

**piano proficiency**

<table>
<thead>
<tr>
<th>units</th>
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<tbody>
<tr>
<td>MUSIC-150 Beginning Piano I .................................................. 1*</td>
</tr>
<tr>
<td>MUSIC-151 Beginning Piano II ................................................ 1*</td>
</tr>
</tbody>
</table>

**large ensemble**

<table>
<thead>
<tr>
<th>total minimum required units</th>
</tr>
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<tbody>
<tr>
<td>plus a minimum of 4 units from:</td>
</tr>
<tr>
<td>MUSIC-135 Vocal Jazz Ensemble .............................................. 1</td>
</tr>
<tr>
<td>MUSIC-136 Jazz Ensemble ...................................................... 1</td>
</tr>
<tr>
<td>MUSIC-140 Wind Ensemble .................................................... 1</td>
</tr>
<tr>
<td>MUSIC-162 Concert Choir ..................................................... 1</td>
</tr>
<tr>
<td>MUSIC-166 Chamber Singers .................................................... 1</td>
</tr>
<tr>
<td>MUSIC-180 Diablo Valley Masterworks Chorale ................................ 1</td>
</tr>
<tr>
<td>MUSIC-236 Night Jazz Band ................................................... 1</td>
</tr>
<tr>
<td>MUSIC-240 Symphonic Band .................................................... 1</td>
</tr>
<tr>
<td>MUSIC-290 DVC Philharmonic Orchestra ..................................... 1</td>
</tr>
</tbody>
</table>

*Credit by examination available

**recommended courses**

**music literature**

<table>
<thead>
<tr>
<th>units</th>
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<tbody>
<tr>
<td>MUSIC-110 Introduction to Music Literature ................................ 3</td>
</tr>
<tr>
<td>MUSIC-112 America’s Music - A Multicultural Perspective ...... 3</td>
</tr>
<tr>
<td>MUSIC-114 World Music ......................................................... 3</td>
</tr>
<tr>
<td>MUSIC-117 History of Rock and R&amp;B .......................................... 3</td>
</tr>
<tr>
<td>MUSIC-118 History of Jazz ...................................................... 3</td>
</tr>
</tbody>
</table>

**Associate in arts degree - Music industry studies**

This associate in arts program prepares students for a career in the music industry. The program has an entrepreneurial focus emphasizing an industry trend requiring artists to be responsible for complete project development. The program is designed to produce well-rounded music industry professionals capable of all aspects of the music production process including recording, marketing, and distribution. The same skill-set also prepares students for careers in specialized areas of the music industry such as digital audio workstation operator, recording engineer, producer, composer, arranger, songwriter, sound designer, artist manager, distributor, and marketing representative.

The DVC music industry studies major is not intended for transfer. Option 1 (DVC General Education) is advised for students who do not intend to transfer. Students may not take a pass/no pass option for major courses. Students who intend to transfer to a four-year baccalaureate program should consult with a counselor regarding specific major preparation requirements at the transfer institution of their choice. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.).

Students must complete each of the courses required for the major with a “C” grade or higher. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.
To earn a certificate of achievement, students must complete areas of the music industry such as digital audio workstation skill-set also prepares students for careers in specialized professionals capable of all aspects of the music production process including recording, marketing, and distribution. The same This certificate program prepares students for a career in focus emphasizing an industry trend requiring artists to be responsible for complete project development. The program is designed to produce well-rounded music industry professionals capable of all aspects of the music production process including recording, marketing, and distribution. The same skill-set also prepares students for careers in specialized areas of the music industry such as digital audio workstation operator, recording engineer, producer, composer, arrange-songwriter, sound designer, artist manager, distributor, and marketing representative.

Certificate of achievement - Music industry studies

This certificate program prepares students for a career in the music industry. The program has an entrepreneurial focus emphasizing an industry trend requiring artists to be responsible for complete project development. The program is designed to produce well-rounded music industry professionals capable of all aspects of the music production process including recording, marketing, and distribution. The same skill-set also prepares students for careers in specialized areas of the music industry such as digital audio workstation operator, recording engineer, producer, composer, arrange-songwriter, sound designer, artist manager, distributor, and marketing representative.

To earn a certificate of achievement, students must complete the required courses with a “C” grade or higher. Required courses are available in the evening and during the day.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
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</thead>
<tbody>
<tr>
<td>MUSIC-172 Introduction to Electronic Music and MIDI</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-173 Advanced Electronic Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-174 Introduction to Pro Tools</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-175 Advanced Pro Tools</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-181 Introduction to the Music Industry</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 9 units from:

| COOP-170 Occupational Work Experience Education | 1-4 |
| MUSIC-124 Introduction to Music Production and Multi-Track Recording | 3 |
| MUSIC-125 Advanced Music Production and Multi-Track Recording | 3 |
| MUSIC-177 Introduction to Reason | 3 |
| MUSIC-178 Sound for Picture | 3 |
| MUSIC-182 Songwriting | 3 |
| MUSIC-270 Applied Projects in Music Industry Studies | 3 |

MUSIC-100 Applied Music

1.5 units LR
- May be repeated three times
- 27 hours lecture/6 hours lecture by arrangement/72 hours laboratory by arrangement per term

This course provides individualized instruction for musical instruments or voice. Students receive six hours of lessons from an instructor scheduled throughout the semester. Students are required to practice at least six hours per week during scheduled supervised practice hours in the department practice rooms, meet weekly for general lecture and discussion, and to evaluate each others performances. Each student is required to perform four times in class, and once for a jury at the end of the semester. CSU, UC

MUSIC-101 Beginning Guitar

1 unit SC
- 54 hours lecture per term
- Note: Students must provide an acoustic six-string guitar for use in the course

This course provides beginning six-string guitar instruction for general students as well as music students seeking to learn a second instrument. The course includes instruction in both folk and classical styles. First position keys and chords, harmonization by ear, transposition, various strums and styles, finger-picking accompaniments, bass notes, basic music theory, and note reading are taught. No previous musical experience is necessary. CSU, UC

MUSIC-102 Intermediate Guitar

1 unit SC
- 54 hours lecture per term
- Recommended: MUSIC-101 or equivalent
- Note: Students must provide an acoustic six-string guitar for use in the course

This course provides intermediate six-string guitar instruction for students who have satisfactorily completed MUSIC-101 or the equivalent. Intermediate level classical solo repertoire as well as equivalent level popular music will be examined. Bar chords, intermediate level keys and arpeggios, transposition with and without a capo, strums, bass runs, and classical theory will be taught. CSU, UC
MUSIC-103 Guitar Ensemble
1 unit SC
- May be repeated three times
- 54 hours lecture per term
- Recommended: MUSIC-102 or equivalent
- Note: Students must provide an acoustic six-string guitar for use in the course

This course focuses on the sight-reading, rehearsal, and performance of basic-level guitar ensemble literature. Basic note reading skills will be employed. Each member of the group will become a better musician through individual practice, listening, performance, and being an active part of the ensemble experience. CSU, UC

MUSIC-104 Advanced Guitar Ensemble
1 unit SC
- May be repeated three times
- 54 hours lecture per term
- Recommended: MUSIC-103 or equivalent
- Note: Students must provide an acoustic six-string guitar for use in the course

This course focuses on the sight-reading, rehearsal, and performance of advanced guitar ensemble literature. Students will experience an expanded ensemble repertoire arranged for up to eight players featuring the music of Bach, Haydn, and other classical masters. Advanced note reading skills will be employed. Each member of the group will become a better musician through individual practice, listening, performance, and being an active part of the ensemble experience. CSU, UC

MUSIC-105 Blues, Rock, and R&B Performance
1 unit SC
- May be repeated three times
- 54 hours lecture per term

This is a course in the theory and performance of Blues, Rock & Roll and Rhythm & Blues. Instrumentalists (guitar, bass, drums, horns and piano) and vocalists form small ensembles to examine, rehearse, and perform music from these contemporary American musical styles. Clinics by guest artists and industry experts will be included. New music is performed each term. CSU, UC

MUSIC-106 Country, Funk, and Soul Performance
1 unit SC
- May be repeated three times
- 54 hours lecture per term

This is a course in the theory and performance of Country, Funk, and Soul. Advanced instrumentalists (guitar, bass, drums, horns and piano) and vocalists form small ensembles to examine, rehearse, and perform music from these contemporary American music styles. Clinics by guest artists and industry experts will be included. New music is studied each term. CSU, UC

MUSIC-107 Live Popular Concert Performance and Production
1 unit SC
- 54 hours lecture per term
- Formerly MUSPF-107

This course is a practical performance class in a professional venue environment. The focus of the course will be the fundamentals of integration an American roots performance ensemble (rock, soul, funk, blues, R & B, and country) booking an act, sound systems, and business concerns into the live performance experience. CSU

MUSIC-110 Introduction to Music Literature
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly MUSLT-110

This course is an introduction to the experience of listening to music with an appreciation of its technical, stylistic, expressive, social and historical aspects. Audio recordings, audio-video recordings, and live performances are used to study the evolution of Western classical styles and genres including opera, symphony, concerto, and chamber music, as well as jazz and rock. Some comparison of Western musical traditions with those of other cultures will be included. CSU, UC

MUSIC-112 America’s Music- A Multicultural Perspective
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly MUSLT-112

This course is based upon the idea that music is culture. Students will explore, evaluate, compare, and contrast the diverse music and traditions of America. This includes the cultural contributions and influences of major ethnic groups. The course will serve as an introduction to the field of ethnomusicology. Students will examine the historical, religious, political, and social contexts for music development and experience. Students will study the relation of music to cultural continuity and/or change within both mainstream and marginalized populations. CSU, UC

MUSIC-114 World Music
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly MUSLT-114

This course provides a survey of world music. Students will explore, evaluate, compare and contrast the diverse musics and traditions, focusing on the cultural contributions and influences in the Americas, Asia, the Middle East, Africa, Oceania, and Europe. Historical, cultural, philosophical
and social conditions in which music exists, its relationship to cultural continuity and/or change, as well as the artistic conditions in which musics and cultures develop will be explored through three primary lenses - sound, concept, and behavior. This course serves as an introduction to the field of ethnomusicology. CSU, UC

MUSIC-115  Music of the Middle East, North Africa, and South Asia
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly MUSLT-115
This course is a survey of Middle Eastern, North African, South Asian and Diaspora music cultures. Students will study popular and sacred musical traditions in both rural and urban contexts, and learn how music making relates to: religion, political, ethnic and national identity, popular culture, gender, and globalization. Historical, cultural, and social conditions for music will be explained, and current global issues and events will be demonstrated through evaluating the ways in which hybrid musical forms emerge when Middle Eastern, Western and other musical and cultural elements blend or conflict. CSU, UC

MUSIC-116  Native American Music
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly MUSLT-116
This course provides a survey of the numerous musical traditions, contributions and influences of the Native peoples in the Americas, including the Caribbean and Hawaii. Numerous traditions involving music will be presented that are affected by historical and current social and political conditions. Global issues and events will be explained through analyzing the ways in which new or hybrid musical forms emerge when Native, Western and other musical and cultural elements blend or come into conflict. Music will be explained as a symbol of identification and a tool of resistance in the process of cultural continuity and change. Perspectives will be drawn from ethnomusicology, the social sciences, multimedia, and Internet sources. CSU, UC

MUSIC-117  History of Rock and R&B
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly MUSLT-117
The course will examine the history of rock and roll and its musical roots. Students will learn basic music listening skills while examining the multicultural history of rock and its connection to contemporary American culture. Audio recordings, audio-visual recordings, and live performances are used to study the evolution of rock and its various musical roots including blues, country, R&B, and folk music. CSU, UC

MUSIC-118  History of Jazz
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly MUSLT-118
This course is for the study of the history of jazz music from traditional, ragtime, boogie-woogie, stride, swing, bebop, and cool, to various contemporary jazz, and fusion art forms. It includes a study of the forces that have shaped the art from European, African, Latin, and African-American influences. The class explores the contributions and conflicts of African-Americans throughout the history and development of this American music. CSU, UC

MUSIC-120  Introduction to Music Skills
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is for the study of the fundamentals of Western music applicable to both classical and popular styles. The study addresses notation; fundamental theoretical concepts; musicianship skills including sight signing, rhythmic training, ear training, dictation, and keyboard realization; and basic compositional skills. CSU, UC (credit limits may apply to UC - see counselor)

MUSIC-122  Theory and Musicianship I
4 units  SC
- 108 hours lecture per term
- Note: Credit by examination option available
This course is a study of the fundamentals of Western music applicable to both classical and popular styles. The study addresses notation; fundamental theoretical concepts; musicianship skills including sight signing, rhythmic training, ear training, dictation, and keyboard realization; and basic compositional skills. CSU, UC
MUSIC-123  Theory and Musicianship II  
4 units  SC  
- 108 hours lecture per term  
- Recommended: MUSIC-122 or equivalent  
- Note: Credit by examination option available  
This course is a study of harmony in the Western Common Practice. It addresses diatonic functionality, four-part voice leading, simple musical structures, harmonic and formal analysis, and musicianship skills including sight singing, rhythmic training, ear training, dictation, and keyboard realization. CSU, UC

MUSIC-124  Introduction to Music Production and Multi-Track Recording  
3 units  SC  
- 54 hours lecture per term  
This course is designed to give the music student a working knowledge of the principles and techniques of multi-track recording. This course will explore, analyze and evaluate contemporary music production techniques and apply these techniques to real production and recording situations. Emphasis will be on student involvement with various interrelated roles, including that of studio musician, writer/arranger, producer and sound engineer. CSU

MUSIC-125  Advanced Music Production and Multi-Track Recording  
3 units  SC  
- 54 hours lecture per term  
- Recommended: MUSIC-124 or equivalent  
This course extends basic practical music production and multi-track recording skills to include more complex projects, integration of acoustic and recording elements, and use of current computer software in the mixing process. CSU

MUSIC-127  Jazz Theory and Improvisation  
.5-1 unit  SC  
- Variable hours  
- Recommended: MUSIC-122 or equivalent  
This is the study of jazz theory and performance of jazz music with emphasis on improvisation and writing for the small jazz ensemble. Students will perform in class. CSU, UC

MUSIC-130  Jazz Workshop  
1 unit  SC  
- May be repeated three times  
- 54 hours lecture per term  
- Prerequisite: Audition  
- Formerly MUSPF-130  
This course is for the development of skills needed to play jazz. Skills addressed include intonation, rhythmic accuracy, tone, dynamic control, style specific articulation, phrasing, and expression, sight-reading, improvisation and practicing. Skills are developed in an ensemble setting. A variety of styles will be studied, including Medium Swing, Latin and Fusion. Public performance is included. New literature will be studied each term. CSU, UC

MUSIC-134  Musical Theater Workshop  
1 unit  SC  
- 54 hours lecture per term  
- Prerequisite: Audition  
- Formerly MUSPF-134  
This course provides training and experience for instrumentalists and vocalists in the production and presentation of a musical including comprehensive rehearsal and performance. CSU, UC

