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Understanding the course descriptions

UNDERSTANDING THE COURSE DESCRIPTIONS

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

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 or major requirements. Lists of CSU transferable courses are available at www.assist.org.

UC transferable (UC)
DVC offers many courses that are transferable to all UC campuses. A course must be on the Transfer Course Agreement (TCA) at the time it is taken to be transferable to UC. Courses identified with a UC code at the end of the description are transferable. Lists of UC transferable courses are available at www.assist.org.

California Course Identification Numbering System (C-ID)
The Course Identification Numbering System (C-ID) is a statewide numbering system independent from the course numbers assigned by local California community colleges. A C-ID number signals that participating California colleges and universities have determined that courses offered by other California community colleges are comparable in content and scope to courses offered on their own campuses, regardless of their unique titles or local course number. Thus, if a schedule of classes or catalog lists a course bearing a C-ID number, for example COMM 110, students at that college can be assured that it will be accepted in lieu of a course bearing the C-ID COMM 110 designation at another community college. In other words, the C-ID designation can be used to identify comparable courses at different community colleges. However, students should always go to www.assist.org to confirm how each college’s course will be accepted at a particular four-year college or university for transfer credit.

The C-ID numbering system is useful for students attending more than one community college and is applied to many of the transferable courses students need as preparation for transfer. Because these course requirements may change and because courses may be modified and qualified for or deleted from the C-ID database, students should always check with a counselor to determine how C-ID designated courses fit into their educational plans for transfer.

Students may consult the ASSIST database at www.assist.org for specific information on C-ID course designations. Counselors can help students interpret or explain this information. See course descriptions for C-ID course designations.

COURSEWORK AND STUDY TIME PER UNIT
Units of credit are a measure of the amount of study performed in the course; grades are a measure of the quality of that study. Generally speaking, for each three-unit lecture class, students spend three hours each week in class and six hours of study time out of class. A four-unit course that includes a lab would add another three hours each week in the laboratory.

PROGRAM LENGTH
Most degree programs at DVC can be completed in two years, assuming students take an average of 15 units per term. Certificate programs vary in length; most certificate programs require less than two years of full-time study to complete and many programs may be completed on a part-time basis. DVC offers two types of certificates: certificates of achievement and certificates of accomplishment. In many cases, courses completed as part of a certificate program can be applied to a degree program. Only certificates of achievement and associate degrees are recorded on the student’s official transcript. Students are advised to meet with a counselor or program advisor to develop an educational plan as not all courses are offered every term.

PROGRAM LEARNING OUTCOMES
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.
Program learning outcomes

**ACCOUNTING**
see Business accounting - BUSAC

**ADDITION 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.

**Certificate of achievement**
Addiction counseling

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.

**Associate in science in administration of justice for transfer**

Students completing the program will be able to...
A. achieve an advanced level of understanding about the administration of justice, the law, crime and delinquency, and working with diverse communities.
B. identify and increase understanding of major social issues relating to crime, criminals, prevention and control, and victims.
C. focus on police and social control, law and courts, corrections, juvenile justice, and special problems, trends, and contemporary topics in this field.

**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  
Community relations 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 an understanding of the theoretical and conceptual overview of multicultural concepts and issues as they relate to the criminal justice system.  
C. demonstrate an understanding of the history, culture, organization of criminal gangs and their social and criminal impact upon society.  

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.  

ALLIED HEALTH  

See Biological science - BIOSC  

ANTHROPOLOGY – ANTHR  

Associate in arts in anthropology for transfer  
Students completing the program will be able to...  
A. demonstrate an understanding of core knowledge within the anthropology discipline.  
B. demonstrate the ability to communicate ideas clearly and persuasively in writing.  
C. demonstrate the ability to analyze a problem and draw correct inferences using qualitative and/or quantitative analysis.  
D. demonstrate the ability to evaluate theory and critique research within the anthropology discipline.
Program learning outcomes

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 con-
ventions 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.

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 circum-
stances and cultural values.
F. employ critical thinking skills regarding their artwork
and the artwork of others.

Associate in arts in studio arts for transfer

Students completing the program will be able to...
A. demonstrate proficiency in basic skills and techniques
related to three-dimensional media, and apply the ele-
ments and principles of design in the creation of forms in
selected areas of emphasis.
B. demonstrate proficiency in basic skills and techniques
related to three-dimensional media, and apply the ele-
ments and principles of design in the creation of forms in
selected areas of emphasis.
C. analyze works of art in terms of their historical circum-
stances and cultural values.
D. apply critical thinking skills to the evaluation of their
artwork and the artwork of others.

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.

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 vari-
ous media and/or paintings in oil, acrylic, and alternative
media.

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
Graphic design

Students completing the program will be able to...
A. combine appropriate aesthetic form and content to create evocative and engaging work.
B. create appropriate typographic solutions for a variety of design situations.
C. demonstrate proficiency with computers, software and production processes.
D. select appropriate tools, materials and processes for a range of media products.
E. work collaboratively within a creative team.
F. critically evaluate and discuss the merits of various creative ideas.
G. develop a professional portfolio of work.

Certificate of achievement
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.

Certificate of achievement
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
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
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.
Program learning outcomes

**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.

**ART HISTORY – ARTHS**

**Associate in arts in art history for transfer**

Students completing any program will be able to...  
A. identify, describe, and analyze important artworks and issues from respective historical periods using appropriate art historical vocabulary.  
B. employ critical thinking skills in the study of art.  
C. describe the intersection of culture, politics, religion, and the arts in specific cultures and time periods.  
D. apply the elements and principles of design and aesthetics to create works of art.  
E. develop an awareness of various cultural contexts (including language, literature, music, philosophy) in which art is made.

**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 an 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.

**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.

**Certificate of accomplishment**

- **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).
Program learning outcomes

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
Business

Students completing the program will be able to...
A. demonstrate knowledge of business operations, the business organization, and business procedures.
B. 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.
C. apply ethical standards and best practices of social responsibility to business situations.
D. develop communication that presents business information in an organized and clear form.
E. implement technologies to identify business problems and to develop solutions and 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
Advanced 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.
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

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.
Program learning outcomes

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.

Certificate of achievement
Bookkeeping

Students completing the program will be able to...
A. enter basic accounting transactions into an accounting software program.
B. consolidate accounts on a monthly basis to track business income and expenses.
C. compare and contrast the financial information prepared for different types of business entities.

Certificate of achievement
General 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

Associate in arts in communication studies for transfer

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 public presentations.
C. demonstrate an understanding of the role critical thinking plays in the effective analysis and development of messages.
D. demonstrate an understanding of interpersonal communication theory and practice the skills necessary for effective interpersonal interactions.
E. improve delivery skills when making public presentations.

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
Core

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.

Certificate of achievement
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. produce spreadsheets, documents and presentations by using basic to advanced software operations.
C. apply database syntax, properties, operators, and functions.
Program learning outcomes

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. plan and design web pages.

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.

COMPUTER NETWORK TECHNOLOGY – CNT

Associate in science degree
Microsoft Windows system administration

Students completing the program will be able to...
A. list, describe, and configure TCP/IP protocols and ports.
B. apply and configure appropriate security measures.
C. maintain and upgrade computer systems.
D. install and configure Microsoft Windows operating systems and applications.
E. document and communicate system design and architecture.
F. demonstrate basic computer and networking literacy.
G. demonstrate a basic understanding of physical science.
**COMPUTER SCIENCE – COMSC**

**Associate in science degree**

Computer science

Students completing the program will be able to...

A. create computer programming solutions using either C++ or Java.
B. read and write programs written in x86 assembly language, and interface them with C++ programs.
C. effectively use either the C++ Standard Template Library or the Java utility package to manage data structures in programs.
D. make the right choices of language, platform, data structures, and databases for a computer programming solution based on their knowledge of the elements of program design.

**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.

**COMPUTER TECHNICAL SUPPORT – COMTC**

**Associate in science degree**

Computer technical support

**Certificate of achievement**

Computer technical support

**Certificate of accomplishment**

Computer technical support

Students completing the program will be able to...

A. troubleshoot and repair computer hardware problems.
B. troubleshoot and repair computer software problems related to operating systems, application programs and printer systems.
C. troubleshoot and repair computer network problems.
Program learning outcomes

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.

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.

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.

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.

Associate in science degree
Hospitality studies
Culinary arts

Students completing the program will be able to...
A. demonstrate an understanding of the criteria for excellence in purchasing food, preparing food, and presenting food for service.
B. demonstrate teamwork in planning, purchasing, preparing and presenting food for service.
C. demonstrate and describe the differences in producing foods for large events vs. a la carte dining.
Associate in science degree
Hospitality studies
Restaurant management:

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. 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.
E. analyze the integration of various arts and ideas in selected technical, historical, and thematic contexts for the theater, music and dance performing arts.
F. demonstrate knowledge of the human body, its relationship between diet and health, and incorporate alternative movement classes to improve physical health to improve performance.

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.
Program learning outcomes

**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 morale, 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 in dentist's 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's 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-fossa 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 (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.

**Associate in arts in theater arts for transfer**

Students completing the program will be able to...

A. demonstrate the fundamental performance and technical production processes necessary to participate successfully in a theatrical production.

B. analyze and critically evaluate a script for the purpose of both an actor’s preparation and for the technical elements needed to perform it: lighting, costume, scenery, props and sound.

C. demonstrate knowledge of the historical and cultural dimensions of theater, including the works of major playwrights, actors, directors, and designers, from pre-Greek civilizations to present day.

F. combine personalization techniques and strong vocal and physical skills to convey truthful emotional life on stage.
EARLY CHILDHOOD EDUCATION – ECE

Associate in science degree

Early childhood education

Students completing this 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.

Certificate of achievement

Early childhood education

Basic

Students completing this 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.

Certificate of achievement

Early childhood education

Master teacher

Students completing this program will be able to...
A. create a developmentally appropriate integrated curriculum.
B. analyze the psychological, physical and cognitive influences on child development.
C. identify and apply the principles and ideals of the early childhood education profession.
D. assess how socializing agents and culture impact the lives of children and families.
E. evaluate strategies to maximize the health, safety and nutrition of children in early childhood education programs.
F. develop techniques which will create sensitivity for various biases.
G. implement the observe, plan, document, reflect and assess cycle for curriculum planning.
H. develop positive relationships and responsive interactions with young children.
I. demonstrate techniques for guiding adults working with young children.
J. demonstration of knowledge in a specialization area.
Program learning outcomes

Certificate of achievement
Early childhood education
Site supervisor

Students completing this program will be able to...
A. create a developmentally appropriate integrated curriculum.
B. analyze the psychological, physical and cognitive influences on child development.
C. identify and apply the principles and ideals of the early childhood education profession.
D. assess how socializing agents and culture impact the lives of children and families.
E. evaluate strategies to maximize the health, safety and nutrition of children in early childhood education programs.
F. develop techniques which will create sensitivity for various biases.
G. implement the observe, plan, document, reflect and assess cycle for curriculum planning.
H. develop positive relationships and responsive interactions with young children.
I. demonstrate techniques for guiding adults working with young children.
J. examine theory and methodology for effective supervision.
K. apply ethical codes and licensing standards to practices and policies.
L. identify business requirements for children's centers.

Certificate of achievement
Early childhood education
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. 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.

Certificate of accomplishment
Early childhood education
Associate teacher

Students completing the program will be able to...
A. create a developmentally appropriate integrated curriculum.
B. analyze the psychological, physical and cognitive influences on child development.
C. identify and apply the principles and ideals of the early childhood education profession.
D. assess how socializing agents and culture impact the lives of children and families.

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 – 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.
Program learning outcomes

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).

ENGINEERING TECHNOLOGY – ENGTC

Associate in science degree
Industrial maintenance machinist/mechanic (mTECH)

Students completing the program will be able to...
A. discuss the role of the industrial maintenance machinist/mechanic in shop and field maintenance safety.
B. interpret blueprints and technical drawings for parts manufacturing and maintenance repair operations.
C. grind high speed steel tool bits for general purpose turning and threading.
D. cut multiple lead and acme threads on a lathe.
E. use the vertical milling machine to drill holes, index, bore hole to a specified diameter and depth, mill surfaces and edges, and use an indicator to reference work.
F. replace a single mechanical seal in a centrifugal pump.
G. align a pump shaft to a motor to a specified tolerance.

Certificate of achievement
Industrial maintenance machinist/mechanic (mTECH)

Students completing the program will be able to...
A. discuss the role of the industrial maintenance machinist/mechanic in shop and field maintenance safety.
B. interpret blueprints and technical drawings for parts manufacturing and maintenance repair operations.
C. grind high speed steel tool bits for general purpose turning and threading.
D. cut multiple lead and acme threads on a lathe.

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.

Associate in arts in English for transfer

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.

ENGLISH AS A SECOND LANGUAGE – ESL

Certificate of accomplishment
ESL conversation

Students completing the program will be able to...
A. increase confidence and skills in English pronunciation.
B. increase confidence and skills in listening to understanding English.
C. increase skills in English conversation, including a mock job interview.
Certificate of accomplishment
Intermediate ESL reading and writing

Students completing the program will be able to...
A. improve college-essay writing skills.
B. improve college-level critical reading skills.
C. improve critical thinking skills and prepare for more advanced college courses.

Certificate of accomplishment
Advanced ESL reading and writing

Students completing the program will be able to...
A. improve advanced-level essay writing skills.
B. improve advanced-level critical reading skills.
C. improve advanced-level critical thinking skills.
D. improve language control and sentence clarity in writing by focusing on the grammar in the context of writing.
E. continue improvement of conversation skills, as well as career/major exploration.

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.

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.

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 arts in geography for transfer

Students completing the program will be able to...
A. describe the various components of the geosystems and explain how they interact.
B. explain the interaction between physical and human components of the environment and how the nature of interaction varies in different parts of the world.
C. describe the role and significance of geospatial techniques in assessing and mapping the physical and cultural environments.
D. describe the characteristics of different cultural realms and demonstrate a respect for diversity that exists between and among cultural realms.

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 interdisciplinary 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.
Program learning outcomes

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.

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.

Associate in science degree in geology for transfer

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.

HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION – HVACR

Associate in science degree
Heating, ventilation, air conditioning, and refrigeration (HVACR)

Students completing the program will be able to...
A. analyze the electrical parts of the refrigeration system.
B. differentiate between many types of motors.
C. distinguish between mechanical and electrical controls.
D. demonstrate basic control designs that have applications to the HVACR industry.
E. identify the different types of controllers for the HVACR industry.
F. use oral and written communication skills in the HVACR industry.
Certificate of achievement  
Heating ventilation air conditioning and refrigeration (HVACR)

Students completing the program will be able to...
A. compare a number of basic principles and laws of electricity as they relate to AC refrigeration.
B. analyze the electrical parts of the refrigeration system.
C. differentiate between many types of motors.
D. distinguish between mechanical and electrical controls.
E. demonstrate basic control designs that have applications to the HVACR industry.
F. identify the different types of controllers for the HVACR industry.

Certificate of accomplishment  
Heating ventilation air conditioning and refrigeration (HVACR)

Students completing the program will be able to...
A. identify tools and equipment used in the industry.
B. demonstrate general safety practices.
C. compare a number of basic principles and laws of electricity as they relate to AC refrigeration.
D. analyze the electrical parts of the refrigeration system.
E. differentiate between many types of motors.
F. distinguish between mechanical and electrical controls.

HISTORY – HIST

Associate in arts in history for transfer

Students completing the program will be able to...
A. understand and value the importance of diverse perspectives in history.
B. analyze the causes and the effects of historical events.
C. apply critical thinking strategies to better understand and explain why historical events occurred and how those events affected various populations.
D. evaluate, using critical thinking strategies, how interpretations of historical events can be disputed.

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

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.
Program learning outcomes

Certificate of achievement
Retail Nursery

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.

HUMANITIES – HUMAN

Associate in arts degree
Art and 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.

JOURNALISM – JRNAL

Associate in arts in journalism for transfer

Students completing the program will be able to...
A. use a variety of media and sources to produce journalistic products that demonstrate good news judgment, appropriate sourcing, accuracy and completeness, technical competence and adherence to ethical, legal and style guidelines.
B. understand and analyze how history, economics, politics, law or government regulation affect the climate for journalism and freedom of speech in the United States.
C. demonstrate good work habits, time management and professionalism while working collaboratively and under deadline pressure to produce a news product.

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 NASIIV1, AFAA or other national certification exam.
**Associate in science degree**  
Kinesiology  
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.  
D. apply for transfer to a four-year institutions in such disciplines as kinesiology, exercise science and/or a teacher credential program.

**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 American Association of America (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.

**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 the 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.
Program learning outcomes

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

Students completing the program will be able to...
A. solve problems in linear algebra and differential and integral calculus, both single and multivariable.
B. recognize, explain, and apply basic techniques of mathematical proof.
C. utilize knowledge and skills from mathematics to solve mathematical problems from sciences such as physics, chemistry, engineering, or computer science.

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 in music for transfer

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.

MUSIC INDUSTRY STUDIES – MUSX

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

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.
PHYSICS – PHYS

Associate in science in physics for transfer  
Students completing the program will be able to...

A. correctly identify at the calculus level the forces acting on an object, draw a free-body diagram, and apply Newton's laws of motion.

B. correctly identify and apply one or more of the following skill sets or principles to solve a mechanics problem at the calculus level: accelerated motion, momentum conservation, energy conservation and rotational motion.

C. correctly identify and apply one or more of the following skill sets or principles to solve an oscillation problem at the calculus level: simple harmonic motion, wave motion, fluid interactions and gravitational interactions.

D. correctly identify and apply one or more of the following skill sets or principles to solve a problem in thermodynamics at the calculus level: temperature, heat, thermal expansion, kinetic theory, the ideal gas law, PV diagrams, internal energy, specific heat, the laws of thermodynamics, heat engines and entropy.

E. correctly identify and apply one or more of the following skill sets or principles to solve a problem concerning static electric charges at the calculus level: Coulomb's law, electric fields and their superposition, Gauss' law, the electric force, the electric potential and capacitance.

F. correctly identify and apply one or more of the following skill sets or principles to solve a problem concerning moving charges and/or time-varying fields at the calculus level: electric current, resistance, Biot-Savart law, magnetic fields, magnetic force laws, Ampere's law, Faraday's law, Maxwell's equations and plane electromagnetic waves.

G. correctly identify and apply one or more of the following skill sets or principles to solve a problem in geometric and/or wave optics at the calculus level: light as an electromagnetic wave, refraction and reflection, ray diagrams for lenses and mirrors, virtual images and objects, the lens/mirror equation, interference, diffraction and polarization.

H. correctly identify and apply one or more of the following skill sets or principles to solve a special relativity problem at the calculus level: relativity principle, proper time, proper length, lack of simultaneity, Lorentz transformation, relativistic momentum and energy.

I. correctly identify and apply one or more of the following skill sets or principles to solve a problem in modern physics at the calculus level: light as a particle (photons), particles (electrons, protons, neutrons) as waves, quantum uncertainty, interaction of light with matter, atoms, molecules and atomic nuclei.

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.

Certificate of accomplishment  
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.

POLITICAL SCIENCE – POLSC

Associate in arts degree for transfer  
Political science

Students completing the program will be able to...

A. recognize political values embedded in systems of political thought.

B. the basic structures and procedures of American government.

C. describe the relative impact of federal, state and local governments on the inhabitants of California.

D. describe the content and origins of several world philosophies.

E. Demonstrate an understanding of fundamental political concepts.

F. recognize and discuss various elements of power in political activity.
Program learning outcomes

PSYCHOLOGY – PSYCH

Associate in arts in psychology for transfer
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.
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.

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.

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.

SOCIOLGY – 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.
### 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.

**Certificate of accomplishment**  
Steamfitting

**Students completing the program will be able to...**
A. explain the responsibilities of a journey person with regards to training an apprentice on the job.
B. apply mathematical formula for calculating load weight on pipe.
C. demonstrate proper knot tying.
D. use the proper method to cut a steel plate, using an OXY/ACT torch.

### TRANSFER STUDIES – CSU

**Students completing the program will be able to...**
A. communicate effectively, both verbally and in writing.
B. critically analyze and solve problems using the appropriate technique for the issue at hand, including appropriate use of logic, mathematics, multi-disciplinary, and cultural considerations where applicable.
C. critically examine the function, media, subject matter, organization, aesthetic, style, and relative excellence of representative examples of the arts, literature, philosophy, and foreign languages including approaches from various historical, cultural, and gender-based origins.
D. develop an understanding of the information available, the perspectives and approaches of the physical, biological, social, and behavioral sciences, appreciating the power and limits of these methods of inquiry and both individual, ethical, and societal responsibilities.
E. organize and present information in person in a logical and understandable manner.

### TRANSFER STUDIES – IGETC

**Students completing the program will be able to...**
A. communicate effectively, both verbally and in writing.
B. critically analyze and solve problems using the appropriate technique for the issue at hand, including appropriate use of logic, mathematics, multi-disciplinary, and cultural considerations where applicable.
C. critically examine the function, media, subject matter, organization, aesthetic, style, and relative excellence of representative examples of the arts, literature, philosophy, and foreign languages including approaches from various historical, cultural, and gender-based origins.
D. develop an understanding of the information available, the perspectives and approaches of the physical, biological, social, and behavioral sciences, appreciating the power and limits of these methods of inquiry and both individual, ethical, and societal responsibilities.
E. organize and present information in person in a logical and understandable manner.
F. demonstrate proficiency in a language other than English, and knowledge of the associated history and culture, at the level expected from two years of high school study (for UC transfer).
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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

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 ensure 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 Introduction to Motivational Interviewing Skills</td>
<td>3</td>
</tr>
<tr>
<td>ADS-151* Ethical and Legal Concerns for ADS Paraprofessionals</td>
<td>1.5</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-168* Group Process and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>ADS-170 Introduction to Codependency and Family Issues</td>
<td>3</td>
</tr>
<tr>
<td>ADS-171* ADS Field Work I</td>
<td>5.5</td>
</tr>
<tr>
<td>ADS-172* ADS Field Work II</td>
<td>5.5</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 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. 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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<tr>
<td>ADS-154*</td>
<td>Dual Disorders</td>
</tr>
<tr>
<td>ADS-155</td>
<td>Diverse Communities and Social Services</td>
</tr>
<tr>
<td>ADS-170</td>
<td>Introduction to Codependency and Family Issues</td>
</tr>
<tr>
<td>HSCI-127</td>
<td>Drugs, Health and Society</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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<td>Introduction to Codependency and Family Issues</td>
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</tr>
<tr>
<td>HSCI-127</td>
<td>Drugs, Health and Society</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**

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

### ADS-151 Ethical and Legal Concerns for ADS Paraprofessionals
- **3 units**
  - 54 hours lecture per term
  - Prerequisite: ADS-102, 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**
  - 54 hours lecture per term
  - Prerequisite: ADS-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**
  - 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**
  - 54 hours lecture per term
  - Recommended: Eligibility for ENGL-122 or equivalent

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 inter-cultural work in social services, with particular emphasis on addiction prevention, intervention, and treatment services. CSU

### ADS-157 Group Process and Leadership
- **3 units**
  - 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**
  - 54 hours lecture per term
  - Recommended: HSCI-127 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**
  - 54 hours lecture/135 hours laboratory per term
  - Prerequisite: ADS-102, HSCI-127 and eligibility for ENGL-122 or equivalents
  - Note: It is highly recommended that a student have at least 10 units completed in the addiction studies program before entering the Field Work class.

In this course 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 by observing and assisting 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 what they learned 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**
  - 54 hours lecture/135 hours laboratory per term
  - Prerequisite: ADS-171 or equivalent
  - Co-requisite: ADS-151 or equivalent (may be taken previously)

In this course students will have the opportunity to enhance their work in community clinical settings that serve clients with substance abuse problems. They will gain first-hand experience and develop clinical competency by facilitating groups, developing case-management skills, and examining the clinical procedures related to addiction treatment in community settings. The course will consist of seminar and clinical experiences. Students will have supervision on-site, and then debrief their experiences in class, sharing both what they learned and the challenges they faced. 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, 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science degree
Administration of justice

Associate in science for transfer
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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJUS-120</td>
<td>Introduction to the Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-121</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-122</td>
<td>Criminal Procedure</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-124</td>
<td>Elements of Corrections</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-130</td>
<td>Cultural Diversity in Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-221</td>
<td>Legal Aspects of Evidence</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-284</td>
<td>Interviewing and Counseling</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 7-9 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJUS-125</td>
<td>Report Preparation for Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-139</td>
<td>Gangs and Threat Groups in America</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-203</td>
<td>Crime Scene Investigation</td>
<td>4</td>
</tr>
<tr>
<td>ADJUS-222</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-230</td>
<td>Juvenile Procedures</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-260</td>
<td>Patrol Procedures</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-270</td>
<td>Personal Self-Defense and Firearms</td>
<td>2</td>
</tr>
<tr>
<td>ADJUS-280</td>
<td>Probation and Parole</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-298</td>
<td>Independent Study</td>
<td>0.5-3</td>
</tr>
</tbody>
</table>

total minimum required units 28
Associate in science in administration of justice for transfer

A DVC administration of justice student who has earned the associate in science in administration of justice 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.

The associate in science in administration of justice for transfer is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor's degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the major satisfy both major and CSU GE/IGETC general education requirements; however, the units are only counted once toward the 60-credit requirement for an associate's 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:**

- ADJUS-120 Introduction to the Administration of Justice ... 3
- ADJUS-121 Criminal Law ........................................... 3

**plus at least 6 units from:**

- ADJUS-122 Criminal Procedure .................................... 3
- ADJUS-124 Elements of Corrections ............................. 3
- ADJUS-130 Cultural Diversity in Criminal Justice ............ 3
- ADJUS-203 Physical Evidence and The Crime Laboratory ... 4
- ADJUS-221 Legal Aspects of Evidence ............................ 3
- ADJUS-222 Criminal Investigation ................................. 3
- ADJUS-230 Juvenile Procedures ..................................... 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJUS-120</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-121</td>
<td>3</td>
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<tr>
<td>ADJUS-122</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-124</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-130</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-221</td>
<td>3</td>
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<tr>
<td>ADJUS-222</td>
<td>3</td>
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<tr>
<td>ADJUS-230</td>
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</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>MATH-142</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total minimum required units** 18-20

**plus at least 7-9 units from:**

- ADJUS-125 Report Preparation for Criminal Justice .... 3
- ADJUS-139 Gangs and Threat Groups in America .......... 3
- ADJUS-203 Crime Scene Investigation .................... 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-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

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>ADJUS-120</td>
<td>Introduction to the Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-130</td>
<td>Cultural Diversity in Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-139</td>
<td>Gangs and Threat Groups in America</td>
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</table>

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>ADJUS-280</td>
<td>Probation and Parole</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-284</td>
<td>Interviewing and Counseling</td>
<td>3</td>
</tr>
</tbody>
</table>

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 offices, 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.

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<tbody>
<tr>
<td>ADJUS-120</td>
<td>Introduction to the Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-124</td>
<td>Elements of Corrections</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-139</td>
<td>Gangs and Threat Groups in America</td>
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</tr>
<tr>
<td>ADJUS-284</td>
<td>Interviewing and Counseling</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 12

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 crime 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.

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<tbody>
<tr>
<td>ADJUS-120</td>
<td>Introduction to the Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-203</td>
<td>Crime Scene Investigation</td>
<td>4</td>
</tr>
<tr>
<td>ADJUS-222</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-260</td>
<td>Patrol Procedures</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 13

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.

required courses

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</tr>
<tr>
<td>ADJUS-122</td>
<td>Criminal Procedure</td>
<td>3</td>
</tr>
<tr>
<td>ADJUS-221</td>
<td>Legal Aspects of Evidence</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 12
Administration of justice

Certificate of accomplishment - Administration of justice - Juvenile counseling
This certificate prepares students for entry-level careers working with juvenile offenders, crime prevention, juvenile correctional facilities, and juvenile counseling and rehabilitation programs. Since juveniles commit most crimes, law enforcement officers should have a good understanding of the juvenile justice system. Those persons wishing to work as probation officers or parole officers should strongly consider taking these courses to greatly improve their 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.

required courses
ADJUS-120 Introduction to the Administration of Justice ........................................... 3
ADJUS-124 Elements of Correction ................................................................. 3
ADJUS-139 Gangs and Threat Groups in America ........................................... 3
ADJUS-230 Juvenile Procedures ................................................................. 3
ADJUS-284 Interviewing and Counseling .................................................. 3

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.

required courses
ADJUS-120 Introduction to the Administration of Justice ........................................... 3
ADJUS-125 Report Preparation for Criminal Justice ........................................... 3
ADJUS-139 Gangs and Threat Groups in America ........................................... 3
ADJUS-222 Criminal Investigation ................................................................. 3
ADJUS-260 Patrol Procedures ................................................................. 3
ADJUS-270 Personal Self-Defense and Firearms ........................................... 3

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
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  Crime Scene Investigation
4 units LR
• 54 hours lecture/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  Legal Aspects of 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
This course examines the organization, function, 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
This course covers the responsibilities, techniques, purpose and methods of police patrol. Routine patrol, crisis intervention, officer survival and investigation techniques and the effect of the patrol officer's decision making and judgment on the community will also be examined. 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: Participation in vigorous physical activity and a payment of a mandatory range fee required. Felony conviction prohibits enrollment.
This course provides training in personal self-defense and the use of firearms. Originally developed for law enforcement personnel re-certification, the course will benefit anyone desiring proficiency with handguns, personal safety and defensive tactics. The course will also include moral and legal aspects of the use of weapons, safety in the use of side arms and shotguns, and training in the use of pepper spray and stun guns. CSU

ADJUS-280 Probation and Parole
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is 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 will be covered. There will be specific emphasis 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
This course is 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. This is 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

ALLIED HEALTH

See Biological science - BIOSC

ANTHROPOLOGY – ANTHR

Obed Vazquez, 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.

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.
Associate in arts for transfer
Anthropology

Associate in arts in anthropology for transfer

The anthropology program at Diablo Valley College offers students the opportunity to study humankind from the broadest biological, historical, and geographical perspectives. Anthropology is a multidisciplinary and yet holistic way to study all aspects of humanity, from biological origins to ways of social behavior, past and present. Anthropology presents to the student a world view that is personally enriching as well as practical. Courses in the program offer knowledge of social and cultural aspects of behavior, as well as the biological nature of humans. Courses included in the anthropology major are intended to give a general understanding of human biology, ecology, evolution, prehistory, and the nature of human cultures.

This curriculum is designed to provide an opportunity for the anthropology major to achieve an associate in arts degree 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 anthropology. A baccalaureate degree is recommended preparation for those considering professional careers in anthropology. Completion of this curriculum will demonstrate commitment to the field and provide comprehensive preparation for upper-division work.

The associate in arts in anthropology for transfer is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSUGE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor's degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the major satisfy both major and CSUGE/IGETC general education requirements; however, the units are only counted once toward the 60 unit requirement for an associate’s 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>
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<th>Course Title</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>ANTHR-125</td>
<td>Introduction to Archaeology and Prehistory</td>
<td>3</td>
</tr>
<tr>
<td>ANTHR-130</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTHR-140</td>
<td>Biological Anthropology</td>
<td>3</td>
</tr>
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**plus at least 3 units from:**

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<td>Magic, Witchcraft, and Religion in the Americas</td>
<td>3</td>
</tr>
<tr>
<td>ANTHR-135</td>
<td>Native Americans</td>
<td>3</td>
</tr>
<tr>
<td>ANTHR-141L</td>
<td>Biological Anthropology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-120</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>MATH-142</td>
<td>Elementary Statistics with Probability</td>
<td>4</td>
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<tr>
<td>BUS-240</td>
<td>Business Statistics</td>
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<td>Human Anatomy</td>
<td>5</td>
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<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
<tr>
<td>GEOL-120</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL-122</td>
<td>Physical Geology Laboratory</td>
<td>1</td>
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<tr>
<td>PSYCH-215</td>
<td>Introduction to Research Methods in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-123</td>
<td>Introduction to Social Research</td>
<td>3</td>
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<td>Primate Evolution and Adaptation</td>
<td>3</td>
</tr>
<tr>
<td>ANTHR-126</td>
<td>Introduction to Archaeological Field Methods</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-130</td>
<td>Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-114</td>
<td>World Music</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-120</td>
<td>Introduction to Sociology</td>
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</table>

**total minimum required units**

18-21

**ANTHR-115 Primate Evolution and Adaptation**

3 units \( \text{SC} \)

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

This course is an introduction to the biology, behavior, ecology, and evolutionary history of the primate order. An emphasis will be placed on the following topics: evolutionary theory; mammalian biology, anatomy, and osteology; primate behavior, ecology, and biogeography; primate evolutionary history; 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
This course is an introduction to the study of concepts, theories, data and models of anthropological archaeology that contribute to our knowledge of the human past. The course includes a discussion of the nature of scientific inquiry; the history and interdisciplinary nature of archaeological research; dating techniques; methods of survey, excavation, analysis, and interpretation; cultural resource management; professional ethics; and selected cultural sequences. Emphasis will be given to the study of the prehistoric inhabitants of the San Francisco Bay Region. C-ID ANTH 150, 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
This course explores how anthropologists study and compare human culture. Cultural anthropologists seek to understand the broad arc of human experience focusing on a set of central issues: how people around the world make their living (subsistence patterns); how they organize themselves socially, politically and economically; how they communicate; how they relate to each other through family and kinship ties; what they believe about the world (belief systems); how they express themselves creatively (expressive culture); how they make distinctions among themselves such as through applying gender, racial and ethnic identity labels; how they have shaped and been shaped by social inequalities such as colonialism; and how they navigate culture change and processes of globalization that affect us all. Ethnographic case studies highlight these similarities and differences, and introduce students to how anthropologists do their work, employ professional anthropological research ethics and apply their perspectives and skills to understand humans around the globe. CSU, UC

ANTHR-135  Native Americans
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is 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  Biological Anthropology
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course introduces the concepts, methods of inquiry, and scientific explanations for biological evolution and their application to the human species. Issues and topics will include, but are not limited to, genetics, evolutionary theory, human variation and biocultural adaptations, comparative primate anatomy and behavior, and the fossil evidence for human evolution. The scientific method and the theory of biological evolution serve as foundations of the course. CSU, UC
ANTHR-141L Biological Anthropology Laboratory
1 unit  SC
• 54 hours laboratory per term
• Prerequisite: ANTHR-140 or equivalent (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. 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 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

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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

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 GE). Option 1 (DVC General Education) is not generally advised.

To earn an associate in science degree with a major in architectural 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.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
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</thead>
<tbody>
<tr>
<td>ARCHI-120 Introduction to Architecture and Environmental Design</td>
<td>3</td>
</tr>
<tr>
<td>ARCHI-121 Architectural Design I</td>
<td>4</td>
</tr>
<tr>
<td>ARCHI-130 Architectural Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>ARCHI-131 Architectural Graphics II</td>
<td>3</td>
</tr>
<tr>
<td>ARCHI-135 Digital Tools for Architecture I</td>
<td>3</td>
</tr>
<tr>
<td>ARCHI-220 Architectural Design II</td>
<td>4</td>
</tr>
<tr>
<td>ARCHI-221 Architectural Design III</td>
<td>4</td>
</tr>
<tr>
<td>ARCHI-244 Architectural Practice and Working Drawings I</td>
<td>3</td>
</tr>
<tr>
<td>CONST-144 Materials of Construction</td>
<td>3</td>
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</tbody>
</table>

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
**Associate in science degree - Architecture technology**

The DVC architecture technology degree program offers students the opportunity to earn an associate in science degree 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 an associate in science with a major in architecture technology, 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, these units are only counted once.

**major requirements**

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<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>4</td>
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<tr>
<td>ARCHI-130</td>
<td>Architectural Graphics I</td>
<td>3</td>
</tr>
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<td>ARCHI-244</td>
<td>Architectural Practice and Working Drawings I</td>
<td>3</td>
</tr>
<tr>
<td>CONST-124</td>
<td>Construction Details and Specifications</td>
<td>3</td>
</tr>
<tr>
<td>CONST-135</td>
<td>Construction Processes (Residential)</td>
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**plus at least 6 units from:**

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<tr>
<td>CONST-116</td>
<td>Plane Surveying</td>
<td>3</td>
</tr>
<tr>
<td>CONST-181</td>
<td>Building Code Interpretation: Non Structural</td>
<td>3</td>
</tr>
<tr>
<td>CONST-183</td>
<td>Title 24: Energy Conservation Codes</td>
<td>3</td>
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<tr>
<td>COOP-180</td>
<td>Internship in Occupational Work Experience Education</td>
<td>2-3</td>
</tr>
<tr>
<td>ENGIN-226</td>
<td>Computer Aided Drafting Design, Advanced Concepts - AutoCAD</td>
<td>4</td>
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</table>

**total minimum required units** 29

**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, 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**

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</table>

**total minimum required units** 29

**ARCHI-105 Architectural Assembly and Fabrication**

.5-1 unit SC

* Variable hours

This course presents methods of fabrication for architectural projects in metal, wood, plastic and other materials and includes an 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/90 hours laboratory 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/72 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.  

This is an introductory course covering the computer application AutoCAD as it relates to the creation of technical drawings. Two dimensional computer aided drafting of objects in orthographic projection is covered. 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, UC

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-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-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 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 influence 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, architecture of Japan, China and India, historic buildings in Colonial America, and architectural developments in Europe during the 18th Century including Romanticism and later Greek and Gothic revival movements. 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

This course presents 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
This course covers the theory and application of climate, energy use, and comfort as determinants of architectural form in small scale buildings. Methods of ventilating, cooling, heating, and lighting will be discussed. Topics include passive solar techniques, cross and stack ventilation, daylighting and an introduction to mechanical systems for environmental control in buildings. There will be an 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
ARCHI-226  Computer Aided Drafting Design, Advanced Concepts - AutoCAD
4 units  SC
• 54 hours lecture/72 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.

This course is designed for students with previous knowledge and experience in using AutoCAD. Surface/wireframe and solid modeling features of AutoCAD for three-dimensional modeling and photo realistic rendering, customization and optimal application of AutoCAD and utility options for presentation purposes and project management will be covered. 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

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-244 or equivalent

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 – 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 learning outcomes**

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

**Associate in arts degree**

Fine arts

**Associate in arts for transfer**

Studio arts

**Certificates of achievement**

Ceramics
Painting and drawing
Printmaking

**Associate in arts 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 GE). 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**

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<th>Course</th>
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<td>ART-102</td>
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<td>ART-105</td>
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**plus at least 6 units from:**

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<th>Course</th>
<th>Units</th>
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<tr>
<td>ARTHS-193</td>
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<td>ARTHS-195</td>
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<td>ARTHS-196</td>
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<td>ARTHS-197</td>
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<td>ARTHS-199</td>
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**plus at least 12 units from a minimum of three areas of specialization:**

**art history**

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<th>Course</th>
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<td>ARTHS-193</td>
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<td>ARTHS-197</td>
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<td>ARTHS-199</td>
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**ceramics**

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<th>Course</th>
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<td>ART-152</td>
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<td>ART-156</td>
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</table>
The associate in arts in studio arts for transfer offers students a curricular program for studying a variety of beginning courses within the field of art practice. The student with associate in arts in studio arts for transfer is prepared for upper division work in the major at four-year institutions. The curriculum develops a student’s critical thinking skills, hones problem-solving skills, and establishes visual literacy.