MUSIC-135  Vocal Jazz Ensemble  
1 unit  SC  
- May be repeated three times  
- 54 hours lecture per term  
- Prerequisite: Audition  
- Formerly MUSPF-135  
This course is for the study, rehearsal and public performance of standard vocal jazz ensemble literature for mixed voices. New literature will be studied each term to address different technical and artistic issues. CSU, UC

MUSIC-136  Jazz Ensemble  
1 unit  SC  
- May be repeated three times  
- 54 hours lecture per term  
- Prerequisite: Audition  
- Formerly MUSPF-136  
This course is a study of performance in a jazz ensemble both as a soloist and a member of a section. Skills addressed include section and ensemble intonation, rhythmic accuracy, tone, blend, balance, style specific articulation, phrasing, and expression, and improvisation. A variety of styles will be studied including Ballad, Shuffle and Funk. Public performance is included. New literature will be studied each semester. CSU, UC

MUSIC-137  Jazz Combos  
1 unit  SC  
- May be repeated three times  
- 54 hours lecture per term  
- Prerequisite: Audition  
- Formerly MUSPF-137  
This is a course made up of small jazz combos that rehearse and perform a variety of jazz styles. The course develops the ability to improvise, sight read, and perform in a variety of small group settings. The combos will perform at various concerts and festivals. This course is for students with intermediate to advanced ability on an instrument or voice with improvisational experience. CSU, UC
MUSIC-139 Marching Band Techniques
1 unit LR
- May be repeated three times
- 54 hours lecture per term
This is a performance organization whose goals include the sight-reading, rehearsal and performance of a variety of marching band literature. Each member of the group will become a better musician through individual practice and performance, listening and being an active part of the marching band experience. New literature will be performed each term. CSU, UC (credit limits may apply to UC - see counselor)

MUSIC-140 Wind Ensemble
1 unit LR
- May be repeated three times
- 54 hours lecture per term
- Prerequisite: Audition
- Formerly MUSPF-140
This is a performance organization whose goals include the sight-reading, rehearsal and performance of a variety of wind ensemble literature. Each member of the group will become a better musician through individual practice and performance, listening and being an active part of the ensemble experience. New literature will be performed each term. CSU, UC

MUSIC-142 Woodwind Ensemble
1 unit SC
- May be repeated three times
- 54 hours lecture per term
- Prerequisite: Audition
- Formerly MUSPF-142
This performance ensemble focuses on the sight-reading, rehearsal and performance of woodwind ensemble literature. Each member of the group will become a better musician through individual practice and performance, listening and being an active part of the ensemble experience. CSU, UC

MUSIC-144 Brass Ensemble
1 unit LR
- May be repeated three times
- 54 hours lecture per term
- Prerequisite: Audition
- Formerly MUSPF-144
This performance ensemble focuses on the sight-reading, rehearsal and performance of brass ensemble literature. Each member of the group will become a better musician through individual practice and performance, listening and being an active part of the ensemble experience. CSU, UC

MUSIC-150 Beginning Piano I
1 unit SC
- 54 hours lecture per term
This course provides group instruction in piano for students with no prior keyboard experience. Students will learn ensemble and solo works, acquire basic rhythm, and develop fundamental keyboard and music theory skills based on major and minor five-note patterns. This course is designed for both music majors planning to transfer, as well as for students who are studying primarily for personal enjoyment. Attention is given to the student’s individual needs, goals, and abilities. CSU, UC

MUSIC-151 Beginning Piano II
1 unit SC
- Recommended: MUSIC-150 or equivalent
Group instruction in piano for the student who has had Beginning Piano I or its equivalent. Students will learn to play ensemble and solo works beyond the five-finger position. Classical and popular music will be emphasized. The course is designed for both music majors planning to transfer as well as those studying primarily for personal enjoyment. CSU, UC

MUSIC-152 Jazz Piano
1 unit SC
- 54 hours lecture per term
- Recommended: MUSIC-151 or equivalent
This course is for the study of the theory and practice of jazz piano through learning chords, voicings, improvisational techniques, and various idiomatic styles. CSU, UC

MUSIC-154 Beginning Woodwind Instruments
1 unit SC
- 54 hours lecture per term
This course provides beginning flute, clarinet, oboe, saxophone and bassoon instruction for general students as well as music students seeking to learn a second instrument. The course includes fundamentals of tone production, articulation, and basic instrumental technique. CSU, UC

MUSIC-155 Beginning Brass Instruments
1 unit SC
- 54 hours lecture per term
This course provides beginning trumpet, horn, trombone, euphonium (baritone) and tuba instruction for general students as well as music students seeking to learn a second instrument. The course includes fundamentals of tone production, articulation and basic instrumental technique. CSU, UC
MUSIC-156  Beginning String Instruments
1 unit  SC
• 54 hours lecture per term
This course provides beginning violin, viola, cello, and double bass instruction for general students as well as music students seeking to learn a second instrument. The course includes fundamentals of bowing, ear training and basic instrumental technique. CSU, UC

MUSIC-157  Beginning Percussion Instruments
1 unit  SC
• 54 hours lecture per term
This course provides beginning snare drum, keyboard mallet and timpani instruction for general students as well as music students seeking to learn a second instrument. The course includes fundamentals of drum rudiments, ear training and basic instrumental technique. CSU, UC

MUSIC-162  Concert Choir
1 unit  SC
• May be repeated three times
• 54 hours lecture per term
• Prerequisite: Audition
• Formerly MUSPF-162
This course is the study, rehearsal and public performance of standard choral literature for mixed voices. New literature will be studied each term. CSU, UC

MUSIC-166  Chamber Singers
1 unit  SC
• May be repeated three times
• 54 hours lecture per term
• Prerequisite: Audition
• Formerly MUSPF-166
This course is for the study and public performance of ancient through contemporary chamber choir literature including music influenced by non-Western cultures. New literature is studied each term. CSU, UC

MUSIC-168  Percussion Ensemble
1 unit  SC
• May be repeated three times
• 54 hours lecture per term
• Prerequisite: Audition
• Formerly MUSPF-168
This performance ensemble focuses on the sight-reading, rehearsal and performance of percussion ensemble literature. Each member of the group will become a better musician through individual practice and performance, listening and being an active part of the ensemble experience. CSU, UC

MUSIC-170  Applied Voice Training
1 unit  SC
• 54 hours lecture per term
This course is a study of the fundamentals of vocal tone production, breathing, vocal placement, and song interpretation as it applies to standard vocal repertoire. CSU, UC

MUSIC-171  Jazz and Popular Solo Voice
1 unit  SC
• 54 hours lecture per term
This course is a study of the fundamentals of vocal tone production, breathing, vocal placement, and song interpretation as it applies to jazz, Broadway and other popular vocal styles. CSU, UC

MUSIC-172  Introduction to Electronic Music and MIDI
3 units  SC
• 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
This is an introductory course that provides the foundational skills necessary for the creation of electronic music on a digital audio workstation capable of utilizing MIDI (Musical Instrument Digital Interface). Students will gain direct hands-on experience with MIDI-capable synthesizers, tone generators and samplers, digital signal processors, and computer-based music sequencing software. CSU

MUSIC-173  Advanced Electronic Music
3 units  SC
• 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
• Recommended: MUSIC-172 or equivalent
This advanced course builds upon the knowledge and technical skills developed in MUSIC-172: Introduction to Electronic Music and MIDI. Students will learn to integrate the MIDI and digital audio recording environments and also develop the advanced post production skills needed for employment in the music recording industry. Topics will include digital audio recording and editing, effects processing, mixing, and digital audio file management and conversion, sampling, synthesis, and advanced MIDI sequencing. CSU

MUSIC-174  Introduction to Pro Tools
3 units  SC
• 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
• Note: Students may petition to repeat this course when software or hardware is changed.
This is an introductory course that will provide the foundational skills to learn and function within the Pro Tools audio production environment. Pro Tools represents a new generation of digital audio workstations that uses the power of personal computers and digital signal processing to record multi-track digital audio directly to hard disk. Topics will include digital multi-track recording, effects processing and digital audio mixing techniques. CSU
MUSIC-175  Advanced Pro Tools
3 units  SC
• 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
• Recommended: MUSIC-174 or equivalent
• Note: Students may petition to repeat this course when software or hardware is changed.
This advanced course is designed for students who are preparing for employment in the music recording industry. Students will work on special production-oriented projects utilizing a Pro Tools capable digital audio workstation (DAW). Working independently and in teams, students will use the recording production tools that they have developed in prior terms. Topics include acoustic recording, field recording, sound design, sound for picture, control surfaces, use of external signal processors, surround sound, and advanced mixing techniques. CSU

MUSIC-176  String Ensemble
1 unit  LR
• May be repeated three times
• 54 hours lecture per term
• Prerequisite: Audition
• Formerly MUSPF-176
This performance ensemble focuses on the sight-reading, rehearsal and performance of string ensemble literature. Each member of the group will become a better musician through individual practice and performance, listening and being an active part of the ensemble experience. CSU, UC

MUSIC-177  Introduction to Reason
3 units  SC
• 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
• Note: Students may petition to repeat this course when software or hardware is changed.
This course will provide the foundational skills needed to learn and function within the music production environment of Reason. This software application represents a new generation of the stand-alone virtual recording studio. Topics will include music sequencing, digital audio recording, software synthesis and sampling, virtual effects, automation, signal flow, and drum machines. CSU

MUSIC-178  Sound for Picture
3 units  SC
• 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
• Note: Students may petition to repeat this course when software or hardware is changed.
This class examines the topic of sound for picture through a combination of lecture and hands-on experience with a Digital Audio Workstation that is video capable. Students will develop the skill set needed to create soundtracks for film, television, commercials, and video games. Students will learn the three layers of sound for picture: dialog, music, and sound effects including Foley and ambiance. Each of these layers will be discussed and worked on in depth through lab projects. CSU

MUSIC-179  Intermediate Applied Voice
1 unit  SC
• 54 hours lecture per term
This course is a continued study of the fundamentals of vocal tone production, breathing, and vocal placement. Emphasis will be placed on song interpretation and vocal pedagogy. CSU

MUSIC-180  Diablo Valley Masterworks Chorale
1 unit  SC
• May be repeated three times
• 54 hours lecture per term
• Prerequisite: Audition
• Formerly MUSPF-180
This course is the study and performance of major works of the choral literature, along with practical experience in the operation of a community chorus. New literature is studied each term. CSU, UC

MUSIC-181  Introduction to the Music Industry
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
An introduction to the music industry, including its evolution, corporate structure, and legal practices such as contracts, copyrights, licenses, management teams, and royalties. Other topics include record production; music publishing; marketing; use of music in film, television, and advertising; touring; development and implementation of business plans; and career strategies. CSU

MUSIC-182  Songwriting
3 units  SC
• 54 hours lecture per term
This course is an introduction to modern song writing techniques. Students will learn to create their own musical compositions. Approaches to contemporary issues in song writing including development of melodic, lyrical, and rhythmic ideas will be studied. In addition, students will learn strategies for promoting their songs in the contemporary music marketplace as well as basic concepts of intellectual property right protection. CSU
MUSIC-190  Topics in Music
.3-4 units  SC
  Variable hours
A supplemental course in music to provide a study of current topics in music. Specific topics will be announced in the schedule of classes. CSU

MUSIC-222  Theory and Musicianship III
4 units  SC
  • 108 hours lecture per term
  • Recommended: MUSIC-123 or equivalent
This course is a study of harmony in the Western Common Practice. It addresses sequences, melodic and rhythmic figuration, leading-tone 7th chords, mixture, applied dominants and modulation, four-part voice leading, large formal structures, harmonic and formal analysis, and musicianship skills including sight singing, rhythmic training, ear training, dictation, and keyboard realization. CSU, UC

MUSIC-223  Theory and Musicianship IV
4 units  SC
  • 108 hours lecture per term
  • Recommended: MUSIC-222 or equivalent
This course is a study of chromatic harmony, 20th century harmonic practices, large musical structures, harmonic, structural, and stylistic analysis, and musicianship skills including sight singing, rhythmic training, ear training, dictation, and keyboard realization of chromatic and 20th century materials. CSU, UC

MUSIC-236  Night Jazz Band
1 unit  SC
  • May be repeated three times
  • 54 hours lecture per term
  • Prerequisite: Audition
  • Formerly MUSPF-236
This course is for the study of playing big band jazz in festival, club, and tour settings. A variety of styles will be studied, including Hip-Hop, odd-meter, and Fast Swing. The course includes working with a major guest artist. Public performance is included. New literature will be studied each term. CSU, UC

MUSIC-240  Symphonic Band
1 unit  LR
  • May be repeated three times
  • 54 hours lecture per term
  • Prerequisite: Audition
  • Formerly MUSPF-240
This is a performance organization whose goals include the sight-reading, rehearsal and performance of a variety of symphonic band literature. Each member of the group will become a better musician through individual practice and performance, listening and being an active part of the ensemble experience. New literature will be studied each term. CSU, UC

MUSIC-250  Piano Technique and Interpretation
1 unit  SC
  • 54 hours lecture per term
  • Recommended: MUSIC-151 or equivalent
This course provides group and one-on-one instruction in playing the piano with an emphasis on developing technical and interpretive skills essential for proper playing of music from classical and popular repertoire. Methods of preparation based on an understanding of period/composer-specific performance practice is essential. The course addresses posture, freedom of motion, and tonal production through physical and anatomical awareness. Essential for the serious musician and those wishing to refine technical and interpretive understanding. CSU, UC

MUSIC-252  Piano Ensemble
1 unit  SC
  • May be repeated three times
  • 54 hours lecture per term
  • Prerequisite: Audition
This course is for the study and performance of piano music for multiple pianists and works for voice/instrument(s) and piano from the Western classical tradition. This course is held in a master class format and fulfills the ensemble recommendation for MUSIC-100. Solo instrumentalists and vocalists are encouraged to audition. CSU, UC

MUSIC-255  Piano Repertoire and Performance
1 unit  SC
  • May be repeated three times
  • 54 hours lecture per term
  • Prerequisite: Audition
This course is for the study and performance of Baroque, Classical, Romantic, and Contemporary keyboard works in a master class format. New literature will be studied each term. CSU, UC

MUSIC-256  Pedagogy for Studio Music Teachers
1 unit  SC
  • 54 hours lecture per term
This class is a practical study of pedagogy, or the science and art of teaching. This course is designed for current and aspiring studio music teachers of keyboard and instrumental students. Through performance, discussion, research, and lecture/demonstration, students will explore ways to augment, develop, and review methods of teaching and performance, gaining the ability to successfully work with learning styles of diverse population through utilizing an interdisciplinary approach. CSU
MUSIC-270  Applied Projects in Music Industry Studies
3 units  SC
• 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
• Recommended: MUSIC-124, 172, 174, 181 or equivalents
This course is designed for students who are preparing for a career in the music industry and will emphasize the entrepreneurial skill-set needed for professional music production, marketing and distribution. Students will work on special production-oriented projects utilizing the college’s Internet radio station and record label as a laboratory. Working independently and in teams, students will practice and apply the music production tools and business skills they have developed in prior terms of the music industry studies program. Projects will vary from term to term. CSU

MUSIC-290  DVC Philharmonic Orchestra
1 unit  SC
• May be repeated three times
• 54 hours lecture per term
• Prerequisite: Audition
• Note: The number of players per instrumental section is determined by instrumentation of the literature being studied and/or by standard orchestral proportions. Students not admitted to the orchestra will be directed to other music performance classes.
• Formerly MUSPF-290
This course is for the study, rehearsal, and public performance of the standard Western classical orchestral literature along with new orchestral compositions. New literature will be studied each term so that different technical and artistic issues are addressed. CSU, UC

MUSIC-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to pursue special interests under direction of the faculty. CSU

MUSIC-299  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

NATURAL SCIENCE
See Biological science - BIOSC

NUTRITION – NUTRI
Diablo Valley College is approved by the California Board of Registered Nurses for continuing education credits (Provider #CEP 7992). Nutrition courses which can be used are NUTRI-115 and 160.

Tish Young, dean
Biological and Health Sciences Division
Physical Sciences Building, Room 263

Possible career opportunities
Courses offered within the nutrition discipline prepare students for numerous career paths. These courses begin to prepare the student for careers in food science, dietetics, nursing, dental hygiene, restaurant management, and sports nutrition as well as many other food related or health related professions. Specific courses also meet the requirements for certain certificate program and majors offered at DVC and other colleges.

NUTRI-115  Nutrition and Health: Personal Applications
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an introduction to nutrition designed for a variety of majors. The focus of this course is the application of basic nutrition concepts to personal life skills. The interface of culture, socioeconomic conditions and personal behaviors with nutritional health will be examined. Practical application of the course content includes, but is not limited to, personal nutrition assessments and diet planning. CSU, UC (credit limits may apply to UC - see counselor)

NUTRI-120  Sports Nutrition: Fueling the Athlete
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course includes the integration of the principles of nutrition and physical exercise in order to optimize physical fitness and athletic performance. Topics will include nutritional needs of the athlete like diet planning to optimize physical performance; diet analysis; energy systems and metabolism; efficiency of nutritional ergogenics; dietary supplements; sports drinks; the role of protein, carbohydrates, fats, vitamins, minerals and water in physical performance;
body composition; weight gain; weight loss and weight maintenance; eating disorders, and the specific nutritional needs for different types of athletes and sports events. The course introduces students to the concepts and skills of locating, evaluating, synthesizing, and communicating information in various formats. CSU

**NUTRI-150  Topics in Nutrition**  
.3-4 units  SC  
• Variable hours  
This course will supplement topics in the nutritional sciences, dietetics, food service and food technology. Specific topics will be announced in the schedule of classes. CSU

**NUTRI-160  Nutrition: Science and Applications**  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This course covers the basic principles of the science of nutrition including a survey of the nutrients in food and their actions in health promotion and disease prevention. Diet planning principles and guidelines, nutrient recommendations and assessment throughout the human life cycle are covered. Course content is appropriate for majors in dental hygiene, nursing and allied health. CSU, UC (credit limits may apply to UC - see counselor)

**OCEAN-101  Fundamentals of Oceanography**  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Note: This course does not include a laboratory. Students requiring or wanting a laboratory to accompany this course should enroll in OCEAN-102 (formerly OCEAN-110).  
• Formerly OCEAN-109  
This course is an introduction to the geological, chemical, physical and biological aspects of the world's oceans and the interactions among these different aspects. Lecture topics will include: The history of oceanography; historic and modern oceanographic instruments; plate tectonics and marine geology; the marine-land interface; ecological problems of the local bay, estuary, delta and state wide water resources; oceans roles as a dominant influence on the earth, its climate, and the lives of its inhabitants; food, drug, and mineral energy resources from the sea; global and local ocean resource management, aquacultural techniques and practices, and preservation of marine environments; and the deep sea; properties, animals and adaptations. The subject is multidisciplinary both in regard to the variety of aspects studied and the methods of study utilized. CSU, UC

**OCEAN-102  Fundamentals of Oceanography with Laboratory**  
4 units  SC  
• 72 hours lecture/36 hours laboratory per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Note: Students who have taken Fundamentals of Oceanography OCEAN-101 (formerly OCEAN-109) will not receive credit for Fundamentals of Oceanography OCEAN-102  
• Formerly OCEAN-110  
This course is an introduction to the geographical, chemical, physical and biological aspects of the world's oceans and the interactions among these different aspects. Lecture topics will include: The history of oceanography; historic and modern oceanographic sampling and analysis methods; the scientific method and its utilization in the ocean sciences; plate tectonics and marine geology; the marine-land interface; ecological problems of the local bay, estuary, delta and state wide water resources; oceans' roles as a dominant influence on the earth and its climate; ocean resource management and preservation of the marine environment; the deep sea; properties, animal diversity and evolutionary adaptations; and evolution by means of natural selection. Students will experience the role of oceanographer as they prepare for, participate in, and analyze data collected on a research expedition in local bay waters. CSU, UC
**OCEAN-150** Topics in Oceanography  
.3-4 units SC  
• **Variable hours**  
• **Formerly OCEAN-120**
A supplemental course in oceanography to provide a study of current concepts and problems in oceanography and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

**OCEAN-299** Student Instructional Assistant  
.5-3 units SC  
• **Variable hours**  
• **Note:** Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

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**PERSIAN – PERSN**

Students with prior foreign language instruction should check with a language teacher regarding their proper placement in foreign language courses. The following system is generally used to determine the appropriate term of college work based on high school language: two years equal one college term; three years equal two college terms; four years equal three college terms.

Michael Almaguer, dean  
Applied and Fine Arts Division  
Business and Foreign Language Building, Room 204

**Possible career opportunities**
The study of Persian can open up opportunities in communications, foreign trade and banking, transportation, government, the foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.

**PERSN-120** First Term Persian  
5 units SC  
• 90 hours lecture/18 hours laboratory by arrangement per term
This is a basic beginning course in understanding, speaking, reading, and writing Persian. It offers a balanced approach to the language and culture. Basic communicative functions and structures are introduced, as well as a basic exploration of the culture, history and geography of the Persian-speaking world. CSU, UC

**PERSN-121** Second Term Persian  
5 units SC  
• 90 hours lecture/18 hours laboratory by arrangement per term  
• **Recommended:** PERSN-120 or equivalent
This is a second term sequential course in Persian which includes the understanding, speaking, reading, and writing of the language. A continuation of basic communicative structures and functions are presented, as well as a continued examination of the culture of the Persian-speaking world. The present and past perfect tenses will be introduced and vocabulary and cultural information will be expanded. CSU, UC

**PERSN-150** Topics in Persian  
.3-4 units SC  
• **Variable hours**
A supplemental course in Persian to provide a study of current concepts and problems in Persian and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

**PERSN-299** Student Instructional Assistant  
.5-3 units SC  
• **Variable hours**  
• **Note:** Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU
PHILOSOPHY – PHILO

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Possible career opportunities
For those who wish for a career in philosophy, teaching and research at the university level is an attractive option. There is also an emerging demand for experts in applied ethics, especially in the areas of medical, business, and environmental ethics. Most career options will require an advanced degree.

The program prepares students with effective thinking and communication skills, which are useful in many fields including business, sales, writing, teaching, legal profession, political campaigning, news reporting, and other fields in which critical thinking and eloquent articulation of viewpoints is required.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree - Philosophy
Certificate of achievement - Philosophy

Associate in arts degree - Philosophy
The Philosophy Department views critical thinking and reflection about distinctively human issues to be central to human existence and well-being. Students able to think and articulate viewpoints clearly and in an informed fashion not only enhance their own life, but contribute significantly to interpersonal relationships and social existence, including in the realm of political, economic, cultural, and social institutions.

Although this program is not designed as a transfer program, selected courses in the program do meet general education and lower division requirements for the bachelor of arts degree at many California State University and University of California campuses. Consult with department faculty and the counseling department for more information. DVC philosophy students who intend to transfer must consult with a program adviser or counselor to ensure that the requirements for transfer to the baccalaureate institution of their choice are met.

Students who intend to transfer area advised to select either General Education Option 2 (IGETC) or Option 3 (CSU Breadth). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate in arts degree with a major in philosophy, students must complete five core courses (15 units total) supplemented by a set of restricted electives from which students select one course (3 units). Students must complete each course used to meet a major requirement with a grade of “C” or higher and also maintain an overall GPA of 2.5 or higher in the coursework required for the major. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

Certificate of achievement - Philosophy
To earn a certificate of achievement in philosophy, students must complete four core courses (12 units). The certificate program courses also count towards the “major” that is required for the associate in arts degree in philosophy.

PHILO-120 Introduction to Philosophy ............................. 3
PHILO-122 Introduction to Ethics .................................. 3
PHILO-130* Critical Thinking: Reasoning ....................... 3
PHILO-224 History of Western Philosophy: Pre-Socratic to Medieval Period ........................................ 3
PHILO-225 History of Western Philosophy: Descartes to Present ......................................................... 3

plus at least 3 units from:
PHILO-140 Introduction to Judeo-Christian Tradition ...... 3
PHILO-141 Introduction to the Philosophy of Religion ...... 3
PHILO-220 Comparative Religions .................................. 3

total minimum required units 18

*This course has a prerequisite of ENGL-122.

PHILO-120 Introduction to Philosophy
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

This course carefully and critically examines the most basic of human beliefs. Logic, epistemology, metaphysics, value theory (ethics and aesthetics), and philosophy of religion are explored at an introductory level. The vocabulary of philosophy and techniques of inquiry are included. CSU, UC
PHILO-122 Introduction to Ethics
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a systematic examination of major ethical theories, the nature of moral reasoning, as well as the evaluation of contemporary moral issues such as abortion, euthanasia and capital punishment. CSU, UC

PHILO-130 Critical Thinking: Reasoning in Everyday Life
3 units SC
- 54 hours lecture per term
- Prerequisite: ENGL-122 or equivalent
This course introduces students to the principles of inductive and deductive inference and their practical applications in everyday situations such as problem solving and evaluation of arguments. The course examines the uses of language, formal and informal fallacies, syllogistic argument forms and scientific method. This course also develops the ability to integrate the principles of critical thinking with the techniques of effective written argument. CSU, UC

PHILO-140 Introduction to Judeo-Christian Tradition
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a critical examination of history, theology, literature, and traditions of Judaism and Christianity. CSU, UC

PHILO-141 Introduction to the Philosophy of Religion
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a general introduction to the nature of religion. Students will analyze central themes including revelation, faith, and miracles and issues such as the problem of evil, and the relationship between religion and science. CSU, UC

PHILO-150 Topics in Philosophy
.3-.4 units SC
- Variable hours
A supplemental course in philosophy to provide a study of current concepts and problems in philosophy and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

PHILO-220 Comparative Religion
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
The religious thought, experience, and ethical teachings of living religions of the world are examined, discussed and compared. Religions, which may be discussed, include Hinduism, Buddhism, Jainism, Sikhism, Zoroastrianism, Judaism, Christianity, and Islam. CSU, UC

PHILO-221 Contemporary Religious Movements
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is an examination and study of thriving contemporary religious movements through background study, speakers from various movements, and visitations of services of these religious groups. CSU

PHILO-224 History of Western Philosophy: Pre-Socratic to Medieval Period
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course considers the philosophy of the pre-Socratic, Golden Age of Greek philosophy, and the Hellenistic and Medieval periods. CSU, UC

PHILO-225 History of Western Philosophy: Descartes to Present
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course examines continental rationalism (Descartes, Spinoza, and Leibniz), British empiricism (Locke, Berkeley, and Hume), Kant, 19th century and 20th century philosophy. CSU, UC

PHILO-298 Independent Study
.5-3 units SC
- Variable hours
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to pursue special interests under direction of the faculty. CSU
PHILO-299  Student Instructional Assistant
.5-3 units  SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

PHOTOGRAPHY

See Art - ART

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Career opportunities for may include: advertising photographer, aerial and underwater photographer, art documentation photographer, commercial photographer, various specialties, commercial printing and reproduction, corporate photographer, darkroom lab technician and/or manager, digital photography technician, digital photographic illustrator, documentary and editorial photographer, photography teacher, fashion photographer, film-set photographer, fine art photographer, fine art printing assistant, forensic photographer, free-lance photographer, gallerist or art dealer, graphic artist, laboratory manager, nature photographer, photo editor, photo-historian, manager for fine art or commercial photography studio, photographic assistant, photographic retoucher, photojournalist, professional photography-laboratory custom printer, photographer, photographer, stock photographer, studio and wedding photography, theater production photographer, travel and stock photography, wedding and event photographer.

PHYSICAL EDUCATION – PE

See Kinesiology activity - KNACT

PHYSICAL EDUCATION COMBATIVE – PECMB

See Kinesiology combative - KNCMB

PHYSICAL EDUCATION DANCE – PEDAN

See Kinesiology dance - KNDAN
See also Dance - DANCE

PHYSICAL EDUCATION INTERCOLLEGIATE – PEIC

See Kinesiology intercollegiate athletics - KNICA

PHYSICAL EDUCATION THEORY – PETHE

See Kinesiology theory - KINES

PHYSICAL SCIENCE – PHYSC

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
Physical science focuses on concepts, processes and the interrelationship of physical phenomena as studied in any combination of the physical science disciplines, such as astronomy, earth science and physics. There are several career options in academics - research and teaching, as well as applied science and industry. Many of the career options require advanced and specialized training in one or a combination of the sub-disciplines of physical science.
**PHYSC-112  Fundamentals of Physical Science**
3 units  SC
- 54 hours lecture per term
- Prerequisite: MATH-090 (may be taken concurrently) or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent

An overview of the physical sciences of astronomy, physics, chemistry, and earth science. The principles developed will be used to explain our present day knowledge of the universe and our physical environment. CSU, UC (credit limits may apply to UC - see counselor)

**PHYSC-150  Topics in Physical Science**
.3-4 units  SC
- Variable hours

A supplemental course in physical science to provide a study of current concepts and problems in physical science. Specific topics will be announced in the schedule of classes. CSU

**PHYSC-298  Independent Study**
.5-3 units  SC
- Variable hours
- Note: Submission of acceptable educational contract to department and instruction office; topics must extend beyond courses offered.

An opportunity for advanced students to study special interests under the direction of faculty. CSU

**PHYSICS – PHYS**

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

**Possible career opportunities**
Career opportunities available for physicists include: research in industry, universities, and national laboratories. Many teach in high schools, colleges, and universities. Others can be found in hospitals, the military, oil fields, power plants, in the astronaut corps, in museums, in patent law firms, and in management positions in business and government. A background in physics can help a technical writer or a computer programmer. Most career options require more than two years of college study.