The associate in arts in studio arts for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE) OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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.

**Associate in arts in studio arts for transfer**

**Major requirements:**

- **ART-109** Printmaking: Monotype .......................... 3
- **ART-110** Introduction to Printmaking ..................... 3
- **ART-111** Printmaking: Etching I .......................... 3
- **ART-138** Sculpture I ........................................ 3
- **ART-139** Sculpture II ....................................... 3
- **ART-142** Metal Art I ......................................... 3

**Total minimum required units** 24

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

**Applied design**

- **ART-146** Metallurgical and Jewelry I ...................... 3
- **ART-147** Metallurgical and Jewelry II ..................... 3
- **ART-156** Color Theory and its Application to 2-D Media 3

**Color**

- **ART-125** Color Theory and its Application to 2-D Media 3
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 the 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 insure 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 certificate of achievement in painting and drawing include: exhibiting artist, muralist, illustrator, graphic designer, art dealer, art critic and other professions in creative endeavors.
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.

required course       units
ART-105  Drawing I................................................. 3
ART-106  Drawing II............................................. 3
ART-107  Figure Drawing I........................................ 3
ART-120  Watercolor I.......................................... 3
ART-125  Color Theory and its Application to 2-D Media............................................. 3
ART-135  Art Gallery/Museum Management.............. 3
ARTDM-112 Digital Imaging for the Artist.................. 3

plus at least 6 units from:
ART-106  Drawing II............................................. 3
ART-120  Watercolor I.......................................... 3
ART-125  Color Theory and its Application to 2-D Media............................................. 3
ARTHS-197  History of Baroque to Early 20th Century Art... 3

total minimum required units: 15

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 provide preparation for transfer. The printmaking major is available at UC and CSU systems, 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 study of 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 silk-screen 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.

required courses       units
ART-105  Drawing I................................................. 3
ART-106  Drawing II............................................. 3
ARTDM-112 Digital Imaging for the Artist.................. 3

plus at least 9 units from:
ART-109  Printmaking: Monotype............................. 3
ART-110  Introduction to Printmaking..................... 3
ART-111  Printmaking: Etching I............................. 3
ART-112  Printmaking: Etching II.......................... 3
ART-114  Printmaking: Woodblock......................... 3
ART-116  Printmaking: Stencil and Screen Print........ 3

total minimum required units: 15

ART-101  Introduction to 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, UC

ART-102  Introduction to Sculpture and 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 sculpture and three-dimensional design, 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, UC

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. 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; eligibility for ENGL-116/118 or equivalent  
• Note: Mandatory materials fee required  

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  
• Note: Mandatory materials fee required  

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  
• Recommended: ART-105 or equivalent  
• Note: Mandatory materials fee required  

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  
• Note: Mandatory materials fee required  

A continuation of study of intaglio printmaking: line etching, aquatint, deepbite, multiple color plates, and photo etching. Projects and discussions 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  
• Note: Mandatory materials fee required  

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  
• Note: Mandatory materials fee required  

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
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>SC</th>
<th>Prerequisites</th>
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</thead>
</table>
| ART-120    | Watercolor I                  | 3     | 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-120A   | Introduction to Watercolor    | 1.5   | SC  | • 18 hours lecture/36 hours laboratory per term  
|            |                               |       |     | • Recommended: Eligibility for ENGL-116/118 or equivalent  
|            |                               |       |     | • Note: ART-120A is equivalent to the first half of ART-120. ART-120A and 120B combined are equivalent to ART-120  
|            |                               |       |     | Emphasis on the study of beginning techniques and materials of watercolor painting. CSU, UC |
| ART-120B   | Watercolor Workshop           | 1.5   | SC  | • 18 hours lecture/36 hours laboratory per term  
|            |                               |       |     | • Recommended: ART-120A or equivalent; eligibility for ENGL-116/118 or equivalent  
|            |                               |       |     | • Note: ART-120B is equivalent to the second half of ART-120; and ART-120A and 120B combined are equivalent to ART-120  
|            |                               |       |     | Emphasis on problem solving concept, development, and skill demonstration in watercolor. CSU, UC |
| ART-121    | Watercolor II                 | 3     | SC  | • 36 hours lecture/72 hours laboratory per term  
|            |                               |       |     | • Recommended: ART-120 or equivalent; eligibility for ENGL-116/118 or equivalent  
|            |                               |       |     | A continuation of watercolor skill development, with an emphasis on compositional components and painting concepts. CSU, UC |
| ART-125    | Color Theory and its Application to 2-D Media | 3 | SC  | • 36 hours lecture/72 hours laboratory per term  
|            |                               |       |     | • Recommended: ART-105 and ART-126 or equivalents; eligibility for ENGL-116/118 or equivalent  
|            |                               |       |     | The study, practice, and analysis of color theory as it affects formal and conceptual elements in 2-D media. CSU, UC |
| ART-126    | Painting I: Introduction to Painting | 3  | SC  | • 36 hours lecture/72 hours laboratory per term  
|            |                               |       |     | • Prerequisite: ART-105 or equivalent  
|            |                               |       |     | • Recommended: Eligibility for ENGL-116/118 or equivalent  
|            |                               |       |     | • Note: ART-126A and ART-126B combined are equivalent to ART-126  
|            |                               |       |     | This beginning level course provides students with an introduction to the materials and techniques of oil and acrylic painting. CSU, UC |
| ART-126A   | Introduction to Oil/Acrylic Painting A | 1.5 | 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 ART-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 | 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  | SC  | • 36 hours lecture/72 hours laboratory per term  
|            |                               |       |     | • Prerequisite: ART-105 or equivalent  
|            |                               |       |     | • Recommended: ART-125 and ART-126 or equivalents; 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-128 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-130  Figurative Concepts  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Prerequisite: ART-107 or equivalent  
- Recommended: ART-127 or equivalent; eligibility for ENGL-116/118 or equivalent  

This course is designed to provide students the experience with concepts and media in painting using the human figure as subject matter. The objective of this course is to offer development in the skills and techniques necessary to depict the human figure. CSU  

ART-131  Painting and Abstraction  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-129 or equivalent; eligibility for ENGL-116/118 or equivalent  

This course is designed to enable advanced students to develop their painting and drawing techniques while focusing on contemporary abstraction and its influence on today’s art movements and studio practice. Students will paint using a variety of subjects while focusing on abstraction as the form and style. A survey of historical art movements in abstraction will be presented and their relevance to current painting issues will be discussed. CSU  

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  

This course is a study of the skills, theories, and practices necessary to prepare works of art for public display. Preparation of artwork, exhibition design, installation, registration, conservation, advertising, and legal issues will be addressed. Students will develop professional skills needed to interact within art and related business environments. Students will apply practical skills in the DVC Art Gallery. 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, UC  

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, UC  

ART-142  Metal Art I  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-102 or equivalent  
- Note: Mandatory materials fee required  

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-102 or equivalent and ART-142 or equivalent
• Note: Mandatory materials fee required
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-102 or equivalent
• Note: Mandatory materials fee required
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-102 or equivalent and ART-144 or equivalent
• Note: Mandatory materials fee required
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-102 or equivalent
• Note: Mandatory materials fee required
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
• Note: Mandatory materials fee required
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
• Note: Mandatory materials fee required
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, UC

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
• Note: Mandatory materials fee required
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
- Note: Mandatory materials fee required

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
- Note: Mandatory materials fee required

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
- Note: Mandatory materials fee required

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
- Note: Mandatory materials fee required

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 a working SLR film camera with manual capability
- Note: Mandatory materials fee required

An introductory black and white film photography class that offers students a working knowledge of the basics of traditional darkroom photography, including history, theory and practice. Negative scanning and digital photography will also be introduced. 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; eligibility for ENGL-122 or equivalent
- Note: Students supply a working SLR film camera with manual capability and a light meter (either hand held or built into the camera)
- Note: Mandatory materials fee required

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

ART-163  Documentary Photography
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-161 or equivalent; eligibility for ENGL-122 or equivalent
- Note: Students supply cameras and flash drive
- Note: Mandatory materials fee required

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-164  Photographic Portfolio Development
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-161 or equivalent; eligibility for ENGL-122 or equivalent
- Note: Students supply a working SLR film camera with manual capability.
- Note: Mandatory materials fee required

This course offers students an opportunity to develop advanced skills using the materials and techniques of traditional and digital photography. 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-165  Advanced Photographic Portfolio Development
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-161 or equivalent; eligibility for ENGL-122 or equivalent
- Note: Mandatory materials fee required

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 identify individual aesthetic concerns, define themes and genres as the basis of their creative project, and relate their construction of a personal vision to contemporary and historical creative photography. CSU

ART-250  Projects in Art
.3-4 units  SC
- Variable hours

This is a supplemental course in art that provides a study of current concepts and problems in art. Specific topics will be announced in the schedule of classes. 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-110</td>
<td>Digital Imaging Process and Technique I</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-111</td>
<td>Digital Imaging Process and Technique II</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-130</td>
<td>Introduction to Digital Audio</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-149</td>
<td>Fundamentals of Digital Video</td>
<td></td>
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<tr>
<td>ARTDM-190</td>
<td>Digital Media Projects</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-191</td>
<td>Multimedia Portfolio Development</td>
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</tbody>
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plus 8-9 units from one of the following six specialty areas:

**character animation**

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>ART-107</td>
<td>Figure Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-165</td>
<td>Cartoon Drawing for Digital Animation</td>
<td>3</td>
</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>
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</tbody>
</table>

**digital audio**

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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>MUSX-172</td>
<td>Introduction to Electronic Music and MIDI</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-173</td>
<td>Advanced Electronic Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-174</td>
<td>Introduction to Pro Tools</td>
<td>3</td>
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**digital imaging**

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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-115</td>
<td>Digital Imaging Process and Technique III</td>
<td></td>
</tr>
<tr>
<td>ARTDM-214</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
</tr>
</tbody>
</table>

**motion graphics**

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<thead>
<tr>
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<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTDM-140</td>
<td>Motion Graphics</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-145</td>
<td>Digital Editing</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-170</td>
<td>Animation and Interactivity</td>
<td>3</td>
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</tbody>
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**3D modeling and animation**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ARTDM-160</td>
<td>3D Modeling and Animation I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-161</td>
<td>3D Modeling and Animation II</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-165</td>
<td>Cartoon Drawing for Digital Animation</td>
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**web design**

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<thead>
<tr>
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<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ARTDM-170</td>
<td>Animation and Interactivity</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-171</td>
<td>Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-195</td>
<td>WWW Publishing with HTML</td>
<td>1</td>
</tr>
<tr>
<td>COMSC-196</td>
<td>Advanced WWW Publishing</td>
<td></td>
</tr>
</tbody>
</table>

**total minimum required units** 33.5

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

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**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 idea 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 GE). 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.
required courses  
ART-105  Drawing I .............................................3
ART-106  Drawing II ...............................................3
ART-110  Introduction to Printmaking ...........................3
ART-138  Sculpture I ...............................................3
ARTDM-117  Digital Illustration ..................................3
ARTDM-136  Introduction to Digital Photography .................3
ARTDM-171  Introduction to Web Design ..........................3
ARTDM-190  Digital Media Projects ..............................3
ARTDM-214  Introduction to Graphic Design .......................3
ARTDM-224  Typography..............................................3
ARTHS-199  Contemporary Art History ............................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-112  Digital Imaging for the Artist .........................3

total minimum required units 36

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  
ART-105  Drawing I .............................................3
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-150  Digital Media Projects ..............................3
ARTDM-151  Multimedia Portfolio Development ..................3

plus 8-9 units from one of the 6 specialty areas listed below*:
character animation
ART-107  Figure Drawing I ........................................3
ARTDM-165  Cartoon Drawing for Digital Animation ..........3
ARTDM-166  Intermediate Cartoon Drawing for Digital Animation ...........................................3
ARTDM-170  Animation and Interactivity ........................3

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

total minimum required units 33.5

*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
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>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
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<tr>
<td>ART-106</td>
<td>Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>ART-110</td>
<td>Introduction to Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART-138</td>
<td>Sculpture I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-117</td>
<td>Digital Illustration</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-136</td>
<td>Introduction to Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-171</td>
<td>Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-190</td>
<td>Digital Media Projects</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-214</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-224</td>
<td>Typography</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-199</td>
<td>Contemporary Art History</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>
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<tbody>
<tr>
<td>ARTDM-110</td>
<td>Digital Imaging Process and Technique I</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-111</td>
<td>Digital Imaging Process and Technique II</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 36

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.

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>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
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<td>ART-105</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-110</td>
<td>Digital Imaging Process and Technique I</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-111</td>
<td>Digital Imaging Process and Technique II</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-130</td>
<td>Introduction to Digital Audio</td>
<td>1.5</td>
</tr>
<tr>
<td>ARTDM-149</td>
<td>Fundamentals of Digital Video</td>
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plus at least 6 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
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</tr>
<tr>
<td>ARTDM-115</td>
<td>Digital Imaging Process and Technique III</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-136</td>
<td>Introduction to Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-140</td>
<td>Motion Graphics</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-160</td>
<td>3D Modeling and Animation I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-161</td>
<td>3D Modeling and Animation II</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-170</td>
<td>Animation and Interactivity</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-171</td>
<td>Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-214</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-195</td>
<td>WWW Publishing with HTML</td>
<td>1</td>
</tr>
<tr>
<td>COMSC-196</td>
<td>Advanced WWW Publishing</td>
<td>1</td>
</tr>
<tr>
<td>MUSX-172</td>
<td>Introduction to Electronic Music and MIDI</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-173</td>
<td>Advanced Electronic Music</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 16.5

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

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-160 or equivalent
- Note: Students must have digital camera with manual functions
- Note: Mandatory materials fee required
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 2D 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-146  Intermediate Digital Editing
3 units  SC
- Prerequisite: ARTDM-145 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Same as BCA-166 and FILM-166
This intermediate course is designed to advance the student’s non-linear digital editing skills to a professional level. The emphasis will be on the utilization of software programs such as Adobe Premiere Pro. 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-155  Introduction to Documentary Production
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
This introductory course focuses on the required skills to create effective documentary videos using digital cameras. Students will be introduced to the fundamental principles of nonfiction field production including writing, producing, recording, lighting, and editing. The course combines theory, history and practice. 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 story board 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 work stations 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 2D 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 2D 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, UC
ARTDM-180  Introduction to Game Design
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Recommended: ARTDM-110 or equivalent

This introductory game design course will use common fundamental design strategies to create playable video games. Students will gain an understanding of simple game construction and the conceptual design process of game architecture. No programming skills are required to complete this course. CSU

ARTDM-181  Intermediate Game Design
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Recommended: ARTDM-180 or equivalent

This intermediate game design course will use fundamental design strategies to create playable video games. Students will gain an understanding of intermediate game construction and the conceptual design process of game architecture. No programming skills are required to complete this course. 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
• Note: Mandatory materials fee required

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

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.

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is available on the DVC website at www.dvc.edu/slo.

Associate in arts for transfer
Art history

Associate in arts in art history for transfer
The associate in arts in art history for transfer offers students a curricular program for studying a variety of beginning courses within the field of art history. The art history major is a two-year degree program of transferable courses open to all students. The program requirements are designed for those interested in art history as preparation for transfer. The program is broadly constructed both to prepare students for advanced study in the history of art and to provide a basis for many other fields that require the ability to do independent research, evaluate evidence (visual and textual), and create a coherent argument.

The major has required components of Western art history, non-Western art, and fundamentals of drawing and design. The studio practice courses are common components of art history degrees, and are necessary to an understanding of the fundamentals of art making, which informs theory and critique. Students also select related electives. Foreign language preparation is recommended as many baccalaureate degrees and most post-baccalaureate programs require proficiency in at least one foreign language.

Fine arts faculty and staff are dedicated to assisting students in exploring job opportunities, internships, and transferring to four-year institutions of higher learning. Students interested in the major must contact DVC counselors and art faculty about program requirements and transferability to specific institutions. The student with an associate in arts in art history for transfer is prepared for upper division work in the major or related fields (humanities, interdisciplinary studies, visual studies) 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. Career opportunities include: art or art history teacher, art conservator, museum curator, art journalist, and other related professions. Career opportunities are also available in galleries, museums, and art organizations. Some career fields will require post-baccalaureate preparation. Students also receive a broad-based liberal arts education that is strong in critical thinking skills, which prepares them for a range of professions.

The associate in arts in art history for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:
• Complete 60 semester CSU-transferable units.
• Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
• Complete a minimum of 18 semester units in the major.
• Obtain a minimum grade point average (GPA) of 2.0.
• Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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

ARTS-105 Drawing I ........................................... 3
ARTS-193 History of Asian Art .............................. 3
ARTS-195 History of Prehistoric and Ancient Art ........ 3
ARTS-196 History of Medieval and Renaissance Art ....... 3
ARTS-197 History of Baroque to Early 20th Century Art ..... 3

plus at least 3 units from:

ART-101 Introduction to Sculpture and Three-Dimensional Design .......... 3
ART-102 Figure Drawing I .................................... 3
ART-138 Sculpture I ........................................... 3
ART-142 Metal Art I ............................................ 3
ART-152 Wheel Thrown Ceramic Art ......................... 3
ART-160 Photography I ........................................ 3
ARTDM-112 Digital Imaging for the Artist ..................... 3

plus at least 3 units from:

ARTS-199 Contemporary Art History ......................... 3
ENGLCH-121 Second Term French ........................... 3
FRNCH-220 Third Term French ............................... 3
FRNCH-221 Fourth Term French .............................. 3
FRNCH-230 Fifth Term French ................................ 3
FRNCH-231 Sixth Term French ................................ 3
GRMAN-121 Second Term German ............................ 3
GRMAN-220 Third Term German ............................... 3
GRMAN-221 Fourth Term German ............................. 3
GRMAN-230 Fifth Term German ............................... 3
GRMAN-231 Sixth Term German ............................... 3
HUMAN-110 Introduction to Humanities: Ancient Civilization (to 500 A.D.) ....... 3
HUMAN-111 The Middle Ages and Renaissance (500 A.D. – 1700 A.D.) ............ 3
HUMAN-112 Introduction to Humanities: The Modern World (1700-Present) ......... 3
HUMAN-115 Introduction to Humanities: The American Cultural Experience ........ 3
HUMAN-116 The Arts and Culture of Asia .................... 3
ITAL-121 Second Term Italian ................................ 3
ITAL-220 Third Term Italian ................................... 3
ITAL-221 Fourth Term Italian ................................ 3
ITAL-230 Fifth Term Italian ................................... 3
ITAL-231 Sixth Term Italian ................................... 3

total minimum required units 21-23

ARTS-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

ARTS-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

ARTS-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

ARTS-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

ARTS-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

ARTS-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
**ARHS-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

**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-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
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 GE) 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.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-139 Human Anatomy</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-140 Human Physiology</td>
<td>5</td>
</tr>
<tr>
<td>NUTRI-160 Nutrition: Science and Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

| BIOSC-119 Fundamentals of Microbiology                  | 4     |
| BIOSC-146 Principles of Microbiology                    | 5     |

plus at least 4 units from:

| CHEM-108 Introductory Chemistry                         | 4     |
| CHEM-109 Introduction to Organic and Biochemistry       | 4     |
| CHEM-120 General College Chemistry 1                    | 5     |

total minimum required units: 21

**Associate in science degree - Biology**

The associate in science degree with a major in biology is designed as a two-year program that offers a broad general education background and an introduction to the basic principles of biology as well as the supporting knowledge of chemistry needed to fully understand and appreciate biology as specified by the learning objectives of the courses. The courses included in the major are also applicable to further study in the life sciences.

The DVC biology 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 GE). 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.
Biological science

major requirements       units
BIOSC-130 Principles of Cellular and Molecular Biology.............................. 5
BIOSC-131 Principles of Organismal Biology, Evolution and Ecology......................... 5
CHEM-120 General College Chemistry I.............................................. 5
CHEM-121 General College Chemistry II.............................................. 5

total minimum required units  20

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 GE). 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.

major requirements       units
complete at least 4 units from:
BIOSC-102 Fundamentals of Biological Science with Laboratory.......................... 4
BIOSC-117 Human Biology with Laboratory.................................................. 4

or both

BIOSC-130 Principles of Cellular and Molecular Biology.............................. 5
and
BIOSC-131 Principles of Organismal Biology, Evolution and Ecology......................... 5

complete at least 4 units from:
CHEM-109 Introduction to Organic and Biochemistry .................................. 4
CHEM-120 General College Chemistry I.............................................. 5

plus at least 12 units from the following areas of specialization; with at least 3 units from each area.

cellular biology
BIOSC-107 Genetics and Evolution.................................................. 4
BIOSC-119 Fundamentals of Microbiology.............................................. 4
BIOSC-130 Principles of Cellular and Molecular Biology.............................. 5
BIOSC-146 Principles of Microbiology.................................................. 5

field studies
BIOSC-126 Nature Study and Conservation.............................................. 4
BIOSC-131 Principles of Organismal Biology, Evolution and Ecology......................... 5
BIOSC-161 Fundamentals of Marine Biology.............................................. 3
BIOSC-162 Fundamentals of Marine Biology with Laboratory..................................... 4
BIOSC-170 Environmental Science.............................................. 3
BIOSC-171 Environmental Science with Laboratory..................................... 4
HORT-148L California Native Plants Laboratory....................................... 1
OCEAN-101 Fundamentals of Oceanography.............................................. 3
OCEAN-102 Fundamentals of Oceanography with Laboratory.......................... 4

health
BIOSC-120 Introduction to Human Anatomy and Physiology.............................. 5
BIOSC-139 Human Anatomy.......................................................... 5
BIOSC-140 Human Physiology.......................................................... 5
NUTRI-160 Nutrition: Science and Applications............................................ 3

total minimum required units  20

Associate in science degree - Natural science
The associate in science degree in natural science 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 sciences 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 GE). 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 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 total 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 ........................................... 3
- **BIOSC-102** Fundamentals of Biological Science with Laboratory ........................................... 4
- **BIOSC-107** Genetics and Evolution ........................................... 4
- **BIOSC-116** Human Biology ........................................... 3
- **BIOSC-117** Human Biology with Laboratory ........................................... 4
- **BIOSC-119** Fundamentals of Microbiology ........................................... 4
- **BIOSC-120** Introduction to Human Anatomy and Physiology ........................................... 5
- **BIOSC-126** Nature Study and Conservation ........................................... 4
- **BIOSC-130** Principles of Cellular and Molecular Biology ........................................... 5
- **BIOSC-131** Principles of Organismal Biology, Evolution and Ecology ........................................... 5
- **BIOSC-139** Human Anatomy ........................................... 5
- **BIOSC-140** Human Physiology ........................................... 5
- **BIOSC-146** Principles of Microbiology ........................................... 5
- **BIOSC-161** Fundamentals of Marine Biology ........................................... 3
- **BIOSC-162** Fundamentals of Marine Biology with Laboratory ........................................... 4
- **BIOSC-170** Environmental Science ........................................... 3
- **BIOSC-171** Environmental Science with Laboratory ........................................... 4
- **HORT-110** Introduction to Horticulture ........................................... 4
- **HORT-148L** California Native Plants Laboratory ........................................... 1
- **NUTRI-160** Nutrition: Science and Applications ........................................... 3

### physical science
minimum of 6 units required (four of the six units must be from IGETC approved courses that include a laboratory):

- **ASTRO-119** The Visible Universe ........................................... 3
- **ASTRO-120** Elementary Astronomy ........................................... 3
- **ASTRO-128** The Universe for Beginners ........................................... 4
- **ASTRO-130** Astronomy Laboratory ........................................... 1
- **ASTRO-298** Independent Study ........................................... 0.5-3
- **CHEM-106** Chemistry for Non-Science Majors ........................................... 4
- **CHEM-108** Introductory Chemistry ........................................... 4
- **CHEM-109** Introduction to Organic and Biochemistry ........................................... 4
- **CHEM-120** General College Chemistry I ........................................... 5
- **CHEM-121** General College Chemistry II ........................................... 5
- **CHEM-226** Organic Chemistry I ........................................... 5
- **CHEM-227** Organic Chemistry II ........................................... 5
- **CHEM-298** Independent Study ........................................... 0.5-3
- **GEOG-120** Physical Geography ........................................... 3
- **GEOG-121** Physical Geography Laboratory ........................................... 1
- **GEOG-125** Introduction to Geographic Information Systems (GIS) ........................................... 3
- **GEOG-127** Introduction to Global Positioning Systems ........................................... 3
- **GEOG-128** Advanced Global Positioning Systems ........................................... 3
- **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 ........................................... 1
- **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 ........................................... 1
- **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: Heat and Electro-Magnetism ........................................... 4
- **PHYS-231** Physics for Engineers and Scientists C: Optics and Modern Physics ........................................... 4
- **PHYS-112** Fundamentals of Physical Science ........................................... 3
- **PHYS-298** Independent Study ........................................... 0.5-3

**total minimum units for the major**  18

### Certificate of achievement - Allied health
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 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 courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIOSC-139</td>
<td>Human Anatomy</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-140</td>
<td>Human Physiology</td>
<td>5</td>
</tr>
<tr>
<td>NUTRI-160</td>
<td>Nutrition: Science and Applications</td>
<td>3</td>
</tr>
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</table>

plus at least 4 units from:

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>BIOSC-119</td>
<td>Fundamentals of Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-146</td>
<td>Principles of Microbiology</td>
<td>5</td>
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plus at least 4 units from:

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CHEM-108</td>
<td>Introductory Chemistry</td>
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</tr>
<tr>
<td>CHEM-109</td>
<td>Introduction to Organic and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
</tbody>
</table>

**total minimum required units** 21

**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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>BIOSC-120</td>
<td>Introduction to Human Anatomy and Physiology</td>
<td>5</td>
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plus at least 4 units from:

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<tr>
<th>Course</th>
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<td>Fundamentals of Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-146</td>
<td>Principles of Microbiology</td>
<td>5</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>NUTRI-120</td>
<td>Sport Nutrition: Fueling the Athlete</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI-160</td>
<td>Nutrition: Science and Applications</td>
<td>3</td>
</tr>
</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.

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
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 genetical 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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Type</th>
<th>Prerequisite/Recommendation</th>
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</thead>
<tbody>
<tr>
<td>BIOSC-131</td>
<td>Principles of Organismal Biology, Evolution and Ecology</td>
<td>5</td>
<td>SC</td>
<td>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.</td>
</tr>
<tr>
<td>BIOSC-139</td>
<td>Human Anatomy</td>
<td>5</td>
<td>SC</td>
<td>90 hours lecture/72 hours laboratory per term; Recommended: BIOSC-102 and eligibility for ENGL-122 or equivalents</td>
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<tr>
<td>BIOSC-140</td>
<td>Human Physiology</td>
<td>5</td>
<td>SC</td>
<td>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</td>
</tr>
<tr>
<td>BIOSC-146</td>
<td>Principles of Microbiology</td>
<td>5</td>
<td>SC</td>
<td>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</td>
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<tr>
<td>BIOSC-150</td>
<td>Topics in Biology</td>
<td>.3-4</td>
<td>SC</td>
<td>Variable hours</td>
</tr>
<tr>
<td>BIOSC-161</td>
<td>Fundamentals of Marine Biology</td>
<td>3</td>
<td>SC</td>
<td>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-162. This course may include field trips outside of regularly scheduled class time. Not open to students who have taken Fundamentals of Marine Biology with Laboratory, BIOSC-162.</td>
</tr>
</tbody>
</table>

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

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 environs; 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 (BIOSC-161) 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.

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; eligibility for ENGL-122 or equivalents
- 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. 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-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
Broadcast communication arts

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 broadcast communication arts (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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at 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
Broadcast communication arts - Basic studio production
Broadcast communication arts - Basic writing for digital medium

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.

Program learning outcomes

major requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTDM-110</td>
<td>Digital Imaging Process and Technique I</td>
<td>1.5</td>
</tr>
<tr>
<td>BCA-120</td>
<td>Introduction to TV Studio Production</td>
<td>3</td>
</tr>
<tr>
<td>BCA-125</td>
<td>Introduction to Film Production</td>
<td>3</td>
</tr>
<tr>
<td>BCA-130</td>
<td>Intermediate TV Studio Production</td>
<td>3</td>
</tr>
<tr>
<td>BCA-140</td>
<td>History of Broadcasting and Electronic Media</td>
<td>3</td>
</tr>
<tr>
<td>BCA-165</td>
<td>Digital Editing</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCA-290</td>
<td>Film and Electronic Scriptwriting</td>
</tr>
<tr>
<td>JRNAL-110</td>
<td>Mass Media of Communication</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCA-110</td>
<td>Introduction to Radio Production</td>
</tr>
<tr>
<td>BCA-126</td>
<td>Intermediate Film Production</td>
</tr>
<tr>
<td>BCA-132</td>
<td>Advanced TV Studio Production</td>
</tr>
<tr>
<td>BCA-166</td>
<td>Intermediate Digital Editing</td>
</tr>
<tr>
<td>BCA-190</td>
<td>Topics in Broadcast Communication</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>ARTDM-110</td>
<td>Digital Imaging Process and Technique II</td>
</tr>
<tr>
<td>ARTDM-115</td>
<td>Digital Imaging Process and Technique III</td>
</tr>
<tr>
<td>ARTDM-149</td>
<td>Fundamentals of Digital Video</td>
</tr>
<tr>
<td>ARTDM-170</td>
<td>Animation and Interactivity</td>
</tr>
<tr>
<td>BCA-126</td>
<td>Intermediate Film Production</td>
</tr>
<tr>
<td>BCA-132</td>
<td>Advanced TV Studio Production</td>
</tr>
<tr>
<td>BCA-166</td>
<td>Intermediate Digital Editing</td>
</tr>
<tr>
<td>BCA-190</td>
<td>Topics in Broadcast Communication</td>
</tr>
</tbody>
</table>

plus at least 6 units from:

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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ARTDM-111</td>
<td>Digital Imaging Process and Technique II</td>
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<tr>
<td>ARTDM-115</td>
<td>Digital Imaging Process and Technique III</td>
</tr>
<tr>
<td>ARTDM-149</td>
<td>Fundamentals of Digital Video</td>
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<td>ARTDM-170</td>
<td>Animation and Interactivity</td>
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<tr>
<td>BCA-126</td>
<td>Intermediate Film Production</td>
</tr>
<tr>
<td>BCA-132</td>
<td>Advanced TV Studio Production</td>
</tr>
<tr>
<td>BCA-166</td>
<td>Intermediate Digital Editing</td>
</tr>
<tr>
<td>BCA-190</td>
<td>Topics in Broadcast Communication</td>
</tr>
<tr>
<td>BCA-298</td>
<td>Independent Study</td>
</tr>
<tr>
<td>BUSMG-191</td>
<td>Small Business Management</td>
</tr>
<tr>
<td>BUSMG-192</td>
<td>Entrepreneurship and Venture Management</td>
</tr>
<tr>
<td>BUSMK-255</td>
<td>Advertising</td>
</tr>
<tr>
<td>COMM-148</td>
<td>Performance of Literature</td>
</tr>
<tr>
<td>DRAMA-122</td>
<td>Basic Principles of Acting</td>
</tr>
<tr>
<td>DRAMA-123</td>
<td>Intermediate Principles of Acting</td>
</tr>
</tbody>
</table>
Certificate of achievement - Broadcast communication arts

This program prepares 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.

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.

required courses

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ARTDM-119</td>
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<tr>
<td>BCA-120</td>
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</tr>
<tr>
<td>BCA-123</td>
<td>3</td>
</tr>
<tr>
<td>BCA-130</td>
<td>3</td>
</tr>
<tr>
<td>BCA-140</td>
<td>3</td>
</tr>
<tr>
<td>BCA-165</td>
<td>3</td>
</tr>
<tr>
<td>FILM-180</td>
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</tr>
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</table>

plus at least 3 units from:

<table>
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<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCA-290</td>
<td>3</td>
</tr>
<tr>
<td>JRNAL-110</td>
<td>3</td>
</tr>
</tbody>
</table>

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.
Broadcast communication arts

required courses  units
BCA-125  Introduction to Film Production  3
BCA-126  Intermediate Film Production  3
BCA-140  History of Broadcasting and Electronic Media  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  Occupational Work Experience Education  1-4
COOP-180  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  units
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 and Electronic Media  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  Occupational Work Experience Education  1-4
COOP-180  Internship for Occupational Work Experience Education  1-4

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  units
BCA-140  History of Broadcasting and Electronic Media  3
BCA-290  Film and Electronic Scriptwriting  3
FILM-291  Film and TV Scriptwriting-Intermediate  3
FILM-294  Film and TV Scriptwriting-Advanced  3

plus at least 3 units from:
BCA-190  Topics in Broadcast Communication Arts  0.3-4
BCA-298  Independent Study  0.5-3
COMM-148  Performance of Literature  3
COOP-170  Occupational Work Experience Education  1-4
COOP-180  Internship for Occupational Work Experience Education  1-4
ENGL-151  The Short Story  3
JRNAL-110  Mass Media of Communication  3

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 broadcast 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 Film Production
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
In this course, students produce short, single-camera digital videos by applying introductory techniques such as camera operation and lens selection, audio recording, script development and visual concepts, lighting setup, and basic digital editing. CSU

BCA-126  Intermediate Field Production
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: BCA-125 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
In this course, students produce intermediate level, single-camera digital videos that utilize mixed soundtracks, sophisticated lighting schemes, sync sound, polished editing and the use of visual metaphors. 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 and Electronic Media
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course introduces the history, structure, function, economics, content and evolution of radio, television, film, the Internet, and new media, including traditional and mature formats. The social, political, regulatory, ethical and occupational impact of the electronic media are also studied. CSU, UC

BCA-165  Digital Editing
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Note: Same as FILM-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

BCA-166  Intermediate Digital Editing
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: BCA-165 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Same as ARTDM-146 and FILM-166
This intermediate course is designed to advance the student’s non-linear digital editing skills to a professional level. The emphasis will be on the utilization of software programs such as Adobe Premiere Pro. CSU

BCA-190  Topics in Broadcast Communication Arts
3-4 units  SC
- Variable hours
A supplemental course in broadcast communication arts to provide a study of current concepts and problems in broadcast communication arts. Specific topics will be announced in the schedule of classes. CSU

BCA-260  Ethnic Images in United States (U.S.) Television
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course will evaluate and explore various cultures represented in U.S. television: African American, American Indian, Asian American, Hispanic, and European American. It will examine the demographic, racial, political, and economic factors that determine the cultural diversity of programming and analyze similarities and differences in the way various cultures are portrayed. Issues specific to the world of television including broadcasting, cable, and streaming will be examined. The course will focus on how television communicates ideas and stimulates emotional responses, as well as the importance of Federal Communication Commission (FCC) regulations and marketing practices. CSU, UC
BCA-290  Film and Electronic Scriptwriting
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Same as FILM-290
This is a beginning film and digital media writing class. The course will focus on the planning, outlining and structuring of an original feature-length fiction screenplay as well as short-form digital formats such as commercials, news, product introductions, sports and reality programming. The student will study film and digital media terms and formats, work with treatments, scenarios and shooting scripts, analyze film and television clips, shorts, 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

BCA-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

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

BUSINESS – BUS

Michael Norris, Interim Dean
Business Division
Math Building, Room 267

Possible career opportunities - Business management and leadership
Careers in business management/leadership assist administrative functions through team work to conduct organizational studies, design systems and procedures, conduct measurement analyses, and prepare operations and procedures reports. Some careers also involve assessing staff requirements, in hiring, training new employees, or participating in human resources processes.

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 customers 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, of commercial, industrial, or residential property. Careers may include working with homeowner associations, rented 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.
Associate in science degree
Business administration

Certificates of achievement
Advanced general business
Business - transfer
Business marketing
General business
Management and leadership studies
Real estate
Small business management/entrepreneurship
Wealth management

Certificate of accomplishment
Business essentials

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 GE). 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.

major requirements

<table>
<thead>
<tr>
<th>Course</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>
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</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-181 Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-186 Financial Accounting</td>
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plus at least 9 units from:

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<tbody>
<tr>
<td>BUS-105 Business Etiquette</td>
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</tr>
<tr>
<td>BUS-115 Business E-Mail, Social Media, and Digital Communication</td>
<td>1</td>
</tr>
<tr>
<td>BUS-161 Personal Money Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS-209 International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-240 Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BUS-255 Business Communications II</td>
<td>3</td>
</tr>
<tr>
<td>BUS-261 Investments</td>
<td>3</td>
</tr>
<tr>
<td>BUS-291 Wills, Trusts, and Estate Planning</td>
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</tr>
<tr>
<td>BUSAC-185 QuickBooks Accounting for Business I</td>
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<tr>
<td>BUSAC-187 Managerial Accounting</td>
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<tr>
<td>BUSAC-188 QuickBooks Accounting for Business II</td>
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<td>BUSAC-285 Federal Income Taxes - Individuals</td>
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<td>BUSIM-145 Business Spreadsheet Applications</td>
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<td>BUSMG-121 Practices and Concepts of Supervision</td>
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<td>BUSMG-131 Gender Issues in Management</td>
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<td>BUSMG-132 Human Resource Management</td>
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<td>BUSMG-191 Small Business Management</td>
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<td>BUSMG-192 Entrepreneurship and Venture Management</td>
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</tr>
<tr>
<td>BUSMG-226 Group Behavior and Leadership</td>
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<tr>
<td>BUSMK-158 Professional Selling</td>
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<td>BUSMK-255 Advertising</td>
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<tr>
<td>BUSMK-256 Marketing</td>
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<td>BUSMK-257 Applied Advertising and Promotion</td>
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<tr>
<td>RE-160 Real Estate Principles</td>
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<tr>
<td>RE-161 Legal Aspects of Real Estate</td>
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<tr>
<td>RE-162 Real Estate Appraisal I</td>
<td>3</td>
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<tr>
<td>RE-163 Real Estate Practice</td>
<td>3</td>
</tr>
<tr>
<td>RE-164 Real Estate Finance</td>
<td>3</td>
</tr>
<tr>
<td>RE-165 Real Estate Economics</td>
<td>3</td>
</tr>
<tr>
<td>RE-166 Escrow Procedures</td>
<td>3</td>
</tr>
<tr>
<td>RE-167 Real Estate Property Management</td>
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</tr>
</tbody>
</table>

Associate in science 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.
Business

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 GE or IGETC requirements. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

required courses

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<td>BUSAC-186</td>
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<tr>
<td>BUSAC-187*</td>
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<td>ECON-220*</td>
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<td>ECON-221*</td>
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plus at least 3 units from**: Statistics:

<table>
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<th>Units</th>
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<tbody>
<tr>
<td>BUS-240*</td>
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Mathematics:

<table>
<thead>
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<tbody>
<tr>
<td>MATH-181*</td>
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</tr>
<tr>
<td>MATH-192*</td>
<td>5</td>
</tr>
</tbody>
</table>

plus at least 5 units from: any course not used above or:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-109</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250</td>
<td>3</td>
</tr>
<tr>
<td>BUSIM-145</td>
<td>2</td>
</tr>
<tr>
<td>COMSC-100</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100L</td>
<td>1</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-109</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250</td>
<td>3</td>
</tr>
<tr>
<td>BUS-294</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120</td>
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</table>

plus at least 12 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Any BUS course not listed in the core requirements</td>
<td>3</td>
</tr>
<tr>
<td>Any BUSAC course not listed in the core requirements</td>
<td>3</td>
</tr>
<tr>
<td>Any BUSMG course not listed in the core requirements</td>
<td>3</td>
</tr>
<tr>
<td>Any BUSMK course not listed in the core requirements</td>
<td>3</td>
</tr>
<tr>
<td>Any RE course not listed in the core requirements</td>
<td>3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-186</td>
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</tr>
<tr>
<td>BUSAC-187*</td>
<td>4</td>
</tr>
<tr>
<td>ECON-220*</td>
<td>3</td>
</tr>
<tr>
<td>ECON-221*</td>
<td>3</td>
</tr>
</tbody>
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plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-182*</td>
<td>4</td>
</tr>
<tr>
<td>MATH-192*</td>
<td>5</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-240*</td>
<td>3</td>
</tr>
<tr>
<td>MATH 142*</td>
<td>4</td>
</tr>
</tbody>
</table>
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.

required courses
BUS-109 Introduction to Business ........................................... 3
BUS-240 Statistics ..................................................................... 3
BUS-250 Business Communications I ..................................... 3
BUS-294 Business Law .............................................................. 3
BUSMG-120 Introduction to Management Studies .................. 3
BUSMK-256 Marketing ............................................................. 3

plus at least 6 units from:
BUS-209 International Business ................................................ 3
BUSMK-158 Professional Selling ............................................. 3
BUSMK-255 Advertising ........................................................... 3
Any RE course ....................................................................... 3

total minimum required units .............................................. 24

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

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.

required courses
BUS-109 Introduction to Business ........................................... 3
BUS-250 Business Communications I ..................................... 3
BUS-294 Business Law .............................................................. 3
BUSMG-120 Introduction to Management Studies .................. 3
BUSMG-121 Practices and Concepts of Supervision ............... 3
BUSMG-131 Gender Issues in Management ............................ 3
BUSMG-132 Human Resource Management .......................... 3
BUSMG-226 Group Behavior and Leadership ....................... 3

total minimum required units .............................................. 24

*Course substitutions for program requirements require department chairperson approval. Substitutions are limited to 6 units outside the management department.