**PHYSC-110  Elementary Physics**
3 units  LR
- 54 hours lecture per term
- Prerequisite: MATH-120 or equivalent
- Recommended: Concurrent enrollment in PHYS-111 and eligibility for ENGL-122 or equivalent

A study of forces, motion, heat, electricity and magnetism, optics and matter, with discussions, experimental illustration, and problem solving. This course emphasizes topics in classical physics. Students specifically interested in focusing on modern physics should take PHYS-113. CSU, UC (credit limits may apply to UC - see counselor)

**PHYSC-111  Physics Laboratory**
2 units  LR
- 18 hours lecture/36 hours laboratory per week
- Prerequisite, PHYS-110 or equivalent (may be taken concurrently)
- Recommended: Eligibility for ENGL-122 or equivalent

The laboratory experience will include measurement and analysis of mechanical, thermal, electrical and optical phenomena. CSU, UC (credit limits may apply to UC - see counselor)

**PHYSC-113  Elementary Modern Physics: From Atoms to the Big Bang**
3 units  SC
- 54 hours lecture per term
- Prerequisite: MATH-120 or equivalent

Introduction to the ideas of modern physics, including the relativity of space and time, Einstein’s theory of gravity, the Big Bang Theory of the origin of the universe, the birth and death of stars, black holes, photons, atoms, quantum uncertainty, the nucleus, radioactivity, and nuclear energy. The emphasis will be on concepts, not mathematical problem solving. CSU, UC

**PHYSC-120  General College Physics I**
4 units  LR
- 90 hours lecture/36 hours laboratory per term
- Prerequisite: MATH-121 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent

First term college physics for life science majors and others. A lecture and laboratory study of mechanics, heat and sound. CSU, UC (credit limits may apply to UC - see counselor)

**PHYSC-121  General College Physics II**
4 units  LR
- 90 hours lecture/36 hours laboratory per term
- Prerequisite: PHYS-120 or equivalent

Second term college physics for life science majors and others. A lecture and laboratory study of electricity, magnetism, light and modern physics. CSU, UC (credit limits may apply to UC - see counselor)
PHYS-124  Calculus Supplement for Physics 120  
.5 unit  LR
- 9 hours lecture per term
- Prerequisite: PHYS-120 (may be taken concurrently) and MATH-182 or MATH-192 (may be taken concurrently) or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: The calculus component may be required for certain transfer majors

This course adds calculus to the mathematical techniques used in PHYS-120—General College Physics I. CSU, UC (credit limits may apply to UC - see counselor)

PHYS-125  Calculus Supplement for Physics 121  
.5 unit  LR
- 9 hours lecture per term
- Prerequisite: PHYS-121; and MATH-183 or MATH-193 (all may be taken concurrently) or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: The calculus component may be required for certain transfer majors

This course adds calculus to the mathematical techniques used in PHYS-121—General College Physics II. CSU, UC (credit limits may apply to UC - see counselor)

PHYS-129  Introductory Physics for Engineers  
4 units  LR
- 90 hours lecture/36 hours laboratory per term
- Co-requisite: MATH-192 or equivalent (may be taken previously)
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: This course or its equivalent is recommended for PHYS-130

Designed for engineering, physics and chemistry majors, this course is a study of vectors, motion, forces, momentum, energy and rotating systems. One or more additional topics such as geometric optics, electricity, the atomic nature of matter or the study of fluids will also be presented. The student will be introduced to basic vocabulary and techniques of studying physics. Portions of this course may be taught online, for example: problem solving or discussion. CSU, UC (credit limits may apply to UC - see counselor)

PHYS-130  Physics for Engineers and Scientists A: Mechanics and Wave Motion  
4 units  LR
- 90 hours lecture/36 hours laboratory per term
- Co-requisite: MATH-193 (may be taken previously) or equivalent
- Recommended: PHYS-129 or equivalent; eligibility for ENGL-122 or equivalent
- Note: For those students who have not recently completed a full year of high school physics, the physics department strongly recommends completion of PHYS-129 before enrolling in PHYS-130

Designed for engineering and physical science majors (such as physics, chemistry, and geology), this course is a lecture and laboratory study of classical mechanics: vectors, particle kinematics, Newton’s laws, equilibrium of rigid bodies, work and energy, gravitation, fluids, momentum, rotational kinematics and dynamics, and oscillations and waves in elastic media. CSU, UC (credit limits may apply to UC - see counselor)

PHYS-150  Topics in Physics  
.3-4 units  SC
- Variable hours

A supplemental course in physics to provide a study of current concepts and problems in physics. Specific topics will be announced in the schedule of classes. CSU

PHYS-230  Physics for Engineers and Scientists B: Heat and Electromagnetism  
4 units  LR
- 90 hours lecture/36 hours laboratory per term
- Prerequisite: PHYS-130 or equivalent; MATH-292 (may be taken concurrently) or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent

Designed for engineering and physical science majors (such as physics, chemistry, and geology), this course is a continuation of PHYS-130. It is a lecture and laboratory study of thermodynamics, electricity, and magnetism. Topics included are temperature, heat and the first and second laws of thermodynamics, kinetic theory of gases, electric field and electric potential of static charges, magnetic field of moving charges, current, voltage, resistance, capacitance, induced electric fields, Maxwell’s equations and plane electromagnetic waves. CSU, UC (credit limits may apply to UC - see counselor)
PHYS-231  Physics for Engineers and Scientists C: Optics and Modern Physics  
4 units LR  
• 90 hours lecture/36 hours laboratory per term  
• Prerequisite: PHYS-230 and MATH-294 or equivalents (may be taken concurrently)  
• Recommended: Eligibility for ENGL-122 or equivalent

Designed for engineering, physics and chemistry majors, this course is a continuation of PHYS-130 and 230. It is a lecture and laboratory study of optics and modern physics. Topics included are light as an electromagnetic wave, geometric and wave optics, special relativity, quantum physics, atomic and molecular physics, condensed matter physics, and nuclear physics. CSU, UC (credit limits may apply to UC - see counselor)

PHYS-299  Student Instructional Assistant  
.5-3 units SC  
• Variable hours  
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

PLUMBING – PLUMB

Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities

In collaboration with Plumbers and Steamfitters Union Local 159 email: info@plumbers159.org and Plumbers-Steamfitters-Refrigeration Union Local 342 www.ua342.org, DVC offers two five-year apprenticeship programs: steamfitting and plumbing. Apprenticeship is training that is designed to prepare an individual for a career in the skilled crafts and trades. Apprentices develop technical skills, experience the sharing of assignments and see how technical tasks relate specifically with theoretical knowledge and interpretation. Apprentices earn a wage while learning. Enrollment in this program is restricted. You must be registered as an apprentice with the State of California to participate in the program and accepted into the apprenticeship program by our Union partners.

Plumbers-Steamfitters-Refrigeration Union Local 342, Joint Apprenticeship and Journeymen Training Office  
935 Detroit Avenue  
Concord, CA 94518-2501  
925-686-0730

Plumbers and Steamfitters Local 159  
1308 Roman Way  
Martinez, CA 94553  
800-443-0220 or  
925-229-0883  
email: info@plumbers159.org

Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in science degree

Plumbing

Certificate of achievement

Plumbing

Certificate of accomplishment

Plumbing

Associate in science degree - Plumbing

Upon successful completion of the program, the student will have the necessary knowledge and skill for a career in residential, commercial, and industrial plumbing. Reading of blueprints, layout, estimating, installation of piping systems and fixtures, repair of supply and waste water systems are just some of the skills that will be mastered during this program.

A student is eligible for graduation with an associate in science degree after the satisfactory completion of a minimum of 60 units.

To earn an associate in science degree with a major in plumbing, students must complete each course used to meet a major requirements with a “C” grade or higher and complete general education requirements as listed in the catalog. Degree requirements can be completed by attending classes in the day, the evening, or both. Certain courses may satisfy both major and general education requirements; however, the units are only counted once. General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer. DVC Plumbing students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU G.E.).
<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
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<tbody>
<tr>
<td>PLUMB-110 OSHA-CPR</td>
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<tr>
<td>PLUMB-111 Trade Mathematics</td>
<td>1.5-2.5</td>
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<tr>
<td>PLUMB-112 Water Supply Systems</td>
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<td>1.5-2.5</td>
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<td>PLUMB-114 Plumbing System Service and Repair</td>
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<td>PLUMB-115 Construction Management in Plumbing</td>
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<td>PLUMB-117 Related Science in the Piping Trades</td>
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<td>PLUMB-121 Plumbing Tool Workshop II</td>
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**Certificate of achievement - Plumbing**

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<td>complete at least 28 units from:</td>
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**Certificate of accomplishment - Plumbing**

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**Certificate of achievement - Plumbing**

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<tr>
<td>PLUMB-112 Water Supply Systems</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-113 Sewage Disposal</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-114 Plumbing System Service and Repair</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-115 Construction Management in Plumbing</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-116 Medical Gas Systems</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-117 Related Science in the Piping Trades</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-118 Beginning Drawing and Plan Reading for the Piping Trades</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-119 Advanced Drawing in the Piping Trades</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-120 Plumbing Tool Workshop I</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-121 Plumbing Tool Workshop II</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-122 Plumbing Code I</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-123 Plumbing Code II</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-124 Welding for Plumbers</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-125 Electricity for Plumbing</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-126 Gas Installation in Plumbing</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-127 Backflow Prevention</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-128 Plumbing Fixtures</td>
<td>LR</td>
</tr>
<tr>
<td>PLUMB-129 Certification Preparation</td>
<td>LR</td>
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<tr>
<td>total minimum required units</td>
<td>28</td>
</tr>
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</table>
PLUMB-113 Sewage Disposal
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-152
The principles and methods of sewage disposal for residential and commercial buildings.

PLUMB-114 Plumbing System Service and Repair
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-153
The planning and troubleshooting of plumbing systems and repairs.

PLUMB-115 Construction Management in Plumbing
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-154
An introduction to the administrative procedures, plans and specifications, scheduling, and other forms of communication in the construction field.

PLUMB-116 Medical Gas Systems
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-155
The requirements and standards of medical gas and vacuum system installation.

PLUMB-117 Related Science in the Piping Trades
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section. This class is the same as STMFT-117.
The scientific and mechanical principles that are basic to the work of the piping industry.

PLUMB-118 Beginning Drawing and Plan Reading for the Piping Trades
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section. This class is the same as STMFT-118.
The interpretation of drawings and sketches associated with piping installation.

PLUMB-119 Advanced Drawing in the Piping Trades
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section. This class is the same as STMFT-119.
Interpret, coordinate and make drawings and sketches associated with piping installation.

PLUMB-120 Plumbing Tool Workshop I
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-250
The practical and theoretical aspects of plumbing tool processes. Students will learn the safe and proper use of the commonly used trade tools.

PLUMB-121 Plumbing Tool Workshop II
1.5-2.5 units   LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-251
The practical and theoretical aspects of plumbing tool processes. Students will learn the proper use and safety of advanced trade tools.
PLUMB-122 Plumbing Code I
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-252
An introduction to the plumbing ordinances, articles 100-900, which provide minimum requirements and standards for public safety.

PLUMB-123 Plumbing Code II
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-253
An introduction to the plumbing ordinances, articles 901-1622, which provide minimum requirements and standards for public safety.

PLUMB-124 Welding for Plumbers
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-254
The techniques and methods of the welding process for plumbers.

PLUMB-125 Electricity for Plumbing
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
• Formerly PLUMB-270
The specialized knowledge and techniques required to make electrical systems operate and function effectively.

PLUMB-126 Gas Installation in Plumbing
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
Principles and installation methods of gas piping systems.

PLUMB-127 Backflow Prevention
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
Instruction on the approved methods and appropriate devices by which backflow and cross-connection can be eliminated.

PLUMB-128 Plumbing Fixtures
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
The modern techniques and practices of plumbing fixtures and appliances.

PLUMB-129 Certification Preparation
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.
Preparation and review of information required for obtaining state plumbing certification.

PLUMB-150 Topics in Plumbing
.3-4 units SC
• Variable hours
A supplemental course in plumbing to provide a study of current concepts and problems in plumbing. Specific topics will be announced in the schedule of classes.
PLUMB-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond current courses offerings.

An opportunity for advanced students to study special interests under the direction of the faculty.

PLUMB-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled.

POLITICAL SCIENCE – POLSC

Obed Vazquez, interim dean
Social Sciences Division
Faculty Office Building, Room 136

Possible career opportunities
Political science courses offer insight into events at the local, state, national, and international level. Students develop critical thinking and other useful skills for a broad range of careers including education, public service and law. Most career options require more than two years of college study.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree - Political science
Political science courses offer insight into events at the local, state, national, and international level. Students develop critical thinking and other useful skills for a broad range of careers including education, public service and law. Most career options require more than two years of college study.

Successful completion of the major will prepare students for transfer to a political science major, or other related fields at the university level.

The DVC Political Science major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU G.E.). Option 1 (DVC General Education) is not generally advised.

To earn an associate of arts degree with a major in political science, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework for the major, and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once. Some variations in requirements may exist at certain four-year institutions; therefore, students who intend to transfer are advised to refer to the catalog of the prospective transfer institution and consult a counselor.

major requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLSC-120 Introduction to Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-121 Introduction to United States Government</td>
<td>3</td>
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complete 9 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>POLSC-151 California Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-220 Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-240 Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-250 International Relations</td>
<td>3</td>
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</table>

complete 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTHR-130 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ECON-220 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-221 Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-120 History of the United States before 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-121 History of the United States after 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-125 History of the United States: A Mexican-American Perspective</td>
<td>3</td>
</tr>
<tr>
<td>HIST-127 African American Perspective History of US to 1865</td>
<td>3</td>
</tr>
<tr>
<td>HIST-128 African American Perspective History of US after 1865</td>
<td>3</td>
</tr>
<tr>
<td>HIST-129 History of Asian and Pacific Islanders in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HIST-140 History of Western Civilization to the Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>------------</td>
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<tr>
<td>HIST-141</td>
<td>History of Western Civilization since the Renaissance</td>
</tr>
<tr>
<td>HIST-150</td>
<td>History of East Asia (to 1600)</td>
</tr>
<tr>
<td>HIST-170</td>
<td>History of Women in the United States (Pre-Colonial-1877)</td>
</tr>
<tr>
<td>MATH-142</td>
<td>Elementary Statistics with Probability</td>
</tr>
<tr>
<td>SOCSC-123</td>
<td>American Popular Culture</td>
</tr>
<tr>
<td>SOCIO-121</td>
<td>Introduction to Social Problems</td>
</tr>
<tr>
<td>SOCIO-122</td>
<td>Critical Thinking About Social and Cultural Issues</td>
</tr>
<tr>
<td>*Other courses with the prefix SOCIO, HUMAN, PHILO, GEOG may be submitted for consideration and evaluation in their suitability towards the political science major.</td>
<td></td>
</tr>
</tbody>
</table>

**Total minimum required units**: 18

**POLSC-120 Introduction to Politics**
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
Introduction to concepts of politics and the state and relationship of the state and individual, as applied to the American political system. Comparison of the American and selected other political systems. CSU UC

**POLSC-121 Introduction to United States Government**
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
The course is a survey of the American political framework and process. The course covers the Constitutional structure and functions of the legislative, executive and judicial branches at national, state and local levels, viewed in the context of political culture, political parties, pressure groups and citizenship. Emphasis will be placed on the impact of federal, state and local governments in California. CSU UC

**POLSC-151 California Politics**
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
Investigation and analysis of selected major issues of California politics and government including the roles and responsibilities of governmental agencies; the importance of local political entities; and evaluation of policy choices. CSU UC

**POLSC-155 Topics in Political Science**
.3-4 units SC  
- Variable hours  
A supplemental course in political science to provide a study of current concepts and problems in political science and related substantive areas. Specific topics will be announced in the schedule of classes. CSU

**POLSC-220 Comparative Politics**
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
A comparative analysis of the political systems of selected foreign states. An investigation of the origins and nature of politics, philosophies, and cultures and their expression in political institutions and processes. CSU, UC

**POLSC-240 Political Theory**
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
A survey of selected political theorists and concepts and/or issues from Plato to the present. Includes analysis of theoretical approaches used to explain, instruct, and justify the distribution of political power in societies. CSU, UC

**POLSC-250 International Relations**
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course is an introduction to various aspects of international relations and politics. Topics include sovereignty, the nation-state and international politics, the nature of the global community, international law, world economics, the United Nations and other international organizations and contemporary world problems. CSU, UC

**POLSC-298 Independent Study**
.5-3 units SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond current courses offerings.  
An opportunity for advanced students to study special interests under the direction of the faculty. CSU
Psychology includes a variety of sub-fields, including clinical, counseling, developmental, forensic, social, cognitive, biological, and personality psychology. Most career options require more than two years of college study. The associate in arts in psychology for transfer degree provides preparation for transfer to psychology programs at baccalaureate-granting institutions. Transferring, completion of a bachelor's degree, and graduate studies in psychology can lead to careers as psychotherapists, college professors, scientific researchers, administrators, and business consultants.

Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate-granting institutions of their choice are met. To achieve the associate in arts in psychology for transfer degree from DVC students must (1) complete the psychology major requirements, (2) fulfill the requirements of either the CSU general education or the IGETC general education pattern, (3) complete 60 college transfer level units, and (4) obtain a minimum grade point average of 2.0.

Students must complete each course used to meet a major requirement with a "C" grade or higher. The major requires 48 units. Of these units, a minimum of 12 units must be earned in psychology courses, at least 6 of which must be taken at Diablo Valley College. Most courses in the psychology major satisfy both major and CSU GE/IGETC general education requirements; however, the units are only counted once toward the 60 unit requirement for an associate degree. Some variations in requirements may exist at certain four-year institutions; therefore, students who intend to transfer are advised to refer to the catalog of the prospective transfer institution and consult a counselor.

major requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>units</th>
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</thead>
<tbody>
<tr>
<td>PSYCH-101</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-215</td>
<td>Introduction to Research Methods in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>BUS-240</td>
<td>Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH-142</td>
<td>Elementary Statistics with Probability</td>
<td>4</td>
</tr>
<tr>
<td>complete at least 3 units from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOSC-102</td>
<td>Fundamentals of Biological Science with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-117</td>
<td>Human Biology with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PSYCH-130</td>
<td>Emotions, Learning and the Brain</td>
<td>3</td>
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<tr>
<td>complete at least 3 units from:</td>
<td></td>
<td></td>
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<tr>
<td>PSYCH-145</td>
<td>Critical Thinking in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-200</td>
<td>Life Span Development</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-225</td>
<td>Social Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Possible career opportunities

Psychology students will find classes related to helping them understand, predict, and deal with their own behavior and that of others. Careers include psychotherapist, school psychologist, college professor, researcher, counselor and administrator. Most career options require more than two years of college study.

Program level student learning outcomes

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree for transfer

Psychology

Associate in arts degree in psychology for transfer

The associate in arts in psychology for transfer major at Diablo Valley College (DVC) provides students with an introduction to psychology as the scientific study of thought, feeling, and behavior, and a helping profession dedicated to solving human problems. The associate degree curriculum meets lower division requirements for transfer to the CSU system baccalaureate degree in psychology and fulfills lower division general education requirements for transfer to the CSU system.

POLSC-299 Student Instructional Assistant

- 5-3 units SC
  - Variable hours
  - Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU
complete at least 3 units from:

- PSYCH-122 Psychology in Modern Life ........................................ 3
- PSYCH-140 Psychology of African Americans in a Multicultural Society ........................................ 3
- PSYCH-141 Psychology of Latinos/Chicanos in the U.S. ........................................ 3
- PSYCH-160 Psychology of Women ........................................ 3
- PSYCH-190 Psychology of Adolescence ........................................ 3
- PSYCH-220 Psychology of Personality: Personal, Social, Cultural Differences ........................................ 3
- PSYCH-230 Abnormal Psychology ........................................ 3
- PSYCH-240 Transpersonal Psychology ........................................ 3

total minimum units 18

**PSYCH-101 Introduction to Psychology**

3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly PSYCH-210

PSYCH-101 is a study of the major theories, methods and concepts of modern psychology. The orientation of the course is the scientific study of behavior and mental processes, and covers such areas as: the history and systems of psychology, the biological foundations of behavior, perception, states of consciousness, learning, memory, motivation, emotion, human development, personality, stress and health, abnormal psychology, therapies, and social psychology. CSU, UC

**PSYCH-122 Psychology in Modern Life**

3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent

This course examines the psychological and physiological, and cultural factors involved in personality development, interpersonal relationships, and the relevance of psychology to social processes. CSU, UC

**PSYCH-130 Emotions, Learning and the Brain**

3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent

This course examines the psychology of emotions, learning, and social behavior. The relationship between brain and environment is used to provide an understanding of motor, visual, and conceptual development; processes of emotion and learning; and learning disabilities of children and adults. Research and theory will be examined for practical application. CSU, UC

**PSYCH-140 Psychology of African Americans in a Multicultural Society**

3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent

This course is a study of the behavioral, physiological, and psychological experiences of African Americans in the multicultural U.S. Topics chosen reflect the reciprocal impacts among majority European American cultures and historical waves of immigration of various different minority groups, using African Americans as a historical starting place, including assimilation, resistance, and acculturation. Particular attention will be paid to cultural, social, and historical contributions of African Americans, and how they have been viewed in relation to Latino/as, Native Americans, and Asian-Pacific Americans over time. CSU, UC

**PSYCH-141 Psychology of Latinos/Chicanos in the U.S.**

3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent

This course is a study of the behavioral, physiological, and psychological experiences of a variety of different groups within the Latino/Chicano cultural collective. Topics chosen reflect the reciprocal impacts among majority European American culture and historical waves of immigration of various different Latino groups, and other minority groups in the U.S., including assimilation, resistance, and acculturation. Particular attention will be paid to cultural, social, and historical contributions of groups within the Latino collective, and how Latino groups have been viewed in relation to African Americans, Native Americans, and Asian-Pacific Americans over time. CSU, UC

**PSYCH-145 Critical Thinking in Psychology**

3 units SC  
- 54 hours lecture per term  
- Prerequisite: ENGL-122 or equivalent

This course helps students develop critical thinking and writing skills necessary to analyze, evaluate, and make decisions concerning complex contemporary issues in psychology. Topics include the principles of inductive and deductive reasoning, the philosophy of science, strengths and weaknesses of the scientific method, distinguishing knowledge from beliefs, and the examination of paradigms in psychology. The course integrates critical thinking and writing skills with effective written expression. CSU, UC

**PSYCH-155 Topics in Psychology**

3-4 units SC  
- Variable hours

A supplemental course in psychology to provide a study of current concepts and problems in psychology and related subdivisions. Specific topics will be announced in the schedule of classes. CSU
PSYCH-160  Psychology of Women
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
Examination of various factors in the development of gender identity, including personality, social processes, biology, and culture. CSU, UC

PSYCH-190  Psychology of Adolescence
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
A survey of adolescent development and the problems of adolescents highlighting topic areas which would include adolescent values and attitudes: adolescent self-concept, self-esteem and identity; adolescent sex-role socialization; parent and family influence on adolescent socialization; peer group influence on adolescent development. CSU, UC

PSYCH-200  Life Span Development
3 units  LR
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course examines the developmental changes and sociocultural events that take place during an individual’s life span from infancy to old age. A major goal of this course is to introduce students to the psychological characteristics, personal/social challenges and developmental opportunities for each of life’s age periods. A second goal of this course is to expose students to classic and contemporary theory and research in the area of life span development. Emphasis will be placed on life cycle theories, the role of heredity and environment, and the role of individual differences. Life stages will be viewed in terms of a variety of theoretical frameworks. CSU, UC

PSYCH-215  Introduction to Research Methods in Psychology
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an introduction to the methods psychologists use to understand human behavior. Includes the philosophy of science and the examination of inductive and deductive reasoning methods and their relationship to theory. Topics include experimental and non-experimental research designs; group and single-subject designs; APA-style report writing; research ethics. Activities include: performing a literature review; designing an original research study; collection and analysis of psychological data. CSU, UC

PSYCH-220  Psychology of Personality: Personal, Social, Cultural Differences
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course probes into the dynamics of personality development, adjustment, and growth. Particular emphasis is placed on contrasting the ideas and methodologies of the different schools of psychology, including Western and non-Western views. CSU, UC

PSYCH-225  Social Psychology
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
Social psychology is the scientific study of the way people think, feel, and behave in social situations. This course is an introduction to the perspectives, research methods, and empirical findings in social psychology. Topics include how people influence each other, the power of social situations, developing critical and integrative ways of thinking about theory and research, and the application of social psychological theories to everyday life experiences. CSU, UC

PSYCH-230  Abnormal Psychology
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is a study of the symptoms, causes, treatments, and prevention of psychological disorders. Multiple theoretical perspectives are used to examine the biological, psychological, and social factors creating abnormality. The course examines the Diagnostic and Statistical Manual of Mental Disorders (DSM) classification system, cultural and gender differences in abnormality, current issues, and case illustrations of behavioral disorders. CSU, UC

PSYCH-240  Transpersonal Psychology
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course examines the psychological study of consciousness, mind-body relationship, and the role of spiritual inquiry in human transformation. Students will learn about ultimate human capacities such as peak and transcendent experiences, inspired creativity, altruistic ideals, and peak performance. Transpersonal psychology suggests such capacities and experiences may be latent and can be developed. In exploring this theme, various approaches from ancient spiritual to modern scientific are critically examined. CSU, UC
PSYCH-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond current courses offerings.

An opportunity for advanced students to study topics of special interest under direction of the faculty. CSU

PSYCH-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

REAL ESTATE – RE

See Business - Real Estate - RE

RESPIRATORY THERAPY – RT

Associate in science degree
Respiratory therapy

Associate in science degree - respiratory therapy

The respiratory therapy (RT) program is offered as a conjoint program with Ohlone College in Fremont. Students complete general education courses at DVC, laboratory and clinical courses at Ohlone College, and have supervised clinical practice at local hospitals. Certain RT classroom courses are offered at the DVC San Ramon Campus; students should refer to the college schedule.

This program prepares students to be respiratory therapists in one of the fastest growing allied health professions in the nation. Therapists are involved in the diagnosis, treatment, management and care of patients with deficiencies and abnormalities associated with the cardio respiratory system, in both hospital and home environments. Completion of this CAAHEP (Commission on Accreditation of Allied Health Education Program) makes graduates eligible for the California state license examination for respiratory care practitioner (RCP) and the registered respiratory therapist (RRT) credentialing examination of the National Board for Respiratory Care (NBRC).

By completing the general education coursework at DVC and the RT coursework at Ohlone, students will receive a certificate of achievement and associate in science degree from Ohlone College. Students must maintain a 2.0 grade point average or higher. For applications and information, contact the Ohlone College RT program director at www.ohlone.edu/instr/rt.

required program prerequisites or equivalents** units
CHEM-108 Introductory Chemistry ........................................ 4
ENGL-122 Freshman English: Composition and Reading .............. 3
MATH-120 Intermediate Algebra ........................................ 5

**total units of program prerequisites 17

required supporting courses units
BIOSC-119 Fundamentals of Microbiology .............................. 5
BIOSC-139 Human Anatomy ............................................. 3
BIOSC-140 Human Physiology ........................................... 5
PHYS-110 Elementary Physics .......................................... 3

plus at least 3 units from:
ECE-124 Child Development and Psychology ...................... 3
PSYCH-122 Psychology in Modern Life ............................... 3
PSYCH-200 Life Span Development ..................................... 3

**total units of supporting courses 21

major requirements
RT-101* Principles of Respiratory Therapy I ..................... 3
RT-101L* Beginning Clinical Practice ................................. 1
RT-102* Beginning Laboratory ......................................... 2
RT-103* Basic Patient Care ............................................ 0.5
RT-104A* Principles of Respiratory Therapy II ................ 3
RT-104B* Principles of Respiratory Therapy III .............. 3
RT-105A* Intermediate Laboratory I ................................ 1
RT 105B* Intermediate Laboratory II ................................. 0.5

plus at least 4 units from:
RT 106* Intermediate Clinical Practice (twice) .................. 2
RT 107* Intermediate Clinical Practice .............................. 4

plus all units from:
AH 151* Applied Clinical Pharmacology ........................ 2
RT 108* Basic Principles of Respiratory Pathophysiology .......... 1
RT 130A* Advanced Respiratory Therapy I .................... 2.5
RT 130B* Advanced Respiratory Therapy II ................ 1.5
RT 130L* Advanced Clinical Practice .............................. 2
RT 131A* Principles of Mechanical Ventilation I .......... 2.5
RT 131B* Principles of Mechanical Ventilation II ........ 2.5
RT 132* Advanced Laboratory .................................. 1
RT 133* Mechanical Ventilation Laboratory ................... 2
RT 134* Neonatal and Pediatric Respiratory Care ............ 1
RT 134L* Clinical Practicum in Neonatal and Pediatric Respiratory Care ........................................ 1.5
RT 135* Computer Simulations for Respiratory Care .. 0.5
RT 136* Critical Care Clinical Practice ......................... 3.5
RT 137* Home Respiratory Care and Pulmonary Rehabilitation .................................. 0.5
RT 138* Special Rotations in Respiratory Care .............. 0.5
RT 139* Pulmonary Function Testing .......................... 1
RT 139L*  Clinical Practice in Pulmonary Function Testing ......................................................... 0.5
RT 145*  Cardio-Pulmonary Resuscitation Basic Life Support .......................................................... 0.5

total minimum required units 44.5

*These are Ohlone College courses.
**Must be completed prior to entering RT-101.

Note: Prerequisites must be completed prior to entering RT 101. Students who document completion of one term survey A and P course prior to fall 2006 will be exempt from completion of DVC BIOSC 139 and BIOSC 140. Students who already possess a DVC associate degree are considered to have met the AS in RT general education requirement.