Certificate of achievement - Real estate
To earn a certificate of achievement in real estate, students must complete each course used to meet a certificate requirement with a “C” grade or higher. All required courses are available in the evening. 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 I ..................................... 3
BUS-294 Business Law .............................................................. 3
BUSMG-120 Introduction to Management Studies ............... 3
RE-160 Real Estate Principles ............................................... 3
RE-163 Real Estate Practice .................................................... 3

total minimum required units .............................................. 12

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.

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

total minimum required units .............................................. 12

*Course substitutions for program requirements require department chairperson approval. Substitutions are limited to 6 units outside the management department.
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>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-109 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250 Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS-261 Investments</td>
<td>3</td>
</tr>
<tr>
<td>BUS-294 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-285 Federal Income Taxes - Individuals</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120 Introduction to Management Studies</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-191 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-192 Entrepreneurship and Venture Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS-116 International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-217 QuickBooks Accounting for Business I</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSIM-145 Business Spreadsheet Applications</td>
<td>2</td>
</tr>
<tr>
<td>BUSMG-121 Practices and Concepts of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-132 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMK-256 Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 6 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE-161 Legal Aspects of Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>RE-162 Real Estate Appraisal I</td>
<td>3</td>
</tr>
<tr>
<td>RE-163 Real Estate Finance</td>
<td>3</td>
</tr>
<tr>
<td>RE-165 Real Estate Economics</td>
<td>3</td>
</tr>
<tr>
<td>RE-166 Escrow Procedures</td>
<td>3</td>
</tr>
<tr>
<td>RE-167 Real Estate Property Management</td>
<td>3</td>
</tr>
</tbody>
</table>

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

plus at least 6 units from:

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

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-181 Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-186 Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUSMG-191 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-192 Entrepreneurship and Venture Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS-209 International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-185 QuickBooks Accounting for Business I</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSIM-145 Business Spreadsheet Applications</td>
<td>2</td>
</tr>
<tr>
<td>BUSMG-121 Practices and Concepts of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-132 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMK-256 Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-109 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-161 Personal Money Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250 Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS-261 Investments</td>
<td>3</td>
</tr>
<tr>
<td>BUS-294 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUS-295 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-285 Federal Income Taxes - Individuals</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120 Introduction to Management Studies</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-192 Entrepreneurship and Venture Management</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-181 Applied Accounting</td>
<td>3</td>
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<tr>
<td>BUSAC-186 Financial Accounting</td>
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<td>BUSMG-191 Small Business Management</td>
<td>3</td>
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<tr>
<td>BUSMG-192 Entrepreneurship and Venture Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS-209 International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-185 QuickBooks Accounting for Business I</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSIM-145 Business Spreadsheet Applications</td>
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<tr>
<td>BUSMG-121 Practices and Concepts of Supervision</td>
<td>3</td>
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<tr>
<td>BUSMG-132 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMK-256 Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>
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
This course is 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 and eligibility 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

This course is an introduction to concepts, methods, and models employed in reasoning with numbers and in presenting cogent statistical arguments or solutions. Students are introduced to organizational, analytical and inferential 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. Performing Analysis of Variance (ANOVA), estimating simple and multiple regressions and making inference from such analysis is a major theme of this course. The use of spreadsheet-based software to compute statistics in large-data applications is an important part of lab work (see counselor) UC - see counselor

BUS-250  Business Communications I
3 units   SC
- 54 hours lecture per term
- Recommended: BUS-101 and eligibility for ENGL-122 or equivalents

This course helps 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 business communications, including sales letters, news releases, proposals, and research reports; to use advanced technology to communicate, including email and social media; and to prepare and deliver short, professional 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, BUS-250 and eligibility for ENGL-122 or equivalents

This is 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, news releases, proposals, and research reports; to use advanced technology to communicate, including mailing lists, virtual chat rooms, basic Web site development, and audio and videoconferencing 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

This is a comprehensive course that provides an overview of financial markets and financial assets such as stocks, bonds and mutual funds, develops a basic understanding of how to value different financial assets and select investment opportunities, and 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
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. C-ID BUS 125, 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

Michael Norris, Interim 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 learning outcomes

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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 - Accounting

This technical 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 the courses in this program demonstrates commitment to the field of accounting, provides comprehensive preparation for employment in accounting-related occupations, and meets a portion of the educational requirements for the California CPA exam (For additional requirements please go to www.dca.ca.gov/cba).

This degree is not recommended for transfer students and DVC accounting students in this program who intend to transfer should 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 GE). General Education Option 1 (DVC General Education) does not meet requirements for most transfer institutions.

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 seven years of the degree date.

major requirements  units
BUSBAC-186  Financial Accounting.................................4
BUSBAC-187  Managerial Accounting...............................4
BUSBIM-145  Business Spreadsheet Applications...............2

plus at least 3 units from:
BUSB-240  Business Statistics.......................................3
BUSB-250  Business Communications I..........................3
BUSBAC-182  Computer Income Tax Return Preparation - Individuals ................................................1.5
BUSBAC-185  QuickBooks Accounting for Business I........1.5
BUSBAC-188  QuickBooks Accounting for Business II.......1.5
BUSBAC-190  Payroll Accounting ....................................1.5
COOP-170  Occupational Work Experience Education....1-4
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. At least 25 percent of the units must be completed at DVC. 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>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-166 Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUSAC-187 Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUSIM-145 Business Spreadsheet Applications</td>
<td>2</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-240 Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250 Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-182 Computer Income Tax Return Preparation - Individuals</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSAC-185 QuickBooks Accounting for Business I</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSAC-188 QuickBooks Accounting for Business II</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSAC-190 Payroll Accounting</td>
<td>1.5</td>
</tr>
<tr>
<td>COOP-170 Occupational Work Experience Education</td>
<td>1-4</td>
</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 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. At least 25 percent of the units must be completed at DVC. 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>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-181 Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-186 Financial Accounting</td>
<td>4</td>
</tr>
</tbody>
</table>

plus at least 8-9 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-250 Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-182 Computer Income Tax Return Preparation - Individuals</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSAC-185 QuickBooks Accounting for Business I</td>
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</tr>
<tr>
<td>BUSAC-188 QuickBooks Accounting for Business II</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSAC-190 Payroll Accounting</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSIM-145 Business Spreadsheet Applications</td>
<td>2</td>
</tr>
<tr>
<td>COOP-170 Occupational Work Experience Education</td>
<td>1-4</td>
</tr>
</tbody>
</table>

total minimum required units 28
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. All coursework required for the certificate must be completed within seven years of the certificate date.

required courses

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-186</td>
<td>4</td>
</tr>
<tr>
<td>BUSAC-187</td>
<td>4</td>
</tr>
<tr>
<td>BUSIM-145</td>
<td>2</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>BUS-240</td>
<td>3</td>
</tr>
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<td>BUS-250</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-182</td>
<td>1.5</td>
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<tr>
<td>BUSAC-190</td>
<td>1.5</td>
</tr>
<tr>
<td>COOP-170</td>
<td>1.5</td>
</tr>
</tbody>
</table>

total minimum required units 13

BUSAC-150 Topics in Business Accounting

.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-185 "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; 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: 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.

This is an introductory course in the application of basic accounting knowledge and theory in QuickBooks software. The course content 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
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 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 I
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 upper-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 and eligibility for ENGL-122 or equivalents
- 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 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
- 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 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

Michael Norris, Interim 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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.

required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</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>BUS-250</td>
<td>Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-181</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUSIM-111</td>
<td>Keyboarding II: Intermediate Word Processing and Skill Development</td>
<td>3</td>
</tr>
<tr>
<td>BUSIM-140</td>
<td>Database Records and Information Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSIM-145</td>
<td>Business Spreadsheet Applications</td>
<td>2</td>
</tr>
<tr>
<td>BUSIM-211</td>
<td>Office Procedures and Technology</td>
<td>3</td>
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</tbody>
</table>

elective units determined in consultation with certificate advisor

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-9</td>
</tr>
</tbody>
</table>

total minimum required units

29

Certificate participants must also meet established keyboarding and ten-key skill levels.

Keyboarding speed: 50 wpm; 10-Key: 120 kspm
Certificate of accomplishment -
Office professional essentials

This certificate of accomplishment provides basic business knowledge and office assistant skills for obtaining entry-level employment in the business office.

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 classes.

required courses units
BUS-101 Business English ............................................ 3
BUS-103 Applied Business Mathematics ................................ 3
BUSIM-110 Keyboarding I: Beginning Keyboarding/Introduction to Word Processing ...................................... 3

total minimum required units 9

BUSIM-025 ESL Keyboarding
1 unit P/NP
• 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 SC
• Non degree applicable
• Variable hours

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

BUSMGT-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’ principal 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 and eligibility for ENGL-122 or equivalents
This course will provide theoretical foundations and practical experiences with group behavior and leadership. Emphasis will be placed on self-awareness in a group setting. 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 and eligibility for ENGL-122 or equivalents
This is a course on the theory and practice of personal selling with a focus on relationship marketing and a concentration on the selling process. This course includes an emphasis on sales strategies, techniques, settings, and skills development in product knowledge, customer analysis, prospecting, presenting, and closing the sale. Team sales presentation are also addressed. 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 and eligibility for ENGL-122 or equivalents
This course is an introduction to marketing functions involved in facilitating the exchange of goods and services. It presents a 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 will also be 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-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-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 the state educational requirements for brokers license

This course is a comprehensive and practical presentation of the knowledge necessary to be effective in the real estate industry. Topics include: techniques of prospecting, listing, selling, financing, purchase agreements, escrow, exchange, and property management. CSU
Real Estate Finance

3 units SC
• 54 hours lecture per term
• Recommended: RE-160 and eligibility for ENGL-122 or equivalents
• Note: Applies toward the state educational requirements for the sales or broker's license

This course is an overview of real estate finance including conventional, Federal Housing Authority (FHA), Veterans Administration (VA) and non-institutional loans. Other topics covered are construction, investment, and creative financing. CSU

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

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

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

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 and Life Planning

3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

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
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

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 MATH-090E or MATH-090SP 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 MATH-090E or MATH-090SP 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, aldehydes, 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 learning outcomes**
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

**Associate in arts degree**
Mandarin Chinese

**Certificate of achievement**
Mandarin Chinese

**Associate in arts degree - Mandarin Chinese**
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 GE). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a pass/no pass 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.

**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:**

| CHIN 120 | First Term Mandarin Chinese | 5 |
| CHIN 121 | Second Term Mandarin Chinese | 5 |
| CHIN 220 | Third Term Mandarin Chinese | 5 |
| CHIN 221 | Fourth Term Mandarin Chinese | 5 |

**total minimum required units**

15

**CHIN-120 First Term Mandarin Chinese**
5 units  
*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-121 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-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

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 assistant's 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

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COLLOQUIA – COLQY

Colloquia  
.5-3 units  SC  
• Variable hours

A colloquium is 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
COMMUNICATION STUDIES – COMM

Formerly Speech - SPCH

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

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Certificate of achievement
Communication studies

Associate in arts 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 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 communication studies 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**

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<td>JRNAL-120</td>
<td>Newswriting Techniques</td>
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</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**

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DIABLO VALLEY COLLEGE CATALOG 2014-2015 chapter four PROGRAM/COURSE DESCRIPTIONS

COMMUNICATION STUDIES – COMM

Formerly Speech - SPCH

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

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DIABLO VALLEY COLLEGE CATALOG 2014-2015 chapter four PROGRAM/COURSE DESCRIPTIONS
Communication studies

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. C-ID COMM 110, 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 COMM 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 improvement of 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, 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. C-ID COMM 130, CSU, UC

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

This course is 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 work. C-ID COMM 140, 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

Introduction to performance studies; analysis, appreciation, and application of theories of interpretive performance of various forms of literature including poetry, prose, and drama (plays, scripts and screenplays). C-ID COMM 170, 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-163 Forensics – Speech and Debate
1.5-4 units SC
• May be repeated three times
• Variable hours
• Recommended: Eligibility for ENGL-122 or equivalent
• Formerly SPCH-160, SPCH-161, SPCH-162, COMM-160, COMM-161, COMM-162

This course prepares students to participate in intercollegiate speech and debate tournaments and/or community events. Students will research, write, and practice speeches. Students will perform speeches at competitive/community events. 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

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

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

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 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. Other electives and course substitutions not listed below are possible with department chairperson approval.
Computer information systems

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>core courses</td>
<td></td>
</tr>
<tr>
<td>CIS-115</td>
<td>2</td>
</tr>
<tr>
<td>CIS-116</td>
<td>2</td>
</tr>
<tr>
<td>CIS-118</td>
<td>2</td>
</tr>
<tr>
<td>plus at least 2 units from:</td>
<td></td>
</tr>
<tr>
<td>CIS-100</td>
<td>2</td>
</tr>
<tr>
<td>CIS-101</td>
<td>2</td>
</tr>
<tr>
<td>plus at least 4 units from:</td>
<td></td>
</tr>
<tr>
<td>CIS-117</td>
<td>2</td>
</tr>
<tr>
<td>CIS-119</td>
<td>2</td>
</tr>
<tr>
<td>COMSC-138</td>
<td>2</td>
</tr>
<tr>
<td>Basic for Applications (VBA)</td>
<td>2</td>
</tr>
<tr>
<td>Core courses units subtotal</td>
<td>12</td>
</tr>
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</table>

Choose one of the following four technical specialization areas:

<table>
<thead>
<tr>
<th>database management - required courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-107 Web Database with Dreamweaver</td>
</tr>
<tr>
<td>CIS-117 Microsoft Access - Comprehensive</td>
</tr>
<tr>
<td>CIS-160 Introduction to MySQL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>project management - required courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-180 Introduction to Project Management</td>
</tr>
<tr>
<td>CIS-181 Project Management Fundamentals/PMI PMP Preparation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>project management - recommended electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-185 Microsoft Project</td>
</tr>
<tr>
<td>CIS-186 Microsoft Visio</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>web graphics - required courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-130 Adobe Photoshop Elements</td>
</tr>
<tr>
<td>CIS-131 Adobe Flash - Comprehensive</td>
</tr>
<tr>
<td>CIS-132 Adobe Premiere Elements - Comprehensive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>web graphics - recommended electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-133 Developing Video Content for the Web</td>
</tr>
<tr>
<td>CIS-134 Using Apple iLife</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>web technology - required courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-105 Introduction to Web Design</td>
</tr>
<tr>
<td>CIS-106 Adobe Dreamweaver - Comprehensive</td>
</tr>
<tr>
<td>CIS-107 Web Database with Dreamweaver</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>web technology - recommended electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-117 Microsoft Access - Comprehensive</td>
</tr>
<tr>
<td>CIS-160 Introduction to MySQL</td>
</tr>
<tr>
<td>COMSC-195 WWW Publishing with HTML</td>
</tr>
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</table>

<table>
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<tr>
<th>Certificate of achievement - Computer information systems - core</th>
</tr>
</thead>
<tbody>
<tr>
<td>required courses</td>
</tr>
<tr>
<td>CIS-115 Microsoft Word - Comprehensive</td>
</tr>
<tr>
<td>CIS-116 Microsoft Excel - Comprehensive</td>
</tr>
<tr>
<td>CIS-118 Microsoft PowerPoint - Comprehensive</td>
</tr>
</tbody>
</table>

| plus at least 2 units from: |
| CIS-100 Microsoft Windows - Comprehensive                             | 2 |
| CIS-101 Apple Mac Operating System                                     | 2 |

<table>
<thead>
<tr>
<th>Certificate of achievement - Computer information systems - database management</th>
</tr>
</thead>
<tbody>
<tr>
<td>required courses</td>
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<tr>
<td>CIS-107 Web Database with Dreamweaver</td>
</tr>
<tr>
<td>CIS-115 Microsoft Word - Comprehensive</td>
</tr>
<tr>
<td>CIS-116 Microsoft Excel - Comprehensive</td>
</tr>
<tr>
<td>CIS-119 Microsoft Access - Comprehensive</td>
</tr>
<tr>
<td>CIS-118 Microsoft PowerPoint - Comprehensive</td>
</tr>
<tr>
<td>CIS-119 Microsoft Outlook - Comprehensive</td>
</tr>
<tr>
<td>CIS-160 Introduction to MySQL</td>
</tr>
<tr>
<td>COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA)</td>
</tr>
</tbody>
</table>

| total minimum required units | 12 |

<table>
<thead>
<tr>
<th>Certificate of achievement - Computer information systems - project management</th>
</tr>
</thead>
<tbody>
<tr>
<td>required course</td>
</tr>
<tr>
<td>CIS-115 Microsoft Word - Comprehensive</td>
</tr>
<tr>
<td>CIS-116 Microsoft Excel - Comprehensive</td>
</tr>
<tr>
<td>CIS-118 Microsoft PowerPoint - Comprehensive</td>
</tr>
<tr>
<td>CIS-180 Introduction to Project Management</td>
</tr>
<tr>
<td>CIS-181 Project Management Fundamentals/PMI PMP Preparation</td>
</tr>
</tbody>
</table>

| plus at least 2 units from: |
| CIS-100 Microsoft Windows - Comprehensive                                     | 2 |
| CIS-101 Apple Mac Operating System                                            | 2 |

<table>
<thead>
<tr>
<th>Certificate of achievement - Computer information systems - project management</th>
</tr>
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<tbody>
<tr>
<td>required course</td>
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<tr>
<td>CIS-117 Microsoft Access - Comprehensive</td>
</tr>
<tr>
<td>CIS-119 Microsoft Outlook - Comprehensive</td>
</tr>
<tr>
<td>COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA)</td>
</tr>
</tbody>
</table>

| total minimum required units | 18 |

DIABLO VALLEY COLLEGE CATALOG 2014-2015
## Computer Information Systems

### Certificates of Accomplishment

#### Computer Information Systems - Database Management

**Required Courses**
- CIS-107: Web Database with Dreamweaver
- CIS-117: Microsoft Access - Comprehensive
- CIS-160: Introduction to MySQL

**Total Minimum Required Units**: 6

#### Computer Information Systems - Project Management

**Required Courses**
- CIS-180: Introduction to Project Management
- CIS-181: Project Management Fundamentals
- PMI PMP Preparation

**Total Minimum Required Units**: 6

#### Computer Information Systems - Web Technology

**Required Courses**
- CIS-105: Introduction to Web Design
- CIS-106: Adobe Dreamweaver - Comprehensive
- CIS-107: Web Database with Dreamweaver
- CIS-115: Microsoft Word - Comprehensive
- CIS-116: Microsoft Excel - Comprehensive
- CIS-118: Microsoft PowerPoint - Comprehensive

**Total Minimum Required Units**: 18

#### Web Graphics - Recommended Electives

- CIS-133: Developing Video Content for the Web
- CIS-134: Using Apple iLife

**Total Minimum Required Units**: 6

#### Web Technology - Recommended Electives

- CIS-117: Microsoft Access - Comprehensive
- CIS-160: Introduction to MySQL
- COMSC-195: WWW Publishing with HTML

**Total Minimum Required Units**: 6
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
• 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-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-104 Introduction to Microsoft Access
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 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-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-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-104 Introduction to Microsoft Access
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 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-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-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-130 Adobe Photoshop Elements
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 helps students to develop proficiency in Adobe Photoshop Elements, it covers acquiring, organizing, fixing, enhancing and sharing images. 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

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

COMPUTER NETWORK TECHNOLOGY – CNT

These CNT-courses prepare students for a career path in computer network technologies. These courses teach terminology and provide hands-on laboratory experience with operating systems and network devices. These courses begin to prepare the student for popular vendor certifications such as MCSE, MCSA, MSDBA, CCNA, CCNP, CCDA, CCDP, and copper/fiber cabling to name a few.