In addition to the courses above, students must complete general education:

Ohlone
Area III, Fine Arts/Humanities
3 units required
Area V, Physical Education/Wellness
1 unit required
Area VI, Cultural diversity

DVC
Area III, Arts and Humanities, 3 units
Minimum of 1 unit of activity courses including KNACT and KNDAN, or HSCI-124, 126, 140, 164, 170

One course from:

Area VII, Information competency
LS-121 required

Michael Almaguer, dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

Possible career opportunities
The study of Russian can open up opportunities in communications, foreign trade and banking, transportation, government, the Foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Certificate of achievement - Russian
This certificate of achievement was created to give students the opportunity to show potential employers in this country and in other countries that the student has completed a certain number of courses in Russian and prepares students with an intermediate to advanced knowledge of Russian and familiarizes them with the culture of Russia and other Russian-speaking countries.

This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of a minimum of 15 units from the following list of courses which must be completed with a “C” grade or higher.

complete at least 15 units from the following list of courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS-120</td>
<td>5</td>
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<tr>
<td>RUSS-121</td>
<td>5</td>
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<tr>
<td>RUSS-220</td>
<td>5</td>
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<tr>
<td>RUSS-221</td>
<td>5</td>
</tr>
</tbody>
</table>

total minimum required units 15
RUSS-120 First Term Russian
5 units SC
- 90 hours lecture/18 hours laboratory by arrangement per term

This is a basic course in understanding, speaking, reading and writing Russian. It offers a balanced approach to the language and culture. Basic communicative functions and structures are introduced as well as a basic exploration of the culture of the Russian-speaking world. Decisions in the prepositional and accusative cases and the present tense are stressed. CSU, UC

RUSS-121 Second Term Russian
5 units SC
- 90 hours lecture/18 hours laboratory by arrangement per term
- Recommended: RUSS-120 or equivalent

A second term course providing further development of verb patterns as well as other grammar forms. There is expansion of vocabulary and emphasis on writing and sentence structure. Declensions in the singular genitive and dative cases and the past and future tenses are stressed. CSU, UC

RUSS-150 Topics in Russian
.3-4 units SC
- Variable hours

A supplemental course in Russian to provide a study of current concepts and problems in Russian and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

RUSS-220 Third Term Russian
5 units SC
- 90 hours lecture/18 hours laboratory by arrangement per term
- Recommended: RUSS-121 or equivalent

This is a third term course which delves more extensively into the declensions of nouns and the coordination of various case endings including the accusative and genitive plurals and the instrumental cases. Reflexive, imperfective and perfective verbs are covered and reading and writing continues at an increasing level of complexity. There is continued study and interpretation of Russian and Soviet culture through literature and selected articles. CSU, UC

RUSS-221 Fourth Term Russian
5 units SC
- 90 hours lecture/18 hours laboratory by arrangement per term
- Recommended: RUSS-220 or equivalent

This is a fourth semester course which refines understanding, speaking, reading, and writing Russian and a continuation of the study of Russian literature and history. The course expands on the study and interpretation of Russian and Soviet culture, with emphasis on current events. Verbs which express requests or questions, declensions of last names and additional uses of the instrumental case will be covered. CSU, UC

RUSS-299 Student Instructional Assistant
.5-3 units SC
- Variable hours
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

SIGN LANGUAGE – SIGN

Students with prior sign language instruction should check with a sign language teacher regarding proper placement in sign language courses. The following system is generally used to determine the appropriate term of college work based on high school language: one year equals one college term; two years equal two college terms; three years equal three college terms.

Obed Vazquez, interim dean
Social Sciences Division
Faculty Office BUILDING, 136

Possible career opportunities

Sign language will help to prepare the student to communicate and work with deaf and hard of hearing people. There is a need for skilled, qualified sign language interpreters in educational and social service agencies. Teachers, human services providers, or independent living attendants also sometimes use sign language in their work. Some career options require more than two years of college study.
SIGN-280  American Sign Language (ASL) I
3 units   SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
Designed for students interested in learning beginning American Sign Language, a language developed in a visual/gestural mode, and used by the general American deaf population. Also designed to increase the student’s awareness of the deaf culture. The course serves as an introduction to American Sign Language introducing expressive and receptive sign, the manual alphabet, facial expression, and body gestures. Emphasis is on conversational skills in functional situations, knowledge of deaf culture and the deaf community. CSU, UC

SIGN-281  American Sign Language (ASL) II
3 units   SC
- 54 hours lecture per term
- Prerequisite: SIGN-280 or equivalent
Course builds on basic principle and vocabulary introduced in American Sign Language I. Course further develops skills including expressive and receptive sign, the manual alphabet, facial expression, and body gestures. Emphasis on conversational skills in functional situations, continued vocabulary and grammatical expression development, and knowledge of deaf culture and community. CSU, UC

SIGN-282  American Sign Language (ASL) III
3 units   SC
- 54 hours lecture per term
- Prerequisite: SIGN-281 or equivalent
This course expands vocabulary and grammatical skills, both receptive and expressive, using ASL I and II as a base. Students will further develop conversational skills in functional situations, and lead to an appreciation of the deaf culture and history. CSU, UC

SIGN-283  American Sign Language (ASL) IV
3 units   SC
- 54 hours lecture per term
- Prerequisite: SIGN-282 or equivalent
Using ASL I, II, and III as a base, this course expands vocabulary and grammatical skills, both receptive and expressive. It will further develop conversational skills in functional settings, and lead to an appreciation of the deaf culture and history. CSU, UC

SOCSC-110  The American Social Experience
3 units   SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A multicultural and interdisciplinary examination of the various interpretations developed within the social sciences of the roles of individuals and their experiences in American society. The course considers the roles of social institutions, federal, state, and local governments, and surveys the ideas and values that played a part in shaping America’s cultural image. The course surveys the significant contributions of Latinos, African Americans, Native Americans, and women in shaping the evolution of the concept of American individualism. It also examines critical events in the shaping of social, political, and economic identity among national and gender groups in American society and culture. CSU, UC

SOCSC-111  Money, Power and Politics in the United States
3 units   SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A multidisciplinary, integrative study of the concepts of democracy and the historical, political and economic processes through which democracy has arisen in the United States, with emphasis on the U.S. Constitution and state and local government in California. Particular attention is given to the contributions to American democracy by diverse social groups and the international context of American political and economic life. CSU, UC
SOCSC-115 Citizenship and Status: Asian Americans and Pacific Islanders in the U.S.
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

Immigration and citizenship are the basis of American history and political development. Policies and concepts related to these have evolved significantly. This course will examine the Constitution, laws, Supreme Court decisions and movements that have impacted these changes. Within this context the experience of Asian and Pacific Islanders as immigrants, alien residents, refugees, nationals and citizens at the federal, state and local levels will be examined. Special consideration will be directed to race, class, gender and identity issues, and political status of Chinese, Japanese, Indian, Southeast Asians, Hawaiian, and Samoans as separate ethnic groups. CSU, UC

SOCSC-120 Women and Social Change in the United States: 1890-Present
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

A history of American women from the Progressive Era (1890) to present, emphasizing both the commonalities of women's experience based on their gender, and the differences among women based on their ethnic identification, social class and region including the interaction between and contributions of Native American, African American, Asian American and Mexican/Latina women. The course will focus on political, economic and cultural change in the U.S., how women have fostered it and been affected by it, and on the changing roles of women in the family and continuity of the American experience. In addition analysis of the political philosophies of the framers of the U.S. Constitution and the rights and obligations of citizens under the U.S. Constitution with an emphasis on gender issues will be covered. CSU, UC

SOCSC-123 American Popular Culture
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

A multicultural and interdisciplinary examination of popular culture's changing nature in American society. It examines the social institutions and values which shape American popular culture, and national and California state governments through the lens of popular culture. The course considers the significant contributions of Latino, African American, Native American, and Jewish communities in shaping the evolution of American popular culture, and considers the importance of women as both producers and consumers of popular culture. CSU, UC (credit limits may apply to UC - see counselor)

SOCSC-155 Topics in Social Science
.3-.4 units SC
• Variable hours

A supplemental course in the social sciences to provide a study of current concepts and problems in social sciences and related substantive areas. Specific topics will be announced in the schedule of classes. CSU

SOCSC-162 Italian Life and Culture
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

An inquiry into Italian life and culture from its historical origins through contemporary perspectives. Includes an introduction to Italian society and civilization through readings, lectures, seminar presentations/discussions, Italian guest speakers and field trips. Topics include the government, political parties, regional and ethnic identity, the Mafia, common market, media, sports, gastronomy, art, literature, music, language, Church-State relations, sexuality, the family and urban life. Takes a social, historical and cultural approach to the study of contemporary Italian society. CSU

SOCSC-163 French Life and Culture
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

A survey of French life and culture in historical and contemporary perspective. Specifically, the course will cover the history, politics, economics, culture, and society of modern-day France. This course is taught on-site within the study abroad program. CSU

SOCSC-220 Women in United States Society
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

A multicultural and interdisciplinary examination of women’s changing roles in U.S. society. Examines the social institutions and values which shape those roles, including federal, state, and local governments, as well as the U.S. and California Constitutions. The course considers the significant events and developments shaping the social, political, and economic status of women. It will also consider the importance of race/ethnicity, class, region, and sexual orientation in differentiating the experiences and opportunities for women. CSU, UC

SOCSC-298 Independent Study
.5-.3 units SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend beyond courses offered.

An opportunity for advanced students to study special interests under the direction of the faculty. CSU
SOCSC-299 Student Instructional Assistant

.5-3 units SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

SOCILOGY – SOCIO

Obed Vazquez, interim dean 
Social Sciences Division 
Faculty Office Building, Room 136

Possible career opportunities
Sociology provides students with career opportunities including criminologist, employment counselor, interviewer, researcher, social worker, and urban planner. Most career options require more than two years of college study.

Program Level Student Learning Outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of the current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree for transfer
Sociology

Associate in arts in sociology for transfer
The sociology major is a valuable liberal arts major for students planning careers in social research, criminology, demography, or social psychology, but also for those pursuing a course of study in public administration, gerontology, education, social work and market research. Sociology provides a useful background for those planning to enter law, business, marketing, medicine, community planning and services, architecture, and politics. In many professional programs in human services, courses in sociology are part of the required training. Sociologists with graduate degrees may teach at the high school, college or graduate levels. They may also become research sociologists in both the public and private sectors and work in areas of public policy, the law and international studies. Applied sociologists may work with social service agencies and community programs on behalf of others, including underrepresented or neglected populations.

Sociology at Diablo Valley College offers a broad range of courses including the urban environment, marriage and families, minority and race relations, social problems, social research and gender studies. This program fulfills typical lower-division requirements at four-year institutions. Some variation in requirements may exist at a particular four-year college or university. Therefore, it is essential that the student intending on majoring in sociology refer to the catalog of the prospective transfer institution, consult with a program advisor and consult a counselor.

To receive the Diablo Valley College associate in arts degree in sociology for transfer, students must complete a minimum of 18 units of the required courses as outlined for the sociology major, fulfill the minimum units of the requirements of the CSU general education pattern or the IGETC general education pattern, complete 60 college transfer level units, and obtain a minimum grade point average of 2.0. Students must complete each course used to meet the sociology major requirement with a “C” grade or higher.

Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Courses in sociology may satisfy both major and general education requirements; however, the units are only counted once.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
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<tbody>
<tr>
<td>SOCIO-120 Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 6 units from:</td>
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<tr>
<td>BUS-240 Business Statistics with Probability</td>
<td>3</td>
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<tr>
<td>or MATH-142 Elementary Statistics with Probability</td>
<td>4</td>
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<tr>
<td>and</td>
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<tr>
<td>SOCIO-121 Introduction to Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-123 Introduction to Social Research</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 6 units from:</td>
<td></td>
</tr>
<tr>
<td>any course not used above, or:</td>
<td></td>
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<tr>
<td>PSYCH-225 Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-124 Gender, Culture and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-125 Introduction to Marriage and Family</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-135 Introduction to Race and Ethnicity</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
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<tr>
<td>any course not used above, or:</td>
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<tr>
<td>SOCIO-131 The Urban Community</td>
<td>3</td>
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<tr>
<td>SOCIO-122 Critical Thinking about Social and Cultural Issues</td>
<td>3</td>
</tr>
<tr>
<td>SOCSC-120 Women and Social Change in the United States: 1890-Present</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 18
SOCIO-120 Introduction to Sociology
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
An introduction to the theory and scientific methodology of sociology; a survey of the interactions, interrelationships, and processes of society as an organized structure. The course introduces the discipline’s substantive areas including methodology, socialization, culture, social stratification, race, and ethnic minorities, and begins institutional analysis with the family, religion, and education. C-ID SOCI 110, CSU, UC

SOCIO-121 Introduction to Social Problems
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A survey of perspectives on major social problems, primarily in the urban, industrial settings. Includes sources, consequences of and means of coping with a variety of social problems. The scientific methodology required for accurate analysis is emphasized. Topics will be taken from a range of possible items such as problems of aging, health care needs, mental illness, environmental issues, labor force conditions, gender and sexuality, poverty, crime, juvenile delinquency, suicide, addiction, abuse, migration and relations with minority groups, or membership in deviant subcultures. C-ID SOCI 115, CSU, UC

SOCIO-122 Critical Thinking About Social and Cultural Issues
3 units SC
- 54 hours lecture per term
- Prerequisite: ENGL-122 or equivalent
Critical reasoning in sociology is a process of questioning, analyzing and evaluating oral and written ideas, concepts, and interpretations of the political, economic and social issues and patterns found in human societies. This process will include an introduction to the principles of logic, the structure of language, the scientific method, and prevailing theoretical models in sociology. Specific writing skills will be developed through a series of increasingly complex analytical essays and through instruction in metaphor, analogy, contrasting, and analyzing the nature of evidence, as well as essay structure and expression. The goal is for students to learn how to identify sociological viewpoints, to gather and analyze sociological information, to recognize sociological relationships and patterns, and to see the relevancy of sociological insights and theories as a background for understanding current events and issues. CSU, UC

SOCIO-123 Introduction to Social Research
3 units SC
- 54 hours lecture per term
- Prerequisite: SOCIO-120 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
A study of the various social research methods and a review of problems in assessing data relating to social life. Topics to be covered include: posing a sociological problem, data-gathering techniques, sampling, measurement, and establishing relationships among data. This class allows students to become involved in the process of conducting survey research and to participate in the use of other social research techniques. C-ID SOCI 120, CSU, UC

SOCIO-124 Gender, Culture and Society
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A multidimensional examination of the socialization of sex roles in United States society and other cultures, including the mechanisms by which gender roles develop and the social consequences for society. The course examines the social and cultural processes and institutional arrangements that give meaning to being a woman and a man in gendered society. C-ID SOCI 140, CSU, UC

SOCIO-125 Introduction to Marriage and Family
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
An examination of basic issues concerning marriage, family and kinship in African American, Euro American, Hispanic, Asian and Native American families. Emphasis on cross-cultural and cross-societal comparisons, kinship groups, the nature of human marriage, relationship of the family to other social institutions, child rearing, plural marriages, family politics, and speculations concerning the future of the family. C-ID SOCI 130, CSU, UC

SOCIO-131 The Urban Community
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
A multicultural look at social change in cities and in the suburbs which examines the experience of African Americans, Latinos, Asian Pacific Americans, Native Americans and Euro Americans, currently and in historical perspective. The course addresses challenges that face people in multicultural communities, neighborhoods and suburbs, and examines programs and strategies that are designed to meet these challenges in US cities and suburbs. CSU, UC
**SOCIO-135  Introduction to Race and Ethnicity**

3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent

The sociological analysis of ethnic cultures in the United States. Topics include political, economic, religious, judicial, and familial organization of ethnic communities, the effects on the dominant society on these institutions and recent socio-political movements. C-ID SOCI 150, CSU, UC

**SOCIO-155  Topics in Sociology**

.3-4 units  SC  
- Variable hours

A supplemental course in sociology to provide a study of current concepts and problems in sociology and related substantive areas. Specific topics will be announced in the schedule of classes. CSU

**SOCIO-298  Independent Study**

.5-3 units  SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.