Michael Norris, Interim Dean
Math and Computer Sciences Division
Math Building, Room 267

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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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.
**Computer network technology**

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-250 Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>CNT-105 Computer Networking Hardware/Software</td>
<td>3</td>
</tr>
<tr>
<td>CNT-114 Microsoft Windows Operating System Essentials/Administration</td>
<td>3</td>
</tr>
<tr>
<td>CNT-117 Implementing Microsoft Windows Directory Services</td>
<td>3</td>
</tr>
<tr>
<td>CNT-125 Introduction to Virtualization Technology</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100 Introduction to Computers and Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100L Introduction to Computer Software</td>
<td>1</td>
</tr>
<tr>
<td>COMTC-110 Introduction to Computer Hardware/Software</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-110 Elementary Physics</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 6 units from:**
- CHEM-108 Introductory Chemistry | 4 |
- CNT-103 Voice, Video and Network Cabling | 1 |
- CNT-116 Implementing Windows Server Enterprise | 3 |
- CNT-118 Implementing a Microsoft Windows | 3 |
- CNT-138 Network Infrastructure | 3 |
- CNT-148 Network Security and Ethical Hacking | 3 |
- COMSC-121 Database Administration | 4 |

**total minimum required units** 34

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### 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 Policy 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
- Recommended: CNT-114 or equivalent
- Note: Refer to course schedule for specific Exchange Server version. Students may petition to repeat this course when software or hardware is changed

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 multi-site 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
- Note: Students may petition to repeat this course when software or hardware is changed

Students will learn to analyze computers and networks for vulnerabilities and to preserve information for forensic investigation. Students will learn about laws pertaining to computer and network forensic investigation and 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

COMPUTER SCIENCE – COMSC

The computer science department offers courses in three general areas, each targeted to serve students with specific needs:

1. 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)

2. Computer science transfer students planning to major in computer science or computer engineering at a four-year school (COMSC-110, 210, 255, 260)

3. Information systems (programming) professionals who are seeking to update their skills, (COMSC-171, 255, 256, 257)
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 learning outcomes

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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

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.

- COMSC-110 Introduction to Programming...............4
- COMSC-165 Advanced Programming with C and C++......4
- in addition, the student must complete either:
  - COMSC-200 Object Oriented Programming C++........4
  or
  - COMSC-255 Programming with Java....................4
  - COMSC-256 Advanced Java Programming.................4

total minimum required units 20

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.

- COMSC-110 Introduction to Programming...............4
- COMSC-165 Advanced Programming with C and C++......4
- COMSC-200 Object Oriented Programming C++............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.

- COMSC-110 Introduction to Programming...............4
- COMSC-255 Programming with Java....................4
- COMSC-256 Advanced Java Programming.................4

total minimum required units 12
Computer science

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.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMSC-110 Introduction to Programming</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-165 Advanced Programming with C and C++</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-260 Assembly Language Programming/Computer Organization</td>
<td>4</td>
</tr>
<tr>
<td>total minimum required units</td>
<td>12</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMSC-110 Introduction to Programming</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-255 Programming with Java</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-257 Mobile and Enterprise Java Programming</td>
<td>4</td>
</tr>
<tr>
<td>total minimum required units</td>
<td>12</td>
</tr>
</tbody>
</table>

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 standalone 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.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT-105 Computer Networking Hardware/Software</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100 Introduction to Computers and Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100L Introduction to Computer Software</td>
<td>1</td>
</tr>
<tr>
<td>COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA)</td>
<td>2</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT-114 Microsoft Windows Operating System Essentials/Administration</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-110 Introduction to Programming</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-171 Introduction to UNIX and Linux</td>
<td>2</td>
</tr>
<tr>
<td>COMSC-172 UNIX and Linux Administration</td>
<td>2.5</td>
</tr>
<tr>
<td>total minimum required units</td>
<td>12</td>
</tr>
</tbody>
</table>

COMSC-100 Introduction to Computers and Information Systems

3 units  
- 54 hours lecture/18 hours laboratory per term  
- Co-requisite: COMSC-100L or equivalent

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, information processing systems, and computer networking. 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  
- 54 hours laboratory per term

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-090E or MATH-090SP or equivalent
- Recommended: COMSC-100 or equivalent
- Note: Credit by examination option available. See schedule of classes for programming language presented.

This course introduces students to programming concepts 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

This course is an extension of COMSC-110, allowing students to take the programming language portion of COMSC-110 in another language (C++ or Java). COMSC-110X offers this opportunity, in a compare and contrast context, without repeating the programming concepts taught in COMSC-110. 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: Refer to schedule of classes for specific Oracle and SQLServer versions. Students may petition to repeat this course when software or hardware is changed.

This course covers the creation and maintenance of databases and tables. It also covers storage, retrieval and manipulation of data. Both Oracle and Microsoft SQLServer are covered, including Structured Query Language (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: Refer to class schedule for specific Oracle and SQLServer versions. Students may petition to repeat this course when software or hardware is changed.

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 Structured Query Language (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: Credit by examination option available. See schedule of classes for programming language presented.

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 lists, queues, stacks, 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
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
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
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, 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-256 Advanced Java Programming
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Recommended: COMSC-255 or equivalent
This course will cover advanced topics in Java programming including multithreading, exception handling, serialization, reflection, model view controller architecture, java beans, servlets and database connectivity. CSU, UC

COMSC-257 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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 required for the certificate. Certificate requirements are available in the evening, day and on weekends.
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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMTC-110</td>
<td>Introduction to Computer Hardware/Software</td>
<td>4</td>
<td>54 hours lecture/54 hours laboratory per term</td>
<td>Note: Students may petition to repeat this course when software or hardware is changed. 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</td>
</tr>
<tr>
<td>COMTC-118</td>
<td>Introduction to Operating Systems</td>
<td>4</td>
<td>54 hours lecture/54 hours laboratory per term</td>
<td>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</td>
</tr>
<tr>
<td>CNT-105</td>
<td>Computer Networking Hardware/Software</td>
<td>3</td>
<td>Variable hours</td>
<td>SC</td>
</tr>
<tr>
<td>CNT-114</td>
<td>Microsoft Windows Operating System</td>
<td>3</td>
<td></td>
<td>Variable hours</td>
</tr>
<tr>
<td>COMTC-150</td>
<td>Topics in Computer Service</td>
<td>3-4</td>
<td>SC</td>
<td>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</td>
</tr>
</tbody>
</table>

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 learning outcomes

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.
**Associate in science degree**

**Construction**

**Specializations:**
- Construction and building inspection
- Construction and supervision and superintendency
- Construction management

**Certificates of achievement**

- Construction and building inspection
- Construction and supervision and superintendency
- Construction management

**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 a 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 6 (CSU GE).

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 and building inspection specialization**

**Construction and supervision and superintendency specialization**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-114 Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>CONST-124 Construction Details and Specifications</td>
<td>3</td>
</tr>
<tr>
<td>CONST-170 Fundamentals of Building Inspection</td>
<td>3</td>
</tr>
<tr>
<td>CONST-181 Building Code Interpretation: Non-Structural</td>
<td>3</td>
</tr>
<tr>
<td>CONST-182 Building Code Interpretation: Structural</td>
<td>3</td>
</tr>
<tr>
<td>CONST-183 Title 24: Energy Conservation Codes</td>
<td>3</td>
</tr>
<tr>
<td>BUS-101 Business English</td>
<td>3</td>
</tr>
<tr>
<td>BUSM-120 Introduction to Management Studies</td>
<td>3</td>
</tr>
<tr>
<td>BUSM-121 Practices and Concepts of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>CONST-114 Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>CONST-116 Plane Surveying</td>
<td>3</td>
</tr>
<tr>
<td>CONST-124 Construction Details and Specifications</td>
<td>3</td>
</tr>
<tr>
<td>CONST-244 Estimating - Residential</td>
<td>3</td>
</tr>
<tr>
<td>CONST-245 Estimating - Commercial</td>
<td>3</td>
</tr>
<tr>
<td>CONST-273 Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>CONST-276 Legal Aspects of the Construction Industry</td>
<td>3</td>
</tr>
</tbody>
</table>

**Construction management specialization**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-244 Architectural Practice and Working Drawings</td>
<td>3</td>
</tr>
<tr>
<td>BUS-101 Business English</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100 Introduction to Computers and Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-100L Introduction to Computer Software</td>
<td>1</td>
</tr>
<tr>
<td>CONST-135 Construction Processes (Residential)</td>
<td>4</td>
</tr>
<tr>
<td>CONST-136 Construction Processes (Commercial)</td>
<td>4</td>
</tr>
<tr>
<td>CONST-144 Materials of Construction</td>
<td>3</td>
</tr>
<tr>
<td>CONST-244 Estimating - Residential</td>
<td>3</td>
</tr>
<tr>
<td>CONST-273 Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>CONST-276 Legal Aspects of the Construction Industry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-120 Intermediate Algebra</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-110 Elementary Physics</td>
<td>3</td>
</tr>
</tbody>
</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.
Construction

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>
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<th>Course Title</th>
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<tbody>
<tr>
<td>CONST-114</td>
<td>Blueprint Reading</td>
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</tr>
<tr>
<td>CONST-124</td>
<td>Construction Details and Specifications</td>
<td>3</td>
</tr>
<tr>
<td>CONST-170</td>
<td>Fundamentals of Building Inspection</td>
<td>3</td>
</tr>
<tr>
<td>CONST-181</td>
<td>Building Code Interpretation: Non-Structural</td>
<td>3</td>
</tr>
<tr>
<td>CONST-182</td>
<td>Building Code Interpretation: Structural</td>
<td>3</td>
</tr>
<tr>
<td>CONST-183</td>
<td>Title 24: Energy Conservation Codes</td>
<td>3</td>
</tr>
<tr>
<td>CONST-191</td>
<td>Plumbing Code Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>CONST-192</td>
<td>Mechanical Code Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>CONST-266</td>
<td>Electrical Codes: Articles 90-398</td>
<td>3</td>
</tr>
<tr>
<td>CONST-267</td>
<td>Electrical Codes: Articles 400-830</td>
<td>3</td>
</tr>
<tr>
<td>CONST-273</td>
<td>Construction Management</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 33

Certificate of achievement - Construction and supervision and superintendency

This program is designed for those preparing for supervision responsibilities in the construction industry.

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 Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-101</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120</td>
<td>Introduction to Management Studies</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-121</td>
<td>Practices and Concepts of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>CONST-114</td>
<td>Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>CONST-116</td>
<td>Plane Surveying</td>
<td>3</td>
</tr>
<tr>
<td>CONST-124</td>
<td>Construction Details and Specifications</td>
<td>3</td>
</tr>
<tr>
<td>CONST-244</td>
<td>Estimating - Residential</td>
<td>3</td>
</tr>
<tr>
<td>CONST-245</td>
<td>Estimating - Commercial</td>
<td>3</td>
</tr>
<tr>
<td>CONST-273</td>
<td>Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>CONST-276</td>
<td>Legal Aspects-Construction Industry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-120</td>
<td>Intermediate Algebra</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-110</td>
<td>Elementary Physics</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 38

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 Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-244</td>
<td>Architectural Practice and Working Drawings I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-101</td>
<td>Business English</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>
<td>1</td>
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<tr>
<td>CONST-135</td>
<td>Construction Processes (Residential)</td>
<td>4</td>
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<tr>
<td>CONST-136</td>
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</tr>
<tr>
<td>CONST-144</td>
<td>Materials of Construction</td>
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<td>CONST-276</td>
<td>Legal Aspects-Construction Industry</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 54

Certificate of achievement - Construction supervision and management

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<tbody>
<tr>
<td>BUS-101</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120</td>
<td>Introduction to Management Studies</td>
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</tr>
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<tr>
<td>PHYS-110</td>
<td>Elementary Physics</td>
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total minimum required units 38

Certificate of achievement - Construction management

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<th>Course Title</th>
<th>Units</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-124</td>
<td>Construction Details and Specifications</td>
<td>3</td>
<td>SC</td>
<td>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</td>
</tr>
<tr>
<td>CONST-135</td>
<td>Construction Processes (Residential)</td>
<td>4</td>
<td>SC</td>
<td>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</td>
</tr>
<tr>
<td>CONST-136</td>
<td>Construction Processes (Commercial)</td>
<td>4</td>
<td>SC</td>
<td>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</td>
</tr>
<tr>
<td>CONST-144</td>
<td>Materials of Construction</td>
<td>3</td>
<td>SC</td>
<td>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</td>
</tr>
<tr>
<td>CONST-150</td>
<td>Topics in Construction</td>
<td>.3-4</td>
<td>SC</td>
<td>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</td>
</tr>
<tr>
<td>CONST-170</td>
<td>Fundamentals of Building Inspection</td>
<td>3</td>
<td>SC</td>
<td>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</td>
</tr>
<tr>
<td>CONST-180</td>
<td>Building Codes Use and Occupancy Types</td>
<td>3</td>
<td>SC</td>
<td>Acquaints the student with legal requirements associated with building classification. Development of checklists and knowledge of a nonstructural plan check review. CSU</td>
</tr>
<tr>
<td>CONST-181</td>
<td>Building Code Interpretation: Non-Structural</td>
<td>3</td>
<td>SC</td>
<td>Acquaints the student with legal requirements associated with building inspection. Development of checklists and knowledge of a nonstructural plan check review. CSU</td>
</tr>
<tr>
<td>CONST-182</td>
<td>Building Code Interpretation: Structural</td>
<td>3</td>
<td>SC</td>
<td>Acquaints the student with legal requirements associated with building inspection. Development of checklists and knowledge of a structural plan check review. CSU</td>
</tr>
<tr>
<td>CONST-183</td>
<td>Title 24: Energy Conservation Codes</td>
<td>3</td>
<td>SC</td>
<td>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</td>
</tr>
<tr>
<td>CONST-191</td>
<td>Plumbing Code Interpretation</td>
<td>3</td>
<td>SC</td>
<td>Interpretation, understanding and application of codes and standards as they apply to construction of plumbing systems. CSU</td>
</tr>
</tbody>
</table>
**Construction**

**CONST-192 Mechanical Code Interpretation**  
3 units SC  
- **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

**CONST-244 Estimating - Residential**  
3 units SC  
- **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

**CONST-245 Estimating - Commercial**  
3 units SC  
- **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

**CONST-266 Electrical Codes: Articles 90-398**  
3 units SC  
- **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.

**CONST-267 Electrical Codes: Articles 400-830**  
3 units SC  
- **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.

**CONST-273 Construction Management**  
3 units SC  
- **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

**CONST-276 Legal Aspects of the Construction Industry**  
3 units SC  
- **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

**CONST-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

**CONST-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

**COOPERATIVE EDUCATION – COOP**

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.

---

Kim Schenk, Senior Dean  
Instruction Office  
Administration Building, Room 214
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 their jobs are unrelated to their major. COOP-170: Students who are employed and their 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. Does not meet requirements for veterans' benefits. Employment Form can be accessed at 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-160 is supervised employment for students whose jobs do not relate to their college major or area of career interest. Under the supervision of a college instructor, students will acquire employability skills, desirable work habits, and career awareness through on-the-job and other learning experiences. CSU

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. 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 is supervised employment that extends classroom learning to the job site and relates to the student’s chosen 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

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. 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 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. Internships may be paid, non-paid, or some partial compensation provided.
COUNS-095  Orientation to College
3-2 units  P/NP
- Non degree applicable
- 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.