An opportunity for advanced students to study special interests under the direction of the faculty. CSU

**SOCIO-299  Student Instructional Assistant**

.5-3 units  SC  
- Variable hours  
- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

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**SPANISH – SPAN**

Students with prior foreign language instruction should check with a language teacher regarding their proper placement in foreign language courses. The following system is generally used to determine the appropriate term of college work based on high school language: two years equal one college term; three years equal two college terms; four years equal three college terms.

Michael Almaguer, dean  
Applied and Fine Arts Division  
Business and Foreign Language Building, Room 204

**Possible career opportunities**

The study of Spanish can open up opportunities in communications, foreign trade and banking, transportation, government, the Foreign Service, tourism, library services, teaching, professional translating, journalism, and all levels of education, including university teaching. Most foreign language careers require more than two years of study.

**Program level student learning outcomes**

Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

**Associate in arts degree**

Spanish

**Certificate of achievement**

Spanish

**Associate in arts degree - Spanish**

The associate in arts degree in Spanish at DVC will provide students with skills in understanding, speaking, reading and writing Spanish. It also gives students a greater understanding of Spanish culture and civilization and will prepare them for a broad range of international and domestic career opportunities and professions. The degree will also provide students the opportunity to transfer to UC, CSU and other four year colleges and universities to earn a bachelor’s degree.
The DVC Spanish major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate-granting institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU Breadth). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a credit/no credit option for major courses and each of the major requirements must be completed with a “C” grade or higher. Certain courses may satisfy both major and general education requirements; however, the units are counted only once.

To earn an associate in arts degree in Spanish, students must complete 20 units from the list of major requirements, which will provide students with the essential grammar of the language, culture and basic literature of the Spanish speaking world. Students with no previous knowledge of Spanish when entering DVC will take the first four courses in the list for a total of 20 units. If students enter the program with previous knowledge of Spanish, they may start at the second term level and take fifth and sixth terms to achieve a total of 21 units.

complete at least 20 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>SPAN-120</td>
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<td>3</td>
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<td>SPAN-231</td>
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</tbody>
</table>

**Certificate of achievement - Spanish**

This certificate of achievement was created to give students the opportunity to show potential employers in this country and in other countries that the student has completed a certain number of courses in Spanish and prepares students with an intermediate to advanced knowledge of Spanish and familiarizes them with the culture of Spain and Latin America.

This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of at least 13 units from one of the following lists of courses which must be completed with a “C” grade or higher.

**List A**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>SPAN-110</td>
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<tr>
<td>SPAN-111</td>
<td>3</td>
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<td>SPAN-121</td>
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**List B**

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<thead>
<tr>
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<tr>
<td>SPAN-121</td>
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<td>SPAN-155</td>
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<tr>
<td>SPAN-156</td>
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<td>SPAN-157</td>
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<td>SPAN-220</td>
<td>5</td>
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<tr>
<td>SPAN-221</td>
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</tbody>
</table>

**SPAN-110  Spanish for Business I**

3 units  SC

- 54 hours lecture per term

Introductory course designed to provide basic effective business communication skills in the Spanish language. The focus will be on career-specific vocabulary, providing functional oral and written language samples, as well as communicative practice through a defined grammatical syllabus. The topic of cultural practices in various Spanish-speaking countries as related to business will be included. CSU

**SPAN-111  Spanish for Business II**

3 units  SC

- 54 hours lecture per term

Recommended: SPAN-110 or equivalent

This second term course continues to provide effective business communication skills in the Spanish language. The focus will be on specialized vocabulary that business professionals need to communicate with Hispanic members of the community in the course of their daily work. Personalized questions, grammar exercises, role-play, reality based activities, as well as translation and interpretation tasks will be covered in this course. CSU

**SPAN-120  First Term Spanish**

5 units  SC

- 90 hours lecture/18 hours laboratory per term

This is a basic course in understanding, speaking, reading, and writing Spanish. It offers a balanced approach to language and culture. Basic communicative functions and structures are introduced, as well as basic exploration of the culture and countries of the Spanish-speaking world. CSU, UC

**SPAN-121  Second Term Spanish**

5 units  SC

- 90 hours lecture/18 hours laboratory per term

Recommended: SPAN-120 or equivalent

This is a sequential course in Spanish, including the understanding, speaking, reading and writing of the language. A continuation of basic communicative structures and functions are introduced, as well as a continued examination of the culture of the Spanish-speaking world. Students will learn the preterit and imperfect tenses, compound tenses in the indicative mood, future and conditional tenses, as well as expanding their vocabulary. CSU, UC
SPAN-150 Topics in Spanish
• 3-4 units SC
• Variable hours
A supplemental course in Spanish to provide a study of current concepts and problems in Spanish and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

SPAN-155 First Term Beginning Conversational Spanish
3 units SC
• 54 hours lecture/18 hours laboratory per term
• Note: This course does not satisfy the academic requirements of the SPAN-120-121 series.
This is the first term of the beginning Spanish conversation series. It is a participatory class based on practical material with oral-aural practice. The present tense is emphasized, and covers basic vocabulary and cultural material. CSU

SPAN-156 Second Term Beginning Conversational Spanish
3 units SC
• 54 hours lecture/18 hours laboratory per term
• Recommended: SPAN-155 or equivalent
• Note: This course does not satisfy the academic requirements of the SPAN-120-121 series.
This is the second term of the beginning Spanish conversation series. It is a participatory class based on practical material with oral-aural practice. The preterit and imperfect tenses are introduced and contrasted. New vocabulary and cultural material is covered. CSU

SPAN-157 Third Term Beginning Conversational Spanish
3 units SC
• 54 hours lecture/18 hours laboratory per term
• Recommended: SPAN-155 or equivalent
• Note: This course does not satisfy the academic requirements of the SPAN-120-121 series.
This is the third term of the beginning Spanish conversation series. It is a participatory class based on practical material with oral-aural practice. The future and conditional tenses are emphasized and the subjunctive mood is introduced. New vocabulary and cultural material are covered. CSU

SPAN-220 Third Term Spanish
5 units SC
• 90 hours lecture/18 hours laboratory per term
• Recommended: SPAN-121 or equivalent
This is a third term intermediate Spanish course which develops fluency in understanding, speaking, reading and writing Spanish. The preterit and imperfect tenses and compound tenses are reviewed and refined, the uses of the present subjunctive are expanded and new vocabulary and idiomatic expressions are introduced. Selected readings about Latin American and Spanish culture and literature will be explored. This course is taught entirely in Spanish. CSU, UC

SPAN-221 Fourth Term Spanish
5 units SC
• 90 hours lecture/18 hours laboratory per term
• Recommended: SPAN-220 or equivalent
This is a fourth term intermediate Spanish course which develops functional fluency in understanding, speaking, reading and writing Spanish. The use of the imperfect subjunctive is reviewed and expanded; the pluperfect subjunctive and the sequence of tenses are introduced as well as new vocabulary and idiomatic expressions. Selected readings about Latin American and Spanish culture and literature will be explored. This course is conducted entirely in Spanish. CSU, UC

SPAN-230 Fifth Term Spanish
3 units SC
• 54 hours lecture per term
• Recommended: SPAN-221 or equivalent
This is an advanced Spanish language course emphasizing reading, writing, listening, and speaking skills. The rich Hispanic heritage is explored through a wide range of materials including short stories, articles, poems, and documentaries. CSU, UC

SPAN-231 Sixth Term Spanish
3 units SC
• 54 hours lecture per term
• Recommended: SPAN-230 or equivalent
This is an advanced Spanish language course emphasizing more complex reading, writing, listening, and speaking skills. The rich Hispanic heritage is explored through a wide range of materials including short stories, articles, poems, films, and documentaries. CSU, UC

SPAN-298 Independent Study
.5-3 units SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office; topics must extend study beyond courses offered.
An opportunity for advanced students to study special interests under the direction of faculty. CSU

SPAN-299 Student Instructional Assistant
.5-3 units SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU
SPECIAL EDUCATION – SPEDU

Beth Hauscarriague, dean
Counseling Division
Student Services Center, Room 203

Possible career opportunities
Students who earn a special education paraeducator/instructional assistant certificate of achievement or degree are prepared for entry-level employment assisting students and individuals with disabilities in education and rehabilitation settings.

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Special education paraeducator/instructional assistant

Certificate of achievement
Special education paraeducator/instructional assistant

Associate in arts degree - Special education paraeducator/instructional assistant
The associate in arts degree in special education paraeducator/instructional assistant is designed as a two-year curricular pathway that offers students a broad general education while integrating an in-depth study of the skills and knowledge required to work with people with various disabilities in a variety of educational and related rehabilitation settings. The courses are intended to introduce students to career opportunities in special education or other disability related fields, and can provide preparation for transfer to four-year institutions to continue a course of study in general education and special education. Classes are designed to serve working individuals wishing to improve their applied skills and professional growth.

To earn a degree, students must complete each course used to meet a major requirement with a “C” grade or higher. Required courses are available in the evening and during the day. Certain courses may satisfy both major and general education requirements; however, the units are only counted once. Students who intend to transfer to a four-year program in education/teacher preparation should consult with a counselor regarding specific requirements.

Certificate of achievement - Special education paraeducator/instructional assistant
This entry-level program prepares students with practical skills and knowledge to work with people with disabilities in a variety of educational and rehabilitation settings. Additionally, the courses are intended to introduce students to career opportunities in special education or other disability related fields, and can provide preparation for transfer to four-year institutions to continue a course of study in general education and special education. Classes are designed to serve working individuals wishing to improve their applied skills and professional growth.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Required courses are available in the evening and during the day.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
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<tbody>
<tr>
<td>ECE-124 Child Development and Psychology</td>
<td>3</td>
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<tr>
<td>PSYCH-122 Psychology in Modern Life</td>
<td>3</td>
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<tr>
<td>SPEDU-101 Introduction to Disabilities</td>
<td>3</td>
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<tr>
<td>SPEDU-102 Historical Perspectives of Disabilities and the</td>
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<td>Law</td>
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<tr>
<td>SPEDU-103 Classroom Strategies for the Special Education Paraeducator</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>plus 2-4 units from:</th>
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<tbody>
<tr>
<td>COOP-170 Occupational Work Experience Education</td>
<td>1-4</td>
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<tr>
<td>COOP-180 Internship in Occupational Work Experience Education</td>
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<table>
<thead>
<tr>
<th>plus at least 6 units from:</th>
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<tbody>
<tr>
<td>ECE-125 Principles and Practices of Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-126 Health, Safety, and Nutrition for the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ECE-128 Advanced Curriculum Development in ECE</td>
<td>3</td>
</tr>
<tr>
<td>ECE-269 Introduction to Special Needs in Young Children</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-120 Teaching as a Profession</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-122 Introduction to Reading Development and Interventions for K-3</td>
<td>3</td>
</tr>
<tr>
<td>MATH-124 Mathematics for Liberal Arts</td>
<td>3</td>
</tr>
<tr>
<td>SIGN-280 American Sign Language (ASL) I</td>
<td>3</td>
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<tr>
<td>SIGN-281 American Sign Language (ASL) II</td>
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<tr>
<td>SIGN-282 American Sign Language (ASL) III</td>
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| total minimum required units        | 23    |
plus 2-4 units from:
COOP-170 Occupational Work Experience Education.... 1-4
COOP-180 Internship in Occupational Work Experience Education.......................... 1-4

plus at least 6 units from:
ECE-125 Principles and Practices of Early Childhood Education .................................................. 3
ECE-126 Health, Safety, and Nutrition for the Young Child .......................................................... 3
ECE-128 Advanced Curriculum Development in Early Education .............................................. 3
ECE-269 Introduction to Special Needs in Young Children ......................................................... 3
EDUC-120 Teaching as a Profession ......................................................................................... 3
EDUC-122 Introduction to Reading Development and Interventions for K-3 .................... 3
MATH-124 Mathematics for Liberal Arts .................................................................................. 3
SIGN-280 American Sign Language (ASL) I .............................................................................. 3
SIGN-281 American Sign Language (ASL) II ........................................................................... 3
SIGN-282 American Sign Language (ASL) III ........................................................................... 3

total minimum required units 23

SPEDU-101 Introduction to Disabilities
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course examines historical and cultural developments of disability issues, and compares international perspectives to understand the changing roles of people with disabilities. The legal and functional definitions of physical, communicative, sensory, psychological, neurological, and developmental disabilities will be emphasized. Acquired versus congenital disabilities will be differentiated, and all forms of chronic/progressive illness will be explored. CSU

SPEDU-102 Historical Perspectives of Disabilities and the Law
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course will examine the legal rights of the disabled, beginning with historical roots of the disability movement in the United States. Essential understanding of the earliest to current legislation governing access to education in federal, state, and local legal mandates will be emphasized. CSU

SPEDU-103 Classroom Strategies for the Special Education Paraeducator
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course explores the basic principles of pragmatic, prosocial skills strategies used by the special education para-professional within the educational workplace. Students will learn effective communication techniques to facilitate and manage appropriate student behavior and learning. CSU

SPEECH – SPCH
See Communication studies - COMM

SPORTS MEDICINE/ATHLETIC TRAINING
See Kinesiology theory - KINES

STEAMFITTING – STMFT
Tish Young, dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
In collaboration with Plumbers and Steamfitters Union Local 159 email: info@plumbers159.org and Plumbers-Steamsfitters-Refrigeration Union Local 342 www.ua342.org, DVC offers two five-year apprenticeship programs: steamfitting and plumbing. Apprenticeship is training that is designed to prepare an individual for a career in the skilled crafts and trades. Apprentices develop technical skills, experience the sharing of assignments and see how technical tasks relate specifically with theoretical knowledge and interpretation. Apprentices earn a wage while learning. Enrollment in this program is restricted. You must be registered as an apprentice with the State of California to participate in the program and accepted into the apprenticeship program by our Union partners.