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
- Non degree applicable
- Variable hours
- Note: Completion of English and math assessment four days prior to this course will facilitate appropriate course selection

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 Planning
1.5 units  SC
- 27 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

Through this course students will 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 to create a personal education plan. 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

Michael Norris, Interim 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, cafés, 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science degree
Hospitality studies
Specializations:
Baking and pastry
Culinary
Restaurant management

Certificates of achievement
Baking and pastry
Culinary arts
Restaurant management

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 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 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.
Culinary arts

major requirements

<table>
<thead>
<tr>
<th>core courses</th>
<th>units</th>
</tr>
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<tbody>
<tr>
<td>CULN-105 Introduction to the Kitchen</td>
<td>0.5</td>
</tr>
<tr>
<td>CULN-110 Orientation to Hospitality</td>
<td>3</td>
</tr>
<tr>
<td>CULN-115 Culinary Mathematics</td>
<td>1.5</td>
</tr>
<tr>
<td>CULN-120 Fundamentals of Cuisine</td>
<td>5</td>
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<tr>
<td>CULN-153 Safety and Sanitation</td>
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<tr>
<td>CULN-185 Nutritional Guidelines in Food Preparation</td>
<td>2</td>
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<td>CULN-192 Purchasing Operations and Systems Laboratory</td>
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<tr>
<td>CULN-193 Inventory and Ordering Systems Laboratory</td>
<td>0.3</td>
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<tr>
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<tr>
<td>CULN-224 Catering Business and Operations</td>
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plus at least 2 units from one of the following courses:

- COOP-170 Occupational Work Experience Education | 2-4 |
- COOP-180 Internship in Occupational Work Experience Education | 2-4 |
- CULN-298 Independent Study | 2-3 |
- CULN-299 Student Instructional Assistant | 2-3 |

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

<table>
<thead>
<tr>
<th>units</th>
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</thead>
<tbody>
<tr>
<td>CULN-180 Fundamentals of Baking</td>
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<tr>
<td>CULN-280 Advanced Pastry and Baking</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 |

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culinary arts

required courses

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<tr>
<td>CULN-127 Garde Manager</td>
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<tr>
<td>CULN-154 Menu Development and Planning</td>
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<tr>
<td>CULN-160 Fundamentals of Beverage, Wine and Spirits</td>
</tr>
<tr>
<td>CULN-167 Restaurant Operations in the Dining Room</td>
</tr>
<tr>
<td>CULN-175 Meat, Poultry and Fish Fabrication</td>
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<tr>
<td>CULN-180 Fundamentals of Baking</td>
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<tr>
<td>CULN-220 Advanced Cuisine</td>
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restaurant management

required courses

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<td>CULN-154 Menu Development and Planning</td>
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<td>CULN-160 Fundamentals of Beverage, Wine and Spirits</td>
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<tr>
<td>CULN-167 Restaurant Operations in the Dining Room</td>
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<td>CULN-180 Fundamentals of Baking</td>
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<tr>
<td>CULN-201 Principles of Food, Beverage and Cost Controls</td>
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<tr>
<td>CULN-216 Food and Wine Pairing</td>
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<tbody>
<tr>
<td>restaurant management</td>
<td>47.3</td>
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</table>

*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 - 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

<table>
<thead>
<tr>
<th>units</th>
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<tbody>
<tr>
<td>CULN-105 Introduction to the Kitchen</td>
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<tr>
<td>CULN-110 Orientation to Hospitality</td>
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<tr>
<td>CULN-115 Culinary Mathematics</td>
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<tr>
<td>CULN-224 Catering Business and Operations</td>
</tr>
<tr>
<td>CULN-280 Advanced Pastry and Baking</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 |
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 one of the following courses:
COOP-170 Occupational Work Experience Education......... 2-4
COOP-180 Internship in Occupational Work
Experience Education...................................... 2-4
CULN-298 Independent Study.................................. 2-3
CULN-299 Student Instructional Assistant....................... 2-3

total minimum required units 36.8

*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 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
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-193 Inventory and Ordering Systems Laboratory .... 0.3
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

plus at least 2 units from one of the following courses:
COOP-170 Occupational Work Experience Education......... 2-4
COOP-180 Internship in Occupational Work
Experience Education...................................... 2-4
CULN-298 Independent Study.................................. 2-3
CULN-299 Student Instructional Assistant....................... 2-3

total minimum required units 46.8

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 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
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-180 Fundamentals of Baking ............................. 3.5
CULN-185 Nutritional Guidelines in Food Preparation ... 2
CULN-192 Purchasing Operations and Systems Laboratory .................................................. 2.5
CULN-193 Inventory and Ordering Systems Laboratory .... 0.3
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
plus at least 2 units from one of the following courses:

- COOP-170 Occupational Work Experience... 2-4
- COOP-180 Internship in Occupational Work Experience... 2-4
- CULN-298 Independent Study... 2-3
- CULN-299 Student Instructional Assistant... 2-3

**Total minimum required units** 47.3

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 units 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

**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

**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

**CULN-120  Fundamentals of Cuisine**

5 units SC

- 270 hours laboratory per term
- Prerequisite: CULN-105 or equivalent
- Co-requisite: CULN-135 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 basic 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

**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 platters, buffets, and food show competitions. CSU

**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 students with an opportunity to plan and develop basic menus, focusing on techniques and flavors typical of 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 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.

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 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 students with a comprehensive overview of the 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 the 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-193  Inventory and Ordering Systems Laboratory**

.3 unit LR  
- 18 hours laboratory by arrangement per term  
- Prerequisite: CULN-153 or equivalent  
- Co-requisite: CULN-192 or equivalent  
- Note: Each student will be assigned to an ordering team which meets either M, T, W or TH from 2-3:30pm. See instructor for details. 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.

In this course, students will learn to order food products for a commercial enterprise, analyze inventory, and utilize specifications, proper pack size, and par levels as needed. 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 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 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

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) 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 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) 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 planning careers in restaurant 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) 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 upon student skills honed in the fundamentals 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 integrated 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) 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.

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) 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 catering applications course integrating catering fundamentals 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) 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.

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) 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 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 understanding of ethnic cuisine in today’s multi-cultural society and its significance and influence on (North) American culture. 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.

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

**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

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**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 learning outcomes**

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at [www.dvc.edu/slo](http://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 as 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 GE). Students who wish to transfer to four-year institutions must consult with program faculty and college counselors to ensure 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 GE). General Education Option 1 (DVC GE) 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: Introduction to Dance ................................. 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

**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 .................................................... 1.5

**Plus at least 3 units from the following:**

- DRAMA-111 Fundamentals of Stage Production – Lighting ................................................................. 3
- DRAMA-112 Stage Makeup ......................................................... 3
- DRAMA-113 Introduction to Costume Design ......................... 1
- DRAMA-122 Basic Principles of Acting ........................................... 3
- DRAMA-200 Introduction to Technical Theater ......................... 3

**Total Minimum Theory and Performance Requirements** 14

**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** 24.5

**Recommended Electives:**

- DRAMA-139 Introduction to Theater ........................................... 3
- DRAMA-200 Introduction to Technical Theater .......................... 3
- KINES-240 Principles of Optimizing Human Performance ................. 3
- KNACT-110A Beginning Hatha Yoga ........................................... 0.5-2
- KNACT-114 Stretch and Yoga for Sports ................................... 0.5-2
- NUTRI-120 Sports Nutrition: Fueling the Athlete ......................... 3
- PHYS-110 Elementary Physics .................................................... 3

**DANCE-150 Topics in Dance**

- .3-4 units SC
- **Variable Hours**

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

**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 course is designed to investigate 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-110A 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-110A 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 DANCE-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, UC

### 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, UC

### 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

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**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).
Dental assisting

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science degree
Dental assisting

Certificate of achievement
Dental assisting

Associate in science degree - Dental assisting
The required dental assisting program 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 cardiopulmonary 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.

program prerequisite: units
DENTL-120 Orientation to the Registered Dental Assisting Program...........................................0.3

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 units
COMM-121* Persuasion and Critical Thinking.................................3
DENTL-171 Oral Facial Structures and Body Systems..................4
DENTL-172 Dental Radiography I.................................................2.5
DENTL-173 Dental Operative Procedures I.................................3
DENTL-174 Dental Materials and Laboratory Procedures...............3
DENTL-175 Infection Control/Oral Documentation/Theories of Dental Assisting.................................................3
DENTL-180 Office Management..................................................3
DENTL-181 Dental Emergencies, Pharmacology and Oral Pathology.........................................................2
DENTL-182 Dental Radiography II..............................................2.5
DENTL-183 Advanced Dental Operative Procedures..............4.5
DENTL-184 Clinical Experience..................................................7
DENTL-191 Pit and Fissure Sealants for the RDA.........................1.5
ENGL-122* Freshman English: Composition and Reading.........................................................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.

Certificate of achievement - Dental assisting

program prerequisite units
DENTL-120 Orientation to the Registered Dental Assisting Program...........................................0.3

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.
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  
.3 unit  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, on patients at the University of the Pacific Dental School, and in the 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 regulatory 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 are identified. Care and maintenance of the equipment. CSU

DENTL-174 Dental Materials and Laboratory Procedures
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

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 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 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

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 recording vital signs; microbiology of dental decay and application of its relationship to the principles of oral hygiene; dental health related diet and nutrition; oral inspection, documentation, and dental charting; orientation to the roles, functions and duties of the members of the dental team, as governed by the Dental Bureau of California and the California Dental Practice Act, and; career pathways of dental assisting, professionalism, dental specialties, and professional dental organizations. CSU

DENTL-180 Office Management
3 units LR
- 54 hours lecture per term
- Prerequisite: DENTL-171 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Current CPR Certificate (Basic Life Support for Healthcare Provider with AED) is recommended

Front office duties including dental staff management and interaction, patient management, written communication, telecommunication, bookkeeping/financial transactions, dental office documents, dental insurance, appointment management systems, recall systems, inventory systems, and supply ordering. Dental jurisprudence, related ethical concerns, and HIPAA compliance also will be presented in this course. Instruction in the implementation of DENTRIX dental software. CSU
DENTL-181 Dental Emergencies, Pharmacology and Oral Pathology  
2 units LR  
- 36 hours lecture per term  
- Prerequisite: DENTL-175 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  
A course in dental office preparation, assisting in the management of medical and dental emergencies. Review of legal and ethical responsibilities in the event of a medical or dental emergency. Pathology of the hard and soft tissue of the oral cavity and function of pharmacology are also covered. CSU

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  
- 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 extraoral 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

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**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 learning outcomes**

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

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**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>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-120*</td>
<td>Introduction to Human Anatomy and Physiology</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-108*</td>
<td>Introductory Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-109*</td>
<td>Introduction to Organic and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>ENGL-122</td>
<td>Freshman English: Composition and Reading</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI-160*</td>
<td>Nutrition: Science and Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

*These courses must have been completed within the past seven years.

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**Associate in science degree**

- Dental hygiene

**Certificate of achievement**

- Dental hygiene
**Program Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENHY-101</td>
<td>Dental Hygiene Orientation</td>
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<tr>
<td>DENHY-120</td>
<td>Introduction to Dental Hygiene: Theory, Process of Care and Practice</td>
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<tr>
<td>DENHY-121</td>
<td>Introduction to Comprehensive Clinical Dental Hygiene Care</td>
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<td>DENHY-122</td>
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<td>DENHY-123</td>
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<td>DENHY-124</td>
<td>Fundamentals of Radiology for the Dental Hygienist</td>
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<tr>
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<td>Head and Neck Anatomy, Histology, and Embryology</td>
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<td>DENHY-126</td>
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<td>DENHY-127</td>
<td>Infection Control: Theory, Practice and Communication</td>
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<td>DENHY-128</td>
<td>Periodontics for the Dental Hygienist</td>
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<td>Contemporary Dental Materials for the Dental Hygienist</td>
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<tr>
<td>DENHY-131</td>
<td>Local Anesthesia</td>
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<td>DENHY-132</td>
<td>Behavioral Foundations and Communication Skills</td>
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<td>DENHY-223</td>
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<td>Community Oral Health</td>
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<td>PSYC-122</td>
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<tr>
<td>SOCI-120</td>
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**plus at least 3 units from:**

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<tr>
<td>COMM-121</td>
<td>Persuasion and Critical Thinking</td>
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</table>

**Total Minimum Required Units - Program:** 64.8

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**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:**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>BIOSC-120</td>
<td>Introduction to Human Anatomy and Physiology</td>
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<tr>
<td>CHEM-108*</td>
<td>Introduction to Organic and Biochemistry</td>
<td>4</td>
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<tr>
<td>CHEM-109*</td>
<td>Introduction to General Chemistry</td>
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<td>ENGL-122</td>
<td>Freshman English: Composition and Reading</td>
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<tr>
<td>NUTR-160*</td>
<td>Nutrition: Science and Applications</td>
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<td>NUTR-161</td>
<td>Nutrition: Science and Applications</td>
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**plus at least 4 units from:**

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<tr>
<td>BIOSC 146*</td>
<td>Principles of Microbiology</td>
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*These courses must have been completed within the past seven years.

**Required Dental Hygiene Program Courses**

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Dental hygiene

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 .................................................................. 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

**Total minimum required units - program** 64.8

**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**
- 3 unit
- P/NP
- 6 hours lecture/12 hours laboratory per term
- **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**
- 1 unit LR
- 18 hours lecture per term
- **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**
- 5 units LR
- 54 hours lecture/108 hours laboratory per term
- **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**
- 5 units LR
- 48 hours lecture/126 hours laboratory per term
- **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**
- 2 units LR
- 36 hours lecture per term
- **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

2 units LR
- 18 hours lecture/54 hours laboratory per term
- 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

4 units LR
- 54 hours lecture/54 hours laboratory per term
- 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-133 Behavioral Foundations and Communications Skills

1 unit LR
- 18 hours lecture per term
- Prerequisite: DENHY-101 or equivalent

This course will introduce students to principles drawn from the behavioral sciences, which provide the knowledge base to guide dental hygienist-client communication. The basic components of the communication process, verbal and nonverbal communication, therapeutic and non-therapeutic communication techniques, listening skills, major theories of motivation, and the interrelationship between teaching, learning, and communication will be covered. Work will focus on the modification of teaching, learning, and communication techniques appropriate for clients throughout the life span and development of abilities to interact with the many individuals and groups who make up our multicultural environment. 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-136  Dental Hygiene Care for Clients with Special Needs
1 unit   LR
• 18 hours lecture per term
• Prerequisite: DENHY-101 or equivalent
This course focuses on goals, principles, and treatment modification of comprehensive dental hygiene care for clients with special needs. 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
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 unit   LR
• 18 hours lecture/27 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 patient 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-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 RDH Examination Preparation
.5 unit P/NP
• 27 hours laboratory per term
• Prerequisite: DENHY-231 or equivalent
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
Dental laboratory technology

DENTAL 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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

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<td>Introduction to Dental Morphology</td>
<td>2</td>
</tr>
<tr>
<td>DENTE-236</td>
<td>Dental Anatomy and Morphology</td>
<td>2</td>
</tr>
<tr>
<td>DENTE-237</td>
<td>Intermediate Crown and Bridge Techniques</td>
<td>2</td>
</tr>
<tr>
<td>DENTE-238</td>
<td>Advanced Crown and Bridge Techniques</td>
<td>4</td>
</tr>
<tr>
<td>DENTE-240</td>
<td>Introduction to Dental Ceramics</td>
<td>2</td>
</tr>
<tr>
<td>DENTE-242</td>
<td>Dental Ceramics Substructure and Designs</td>
<td>4</td>
</tr>
<tr>
<td>DENTE-250</td>
<td>Practical Fixed and Removable Techniques</td>
<td>2</td>
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</table>

total minimum required units: 20.5

recommended courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>BUSMG-191</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>COOP-170</td>
<td>Occupational Work Experience Education</td>
<td>1-4</td>
</tr>
<tr>
<td>DENTL-110</td>
<td>Overview of the Dental Profession</td>
<td>1.5</td>
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<tr>
<td>ENGL-122</td>
<td>Freshman English: Composition and Reading</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-112</td>
<td>Fundamentals of Physical Science</td>
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</table>

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>DENTE-120</td>
<td>Ethics, Jurisprudence, and History of Dentistry</td>
<td>1</td>
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<tr>
<td>DENTE-122</td>
<td>Introduction to Dental Materials</td>
<td>1.5</td>
</tr>
<tr>
<td>DENTE-124</td>
<td>Introduction to Dental Morphology</td>
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total minimum required units: 20.5
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
PHYSIC-112 Fundamentals of Physical Science ......................... 3

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
This course addresses the principles of ethics in the dental profession as well as the history and jurisprudence of dental laboratory technology. This course will cover information relating to ancient dentistry, medieval dentistry, Roman and Greek dentistry, modern dentistry and dentistry in the United States and the various substitutes used for removable appliances during these periods. CSU

DENTE-122 Introduction to Dental Materials
1.5 units LR
• 18 hours lecture/27 hours laboratory per term
This course provides an introduction to the various metallic and nonmetallic materials used in dental laboratory practices. Students will develop manipulative skills necessary to properly utilize dental materials to include gypsum products, such as die stone, yellow stone, plaster, waxed alloys, investments, dental resins, and various stone separators. In addition, students will learn to operate dental equipment and the safety guards relating to the dental lab equipment. 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
Students taking this course will be introduced to the anatomy of the head and their various jaw movements. Individual teeth in the oral cavity, the Annotion System, tooth contours and morphologies, dental terminology and the various types of occlusions, such as Class I, II and Class III Malocclusions will be covered. Students will also learn how to produce clinically acceptable wax-ups in the maxillary and mandibular arch, as well as tooth surfaces and tooth composition. In addition, students will also learn Cusp to Fossae relationships, the mastication of food stuff and the Lost Wax technique, which involves spruing, wax patterns, investing patterns, casting patterns and metal finishing, and the polishing of various types of restorations for crown and bridge and ceramic restorations. 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
In this course students will receive advanced training in the fabrication of fixed restorations, die and working cast preparations, margin types, the Troy Weight System, wax elimination, inlay classification, and metal finishing and polishing procedures will be covered. 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
In this course students will learn coping and substructure designs for ceramic restorations, advanced dental terminologies relating to porcelain fused to metal restorations, and alloy classifications. In addition, students will learn how to develop, bake, contour, glaze and polish multiple unit bridges with various pontic forms. 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
Students taking this course will cover advanced fabrication of fixed ceramic bridge work. Students will learn to utilize non-precious alloys to develop multiple unit ceramic restorations in various combinations, such as metal lingual and metal occlusions. In addition students will design anterior and posterior ceramic bridge work, post and cores for endodontically-treated teeth (root canals) non-rigid bridges. The physical characteristics of the metal ceramic system will also be covered. CSU

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
This course is an exposure to lectures and demonstrations relating to the design of a variety of types of porcelain-fused-to-metal (PFM) restorations including ceramic cut-back technique, alloy preparation or treatment; an introduction to dental porcelains, occlusal contacts and factors in substructure design. CSU
Dental laboratory technology

DENTE-242 Dental Ceramics Substructure and Designs
4 units LR
- 36 hours lecture/108 hours laboratory per term
- Prerequisite: DENTE-240 or equivalent
This class will offer an advanced presentation of the techniques related to the design and development of porcelain fused to metal restorations in multiple units and the coefficient of thermal expansion as it relates to the casting of non-precious alloys. In addition, the application of porcelain to multiple-unit frames, contour, baking, glazing, staining and custom characterizing techniques will be covered. 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 will cover the techniques of developing removable full and partial dentures. Students will learn to produce occlusal rims, set denture teeth in sequence and in centric occlusion, festoon the denture, (shaping the denture) and learn how to process the denture. Student will also learn the techniques of repairing a broken denture, producing a denture relinie, and completing a single tooth repair. 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Technical theater

Associate in arts for transfer
Theater arts

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

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAMA-111 Fundamentals of Stage Production - Lighting</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-112 Stage Makeup</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-200 Introduction to Technical Theater</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-201 Technical Theater Laboratory</td>
<td>1-2</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>DRAMA-122 Basic Principles of Acting</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-123 Intermediate Principles of Acting</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-124 Advanced Principles of Acting</td>
<td>6</td>
</tr>
<tr>
<td>DRAMA-127 Auditioning Techniques</td>
<td>3</td>
</tr>
</tbody>
</table>
similar major at a CSU campus. Students completing this for students who plan to complete a bachelor’s degree in a communications, and psychology. Many students find the completion of a theatre arts degree can lead to professional careers in acting, technical theater, stage management, stage direction, and design. In addition, students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. 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, or those students who do not intend to transfer.