Plumbers-Steamsfitters-Refrigeration Union Local 342, Joint Apprenticeship and Journeymen Training Office
935 Detroit Avenue
Concord, CA 94518-2501
925-686-0730

Plumbers and Steamfitters Local 159
1308 Roman Way
Martinez, CA 94553
800-443-0220 or
925-229-0883
email: info@plumbers159.org
Associate in science degree
Steamfitting

Certificate of achievement
Steamfitting

Associate in science degree - Steamfitting
This program is offered in collaboration with Plumbers and Steamfitters Union Local 159 and Plumbers-Stearmfitting-Refrigeration (HVACR) Union Local 342. Apprenticeship is training that is designed to prepare an individual for a career in the skilled crafts and trades. Apprentices develop technical skills, experience the sharing of assignments and see how technical tasks relate specifically with theoretical knowledge and interpretation. Apprentices earn a wage while learning. Enrollment in this program is restricted. You must be registered as an apprentice with the State of California to participate in the program and accepted into the apprenticeship program by our union partners.

This program prepares students to become steamfitters and includes an introduction to the installation, maintenance, and repair of different types of pipe systems; tool use; material applications and storage; and safety. Upon completion of the program, students will be able to install pipe systems that move liquids or gases under high pressure and use many different materials and construction techniques, depending on the type of project. They will be able to follow building plans or blueprints and instructions from supervisors to lay out the job and work efficiently with the materials and tools of the trade.

To earn an associate in science degree with a major in steamfitting, students must complete 20 out of 38 core courses to meet their individual educational and career goals. In addition they must complete General Education Option 1 (DVC General Education). Students must complete each course used to meet a major requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the major. The associate in science degree with a major in steamfitting is not a transfer program.

DVC steamfitting students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate institutions of their choice are met.

complete at least 30 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>STMFT-110</td>
<td>OSHA-CPR</td>
<td>1.5-2.5</td>
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<td>STMFT-111</td>
<td>Trade Mathematics</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-112</td>
<td>Use and Care of Tools</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-113</td>
<td>Welding Safety/Plate Welding</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-114</td>
<td>Oxygen/Acetylene Cutting</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-115</td>
<td>Pipe Shop I</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-116</td>
<td>Pipe Shop II</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-117</td>
<td>Related Science in the Piping Trades</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-118</td>
<td>Beginning Drawing and Plan Reading for the Piping Trades</td>
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<tr>
<td>STMFT-119</td>
<td>Advanced Drawing in the Piping Trade</td>
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<tr>
<td>STMFT-120</td>
<td>Instrumentation 1</td>
<td>1.5-2.5</td>
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<tr>
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<td>Instrumentation 2</td>
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<td>STMFT-122</td>
<td>Steam Systems</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-123</td>
<td>Electricity for Steamfitting</td>
<td>1.5-2.5</td>
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<td>STMFT-124</td>
<td>Industrial Rigging</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-125</td>
<td>Beginning AutoCAD</td>
<td>1.5-2.5</td>
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<td>STMFT-126</td>
<td>Advanced AutoCAD</td>
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<tr>
<td>STMFT-127</td>
<td>Pumps</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-128</td>
<td>Tube Bending</td>
<td>1.5-2.5</td>
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<td>STMFT-131</td>
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<td>Welding 6</td>
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<td>Welding 10</td>
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<tr>
<td>STMFT-138</td>
<td>Orbital Welding</td>
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<tr>
<td>STMFT-140</td>
<td>Construction Management in Steamfitting</td>
<td>1.5-2.5</td>
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</table>

total minimum required units 30-50

Certificate of achievement - Steamfitting
This program is offered in collaboration with Plumbers and Steamfitters Union Local 159 and Plumbers-Stearmfitting-Refrigeration (HVACR) Union Local 342. Apprenticeship is training that is designed to prepare an individual for a career in the skilled crafts and trades. Apprentices develop technical skills, experience the sharing of assignments and see how technical tasks relate specifically with theoretical knowledge and interpretation. Apprentices earn a wage while learning. Enrollment in this program is restricted. You must be registered as an apprentice with the State of California to participate in the program and accepted into the apprenticeship program by our union partners.

This program prepares students to become steamfitters and includes an introduction to the installation, maintenance, and repair of different types of pipe systems; tool use; material applications and storage; and safety. Upon completion of the program, students will be able to install pipe systems that move liquids or gases under high pressure and use many different materials and construction techniques, depending on the type of project. They will be able to follow building plans or blueprints and instructions from supervisors to lay out the job and work efficiently with the materials and tools of the trade.

To earn a certificate of achievement, students must complete 14 out of 19 core courses. Students must complete each course used to meet a major requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the certificate. The courses required for the certificate of achievement also meet some of the requirements of the major for the associate of science degree.

complete at least 21 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>STMFT-110</td>
<td>OSHA-CPR</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-111</td>
<td>Trade Mathematics</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-112</td>
<td>Use and Care of Tools</td>
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<tr>
<td>STMFT-115</td>
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<td>1.5-2.5</td>
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<tr>
<td>STMFT-116</td>
<td>Pipe Shop II</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-117</td>
<td>Related Science in the Piping Trades</td>
<td>1.5-2.5</td>
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<tr>
<td>STMFT-118</td>
<td>Beginning Drawing and Plan Reading for the Piping Trades</td>
<td>1.5-2.5</td>
</tr>
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<td>STMFT-119</td>
<td>Advanced Drawing in the Piping Trade</td>
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<tr>
<td>STMFT-120</td>
<td>Instrumentation 1</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-121</td>
<td>Instrumentation 2</td>
<td>1.5-2.5</td>
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STMFT-117  Related Science in the Piping Trades ........ 1.5-2.5
STMFT-118  Beginning Drawing and Plan Reading for the Piping Trades .......... 1.5-2.5
STMFT-119  Advanced Drawing in the Piping Trade ........ 1.5-2.5
STMFT-120  Instrumentation 1 ........................................ 1.5-2.5
STMFT-121  Instrumentation 2 ........................................ 1.5-2.5
STMFT-122  Steam Systems ........................................... 1.5-2.5
STMFT-123  Electricity for Steamfitting ......................... 1.5-2.5
STMFT-124  Industrial Rigging ........................................ 1.5-2.5
STMFT-125  Beginning AutoCAD ................................... 1.5-2.5
STMFT-126  Advanced AutoCAD ..................................... 1.5-2.5
STMFT-127  Tube Bending .............................................. 1.5-2.5

total minimum required units 21-35

STMFT-110  OSHA-CPR
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section. This class is the same as PLUMB-110.
• Formerly STMFT-151

The regulations governed by OSHA 30, providing and recognizing safe work practices. Certification in Cardiac Pulmonary Resuscitation and First Aid.

STMFT-111  Trade Mathematics
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section. This class is the same as PLUMB-111.
• Formerly STMFT-152

The approaches to mathematical problem solving used in pipe fitting and metric conversion.

STMFT-112  Use and Care of Tools
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-250

The identification of tools encountered in the industrial environment. The proper use of trade-related tools.

STMFT-113  Welding Safety/Plate Welding
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-251

The introductory course in welding safety and theory. Beginning plate arc welding will be addressed.

STMFT-114  Oxygen/Acetylene Cutting
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-252

Oxygen and acetylene cutting and safety. Cutting for various plate thicknesses and layouts.

STMFT-115  Pipe Shop I
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-253

The use of various pipe and fitting materials and their application. Using pipes and pipe fitting materials to build piping projects based on isometric drawings.

STMFT-116  Pipe Shop II
1.5-2.5 units LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-270

Related technical instruction, supplementary to the apprentice’s on-the-job training. Student will be introduced to basic isometric drawing and basic steam systems. Copper connections will be made with solder and brazing procedures.
STMFT-117  Related Science in the Piping Trades
1.5-2.5 units  LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section. This class is the same as PLUMB-117.
- Formerly STMFT-153
The scientific and mechanical principles that are basic to the work of the piping industry.

STMFT-118  Beginning Drawing and Plan Reading for the Piping Trades
1.5-2.5 units  LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section. This class is the same as PLUMB-118.
- Formerly STMFT-154
The interpretation of drawings and sketches associated with piping installation.

STMFT-119  Advanced Drawing in the Piping Trades
1.5-2.5 units  LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section. This class is the same as PLUMB-119.
- Formerly STMFT-155
Interpret, coordinate and make drawings and sketches associated with piping installation.

STMFT-120  Instrumentation 1
1.5-2.5 units  LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
- Formerly STMFT-273
Related technical instruction, supplementary to the apprentice’s on-the-job training. Instrumentation 1 includes basic descriptions of processes, loop diagrams and documentation in the instrumentation field.

STMFT-121  Instrumentation 2
1.5-2.5 units  LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
- Formerly STMFT-274
Related technical instruction, supplementary to the apprentice’s on-the-job training. Instrumentation 2 will give the students the knowledge of pneumatic controls, liquid level instruments, analyzers and fiber optic signals.

STMFT-122  Steam Systems
1.5-2.5 units  LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
- Formerly STMFT-275
Related technical instruction, supplementary to the apprentice’s on-the-job training. Introduction to the properties of saturated steam, traps, boilers and heating systems.

STMFT-123  Electricity for Steamfitting
1.5-2.5 units  LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
- Formerly STMFT-276
The specialized knowledge and techniques required to make electrical systems operate and function properly for the steamfitter working in the instrumentation field.

STMFT-124  Industrial Rigging
1.5-2.5 units  LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
- Formerly STMFT-277
Related technical instruction, supplementary to the apprentice’s on-the-job training. Students will be able to identify safe work habits to use with industrial rigging. Load limits, crane ratings, equipment storage and handling are all covered.
STMFT-125  Beginning AutoCAD
1.5-2.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-260

Introductory course covering the computer application AutoCAD as it relates to the creation of technical drawings. Course covers two dimensional computer aided drafting of objects in orthographic projection. Hands-on training utilizing a comprehensive overview of the software package and its applications in pipe drafting is stressed. Students are recommended to have a basic knowledge of technical drawing.

STMFT-126  Advanced AutoCAD
1.5-2.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-271

Course is designed for students with previous knowledge and experience in using AutoCAD. Course covers surface/wireframe and solid modeling features of AutoCAD for 3-dimensional modeling and photo realistic rendering, customization and optimal application of AutoCAD and utility options for presentation purposes and project management.

STMFT-127  Pumps
1.5-2.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-278

Related technical instruction, supplementary to the apprentice's on-the-job training. Students will review the different types, installation, operation and maintenance of industrial pumps.

STMFT-128  Tube Bending
1.5-2.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-279

Related technical instruction, supplementary to the apprentice's on-the-job training. Students will complete projects related to tube bending and installations. Several tubing connection assignments will assist the student in recognizing different tubing connectors.

STMFT-129  Union Heritage
1.5-2.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.

This program is designed to review the heritage and traditions of the United Association of Steamfitters and Welders. Students will learn about past and current events with presentations and classroom interactions.

STMFT-131  Pipe Welding 1
1.5-2.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-261

The techniques and methods for beginning welding processes for the steamfitting apprentice. Safe procedures and practices for use of cutting torch. Introduction of groove pipe welding.

STMFT-132  Welding 5
1.5-3.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.
• Formerly STMFT-262

The techniques and methods for welding processes for the steamfitting apprentice. Students will learn to identify various welding rods and their applications.
STMFT-133  Welding 6  
1.5-3.5 units  LR  
  • Variable hours  
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.  
  • Formerly STMFT-263

The techniques and methods for welding processes for the steamfitting apprentice. Techniques studied will include string beads on an open grooved pipe weld and proper torch positioning for advanced torch cutting.

STMFT-134  Welding 7  
1.5-3.5 units  LR  
  • Variable hours  
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.  
  • Formerly STMFT-264

The techniques and methods for welding processes for the steamfitting apprentice. Topics will include proper handling of grinders, identification of hazards and an introduction to square groove welding processes.

STMFT-135  Welding 8  
1.5-3.5 units  LR  
  • Variable hours  
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.  
  • Formerly STMFT-265

The techniques and methods for welding processes for the steamfitting apprentice. Techniques studied will include single vee groove coupons in various positions.

STMFT-136  Welding 9  
1.5-3.5 units  LR  
  • Variable hours  
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.  
  • Formerly STMFT-266

The techniques and methods for welding processes for the steamfitting apprentice. Topics will include identification of trapped slag using an x-ray image, as well as completing a root bead in a welding coupon in 6G position.

STMFT-137  Welding 10  
1.5-3.5 units  LR  
  • Variable hours  
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.  
  • Formerly STMFT-267

The techniques and methods for welding processes for the steamfitting apprentice. Topics will include identification of materials and tools needed for stainless steel welding processes, and both location and repair of welding defects on carbon steel pipe.

STMFT-138  Orbital Welding  
1.5-2.5 units  LR  
  • Variable hours  
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.

The training and certification for the Automatic Orbital Welding machine.

STMFT-140  Construction Management in Steamfitting  
1.5-2.5 units  LR  
  • Variable hours  
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.  
  • Formerly STMFT-272

An introduction to the administrative procedures, plans and specifications, scheduling and other forms of communication in the construction field.

STMFT-150  Topics in Steamfitting  
.3-4 units  SC  
  • Variable hours  
  • Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.

A supplemental course in steamfitting to provide a study of current concepts and problems in steamfitting and related subdivisions. Specific topics will be announced in the schedule of classes.
STMFT-299 Student Instructional Assistant
.5-3 units SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled.

TRANSFER STUDIES – CSU

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Certificate of achievement - CSU General Education breadth
This certificate is designed for students planning to transfer to the California State University (CSU) System. It offers students a program of study which meets the CSU General Education requirements. Although the certificate recognizes the completion of lower division CSU general education requirements, it does not guarantee admission to a specific campus within the CSU system nor does it guarantee admission to a specific major. Some majors and colleges may require a different lower division preparation and/or a higher GPA than is necessary for this certificate.

Students who intend to transfer must meet all current CSU transfer requirements including minimum GPA and eligibility for certification. Students are strongly advised to meet with a counselor to discuss transfer requirements and lower division major preparation that is needed for their intended transfer school. (Also see CSU G.E. transfer information in this catalog)

transfer studies – IGETC

Program level student learning outcomes
Program level student learning outcomes have been developed for each of the three options for General Education. A complete list of current program level student learning outcomes for each program is available in this section of this catalog prior to the course and program descriptions and on the DVC website at www.dvc.edu/slo.

Certificate of achievement - Intersegmental General Education Transfer Curriculum - IGETC
This certificate is designed for students planning to transfer to either the University of California (UC) or the California State University (CSU) System. It offers students a program of study which meets IGETC requirements. Although the certificate recognizes the completion of lower division IGETC requirements, it does not guarantee admission to a specific campus or school within the UC or CSU systems nor does it guarantee admission to a specific major. Some majors and colleges may require a different lower division preparation and/or a higher GPA than is necessary for this certificate.

Students who intend to transfer must meet all current IGETC transfer requirements including minimum GPA and eligibility for certification. Students are strongly advised to meet with a counselor to discuss transfer requirements and lower division major preparation that is needed for their intended transfer school. (Also see IGETC transfer information in this catalog)

total minimum required units (IGETC) 34
Note: Students intending to transfer to the CSU system are advised that an additional six units of study are required for the American Institutions graduation requirement from CSU.

WORK EXPERIENCE

See Cooperative Education - COOP