Students must complete each course used to meet a major requirement with a “C” grade or higher. Some courses in the 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’s 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**

- DRAMA-122 Basic Principles of Acting .......................... 3
- DRAMA-139 Introduction to Theater ............................ 3
- DRAMA-140 History of the Theater: Pre-Greek to 17th Century .................................................. 3

**plus either:**

- DRAMA-201 Technical Theater Laboratory ................. 1-2*
- OR DRAMA-270 Major Production ................................ 1-2*

**plus at least 9 units from:**

- DRAMA-111 Fundamentals of Stage Production-Lighting .................................................. 3
- DRAMA-112 Stage Makeup ........................................ 3
- DRAMA-113 Introduction to Costume Design ................. 3
- DRAMA-123 Intermediate Principles of Acting .......... 3
- DRAMA-200 Introduction to Technical Theater ........ 3

or, if not used above:

- DRAMA-201 Technical Theater Laboratory ................. 1-2*
- DRAMA-270 Major Production ................................ 1-2*

*maximum of three units from these courses

**total minimum required units** 8

**Associate in arts in theater arts for transfer**

The associate in arts in theater arts for transfer (AA-T) at Diablo Valley College prepares students to move into a program at a CSU university leading to a baccalaureate degree in theater arts. Completion of a B.A. in theater arts can lead to professional careers in acting, technical theater, stage management, stage direction, and design. In addition, many students find the completion of a theatre arts degree a complementary preparation for careers in education, law, communications, and psychology.

The associate in arts in theater arts for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units
- Complete the California State University-General Education-pattern (CSU GE) OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester or 27 quarter units in the major or area of emphasis as determined by the community college district
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of C or higher in all courses required for the major or area of emphasis.

Students transferring to a CSU campus that accepts the degree must complete a minimum of 18 semester or 27 quarter units in the major or area of emphasis as determined by the community college district for admission to the CSU system. Students transferring to a CSU campus that accepts the degree may be advised to refer to the catalog of the prospective transfer institution and consult a counselor.

**plus at least 3 units from:**

- COOP-170 Occupational Work Experience Education .... 1-4
- COOP-180 Internship in Occupational Work Experience Education ............................................. 1-4

**plus at least 9 units from:**

- ARCHI-130 Architectural Graphics I .......................... 3
- ART-105 Drawing I ................................................. 3
- ART-106 Drawing II ................................................. 3
- ART-108 Figure Drawing II ......................................... 3
- ARTDM-130 Introduction to Digital Audio .................. 1.5
- ARTDM-149 Fundamentals of Digital Video .............. 3
- ARTDM-160 3D Modeling and Animation I .............. 3
- BCA-120 Introduction to TV Studio Production .......... 3
- BCA-125 Introduction to Film Production ................ 3
- DRAMA-113 Introduction to Costume Design ............... 3
- DRAMA-130 Principles of Directing ........................... 3
- DRAMA-230 Directing Projects ................................ 1-2
- DRAMA-260* Acting in Student Directed Projects ........ 1-2
- DRAMA-270* Major Production ................................ 1-2
- DRAMA-298 Independent Study ................................ 0.5-3
- ENGIN-119 Introduction to Technical Drawing .......... 3
- ENGIN-126 Computer Aided Design and Drafting - AutoCAD .................................................. 4
- FILM-292 Introduction to Film Production ................ 3
- MUSX-172 Introduction to Electronic Music and MIDI .... 3

**total minimum required units** 28

*Note: Students may only apply one of DRAMA-260 or DRAMA-270 to major requirements
Drama

**Certificate of achievement - Technical theater**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>DRAMA-111</td>
<td>Fundamentals of Stage Production - Lighting</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-112</td>
<td>Stage Makeup</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-200</td>
<td>Introduction to Technical Theater</td>
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</tr>
<tr>
<td>DRAMA-201</td>
<td>Technical Theater Laboratory</td>
<td>1-2</td>
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</table>

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<tbody>
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<td>DRAMA-122</td>
<td>Basic Principles of Acting</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-123</td>
<td>Intermediate Principles of Acting</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-124</td>
<td>Advanced Principles of Acting</td>
<td>6</td>
</tr>
<tr>
<td>DRAMA-127</td>
<td>Auditioning Techniques</td>
<td>3</td>
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*plus at least 3 units from:

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<tr>
<td>DRAMA-139</td>
<td>Introduction to Theater</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-140</td>
<td>History of the Theater: Pre-Greek to 17th Century</td>
<td>3</td>
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<tr>
<td>DRAMA-141</td>
<td>History of the Theater: 17th Century to Present</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-180</td>
<td>Literature of World Drama: Pre-Greek to 17th Century</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-181</td>
<td>Literature of World Drama: 17th Century to Present</td>
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<tbody>
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<td>COOP-170</td>
<td>Occupational Work Experience Education</td>
<td>1-4</td>
</tr>
<tr>
<td>COOP 180</td>
<td>Internship in Occupational Work</td>
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<tbody>
<tr>
<td>ARCHI-130</td>
<td>Architectural Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
<td>3</td>
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<tr>
<td>ART-106</td>
<td>Drawing II</td>
<td>3</td>
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<tr>
<td>ART-108</td>
<td>Figure Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-130</td>
<td>Introduction to Digital Audio</td>
<td>1.5</td>
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<tr>
<td>ARTDM-149</td>
<td>Fundamentals of Digital Video</td>
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<tr>
<td>ARTDM-160</td>
<td>3D Modeling and Animation</td>
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<tr>
<td>BCA-120</td>
<td>Introduction to TV Studio Production</td>
<td>3</td>
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<tr>
<td>BCA-125</td>
<td>Introduction to Film Production</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-113</td>
<td>Introduction to Costume Design</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-130</td>
<td>Principles of Directing</td>
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<tr>
<td>DRAMA-230</td>
<td>Directing Projects</td>
<td>1-2</td>
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<tr>
<td>DRAMA-260</td>
<td>Acting in Student-Directed Projects</td>
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<td>Major Production</td>
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<td>FILM-292</td>
<td>Introduction to Film Production</td>
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</tr>
<tr>
<td>MUSIC-172</td>
<td>Introduction to Electronic Music and MIDI</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 28

*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. C-ID THTR 173, CSU, UC

**DRAMA-112**  
**Stage Makeup**  
3 units SC  
- 54 hours lecture 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**  
3 units SC  
- 36 hours lecture/27 hours laboratory/27 hours laboratory by arrangement per term  
This course is for the study of 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 incorporate stage movement, memorization, vocal and character work to prepare them to work on the 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  
This introductory course surveys the roles of actors, directors, playwrights, and designers, in the development of theatrical works. The multiple disciplines of theater throughout history are examined. It will also cover the origins of theater, dramatic structure, the audience and theater performance spaces. C-ID THTR 111, 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. C-ID THTR 113, 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  
This course will explore and evaluate contemporary dramatic literature (1965-present) of Native-American, African-American, Asian-Pacific American and Chicano/Latino cultures. The historical as well as the cultural and social conditions in which these plays developed will also be examined. CSU, UC

DRAMA-150  Children's Theater  
3 units  SC  
- 54 hours lecture per term  
This is a course in the theory, principle, and practice of children’s theater. It features the creation of a series of scenes or a full length children's theater work using dialogue, singing, and dancing, with emphasis on techniques used in performance for a young audience. Students will explore the roles of performers, designers, and dramaturges in the creation of contemporary theater for children. 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
3 units  SC
• 54 hours lecture per term
• Recommended: MUSIC-170 or equivalent
This course develops performance skills combining singing, dancing, and acting in the presentation of scenes from musical theater. Students will learn and integrate acting, movement, and singing skills to create a believable character on stage. Rehearsal and performance techniques for a wide variety of musical theater styles and historical periods will be covered. 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. C-ID THTR 171, 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. C-ID THTR 192, CSU, UC

DRAMA-202  Fundamentals of Stage Production – Technical Theater
1-2 units  SC
• May be repeated three times
• 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. C-ID THTR 191, CSU, UC

DRAMA-275 Musical Theater Production
1-2 units SC
• May be repeated three times
• 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, UC

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, 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science degree
Early childhood education

Associate in science for transfer
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.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE-123 Introduction to Curriculum in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-124 Child Development and Psychology</td>
<td>3</td>
</tr>
<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>2</td>
</tr>
<tr>
<td>ECE-128 Advanced Curriculum Development in ECE</td>
<td>3</td>
</tr>
<tr>
<td>ECE-130 Child, Family, and Community</td>
<td>3</td>
</tr>
<tr>
<td>ECE-144 Diversity in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-249 Observation and Assessment in the Classroom</td>
<td>4</td>
</tr>
<tr>
<td>ECE-250 Practicum in Early Childhood Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total minimum required units**: 29

**recommended degree electives:**


### Associate in science in early childhood education for transfer

The associate in science in early childhood education for transfer is a 60 unit degree program designed to prepare students to transfer and study child development, human development, and early childhood education. Students will be prepared to take upper division courses their first semester after transferring. Typically, students who complete this program will be able to complete their upper division coursework in only two additional years. In addition to preparation for transfer, this degree also prepares students for various careers working directly with children, families and other adults in the early childhood profession. Upon completion of this program, students will be eligible to apply for the Teacher level permit on the Child Development Permit Matrix from the State of California Commission on Teacher Credentialing. Students will complete lower division courses in child growth and development, principles and practices in early childhood education, curriculum, observation, assessment, child/family/community relationships, diversity, health and safety, and a culminating student teaching practicum.

The associate in science in early childhood education for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE) OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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.

<table>
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</tr>
<tr>
<td>ECE-126 Health, Safety, and Nutrition of the Young Child</td>
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</tr>
<tr>
<td>ECE-130 Child, Family, and Community</td>
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<td>ECE-144 Diversity in Early Childhood Education</td>
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<tr>
<td>ECE-250 Practicum in Early Childhood Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total minimum required units**: 26
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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE-123</td>
<td>Introduction to Curriculum in Early Childhood</td>
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<tr>
<td>ECE-124</td>
<td>Child Development and Psychology</td>
<td>3</td>
</tr>
<tr>
<td>ECE-125</td>
<td>Principles and Practices of Early Childhood</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>
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<tr>
<td>ECE-144</td>
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</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>
<tr>
<td></td>
<td>Total minimum required units</td>
<td>29</td>
</tr>
</tbody>
</table>

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

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<th>Course</th>
<th>Title</th>
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<tbody>
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<td>3</td>
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<tr>
<td>ECE-124</td>
<td>Child Development and Psychology</td>
<td>3</td>
</tr>
<tr>
<td>ECE-125</td>
<td>Principles and Practices of Early Childhood</td>
<td>3</td>
</tr>
<tr>
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<td>Health, Safety, and Nutrition for the Young Child</td>
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<td>3</td>
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<td>Child, Family, and Community</td>
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<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>
<tr>
<td>ECE-253</td>
<td>Adult Supervision and Mentoring in Early Childhood Classrooms</td>
<td>2-3</td>
</tr>
</tbody>
</table>

plus at least 6 units in any one of these areas of concentration:

creative expression

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE-237</td>
<td>Current Topics in Early Childhood Education</td>
<td>0.5-3</td>
</tr>
<tr>
<td>ECE-242</td>
<td>Music for the Young Child</td>
<td>1</td>
</tr>
<tr>
<td>ECE-243</td>
<td>Creative Art for the Young Child</td>
<td>1</td>
</tr>
<tr>
<td>ECE-244</td>
<td>Circle Time Activities</td>
<td>1</td>
</tr>
</tbody>
</table>

curriculum

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE-140</td>
<td>Creative Activities for Young Children</td>
<td>3</td>
</tr>
<tr>
<td>ECE-237</td>
<td>Current Topics in Early Childhood Education</td>
<td>0.5-3</td>
</tr>
<tr>
<td>ECE-240</td>
<td>Language, Literacy, and Literature for the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ECE-241</td>
<td>Science and Mathematics for Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-242</td>
<td>Music for the Young Child</td>
<td>1</td>
</tr>
<tr>
<td>ECE-243</td>
<td>Creative Art for the Young Child</td>
<td>1</td>
</tr>
<tr>
<td>ECE-244</td>
<td>Circle Time Activities</td>
<td>1</td>
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</table>

infants and toddlers

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ECE-230</td>
<td>Developmentally Appropriate Practice for Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>ECE-231</td>
<td>Infant and Toddler Development</td>
<td>3</td>
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</tbody>
</table>

language and literature

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<td>Current Topics in Early Childhood Education</td>
<td>0.5-3</td>
</tr>
<tr>
<td>ECE-240</td>
<td>Language, Literacy, and Literature for the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-177</td>
<td>Children's Literature</td>
<td>3</td>
</tr>
<tr>
<td>L-111</td>
<td>Storytelling</td>
<td>2</td>
</tr>
</tbody>
</table>

science and math

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.5-3</td>
</tr>
<tr>
<td>ECE-241</td>
<td>Science and Mathematics for Early Childhood Education</td>
<td>3</td>
</tr>
</tbody>
</table>

(Note: Two ECE-237 courses in this category are required)

sign language

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGN-280</td>
<td>American Sign Language (ASL) I</td>
<td>3</td>
</tr>
<tr>
<td>SIGN-281</td>
<td>American Sign Language (ASL) II</td>
<td>3</td>
</tr>
<tr>
<td>SIGN-282</td>
<td>American Sign Language (ASL) III</td>
<td>3</td>
</tr>
<tr>
<td>SIGN-283</td>
<td>American Sign Language (ASL) IV</td>
<td>3</td>
</tr>
</tbody>
</table>
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.

**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 16 units from:**

genereal education courses .................................................................................. 16
(At least one course each from humanities, social science, science or math, and English)

**total minimum required units** 45

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

**total minimum required units** 12
## ECE-123 Introduction to Curriculum in Early Childhood Education

**3 units** LR  
- 54 hours lecture per term  
- Prerequisite: ECE-124 or equivalent (may be taken concurrently)  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Meets the Department of Social Services licensing for DSS III Program and Curriculum Development  

This course presents an overview of knowledge and skills related to providing appropriate curriculum and environments for young children from birth to age 6. Students will examine a teacher's role in supporting development and fostering the joy of learning for all young children using observation strategies emphasizing the essential role of play. An overview of content areas will include but not be limited to: language and literacy, social and emotional learning, sensory learning, art and creativity, math and science.  
C-ID ECE 130, CSU

## ECE-124 Child Development and Psychology

**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 I Child/Human Growth and Development  

This course examines the major physical, psychosocial, and cognitive/language developmental milestones for children, both typical and atypical, from conception through adolescence. Emphasis is on the principal theories and research methodologies supporting the understanding of child development.  
C-ID CDEV 100, CSU, UC

## 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  
- 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 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
Early childhood education

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 requirements 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 six laboratory hours per week. Three units: lecture plus six laboratory hours per week.

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 six 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 six 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 six 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 six 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  
- 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  
**Developmentally Appropriate Practice for Infants and Toddlers**  
3 units  
- 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  

This course applies current theory and research to the care and education for infants and toddlers in group settings. An examination of essential policies, principles and practices that lead to quality care and developmentally appropriate curriculum for children birth to 36 months, including elements of responsive environments and collaboration with families will be covered. CSU

### ECE-231  
**Infant and Toddler Development**  
3 units  
- 54 hours lecture per term  
- Recommended: ECE-124, ECE-230 and eligibility for ENGL-122 or equivalents  

This course studies the physical, cognitive, language, social, and emotional development and growth of infants and toddlers. Students will apply current research and developmental theories to infant and toddler behavior. An emphasis is placed on the role of the family and relationships. CSU

### ECE-237  
**Current Topics in Early Childhood Education**  
.5-3 units  
- 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  
- 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  
- 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  
- 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 and Mentoring 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, volunteers and other adults in early childhood education settings. Emphasis is on the roles and development of early childhood professionals as mentors and leaders. 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 Vazquez, 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
- Required: 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
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

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, 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
ELECTRICAL/ELECTRONICS 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science degree
Electrical/electronics technology

Certificate of achievement
Electrical/electronics technology

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, 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 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 - 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, 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.

major requirements units
ELECT-120 Direct Current Circuits ......................... 4
ELECT-121 Alternating Current Circuits .................. 4
ELECT-130 Motors and Motor Controllers .............. 4
ELECT-266 Electrical Codes: Articles 90-398 .......... 3
ELECT-267 Electrical Codes: Articles 400-830 ....... 3
ELECT-271 Programmable Logic Controllers .......... 4
ELTRN-102B Linear Circuits ............................... 4

total minimum required units 26

recommended courses
COMTC-110 Introduction to Computer Hardware/Software ............................................... 4
ELTRN-107 Introduction to Robotics ....................... 1
ENSYS-130 Photovoltaic Systems Design and Installation ............................... 2

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, 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.

required courses units
ELECT-120 Direct Current Circuits ......................... 4
ELECT-121 Alternating Current Circuits .................. 4
ELECT-130 Motors and Motor Controllers .............. 4
ELECT-266 Electrical Codes: Articles 90-398 .......... 3
ELECT-267 Electrical Codes: Articles 400-830 ....... 3
ELECT-271 Programmable Logic Controllers .......... 4
ELTRN-102B Linear Circuits ............................... 4

total minimum required units 26

recommended courses
CNT-103 Voice, Video and Network Cabling .......... 1
CNT-105 Computer Networking Hardware/Software .. 3
COMTC-110 Introduction to Computer Hardware/Software ............................................... 4
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 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  
• Recommended: ELECT-120 or equivalent  
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 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

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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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.
Energy systems

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.

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<th>major requirements</th>
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<td>CONST-114 Blueprint Reading</td>
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<td>CONST-135 Construction Processes (Residential)</td>
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<tr>
<td>ELECT-120 Alternating Current Circuits</td>
<td>4</td>
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<td>ELECT-266 Electrical Codes: Articles 400-830</td>
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<tr>
<th>required courses</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>

Choose 9-11 units from one of the following two specialty areas:

**Photovoltaic**

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-121 Alternating Current Circuits</td>
<td>4</td>
</tr>
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<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**

<table>
<thead>
<tr>
<th>required courses</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>
</tr>
</tbody>
</table>

**Certificate of achievement - Energy systems - Photovoltaic**

This program prepares students for jobs installing, designing, servicing and maintenance of photovoltaic systems.

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.

<table>
<thead>
<tr>
<th>required courses</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 Alternating Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-121 Alternating Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-266 Electrical Codes: Articles 400-830</td>
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<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>

**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.

<table>
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</tr>
<tr>
<td>ENSYS-260 Solar Photovoltaic and Thermal Installation Techniques</td>
<td>2</td>
</tr>
</tbody>
</table>

**Recommended course**

MATH 120 Intermediate Algebra | 5

| total minimum required units | 27 |
Energy systems

**ENSYS-120 Introduction to Energy Systems**
3 units SC
- 45 hours lecture/27 hours laboratory per term

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

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.

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-145 Advanced Solar Thermal Systems**
2 units LR
- 27 hours lecture/27 hours laboratory per term
- Prerequisite: ENSYS-141 or equivalent
- 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

A supplemental course in energy systems that provides a study of current concepts and practices in energy systems 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

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, hot liquids, power tools, and working on elevated surfaces. Class activities include climbing ladders, lifting up to 50 pounds and working in elevated spaces, in crawl spaces and tight areas.

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.

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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**ENGINEERING – 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 learning outcomes**
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

**Associate in science degrees**

Civil design drafting technology
Civil engineering
Electrical engineering and computer engineering
Mechanical design drafting technology - INACTIVE
Mechanical engineering

**Certificates of achievement**

Civil design drafting technology
Civil drafting - CAD
Mechanical design drafting technology - INACTIVE
Mechanical drafting - CAD - INACTIVE

**Certificate of accomplishment**

Computer aided drafting and digital media for engineering and architecture

**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 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 Global Positioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>MATH-121</td>
<td>Plane Trigonometry</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>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-119</td>
<td>Introduction to Technical Drawing</td>
</tr>
<tr>
<td>ENGIN-119</td>
<td>Introduction to Technical Drawing</td>
</tr>
</tbody>
</table>

**plus at least 4 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
</tr>
<tr>
<td>ENGIN-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
</tr>
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</table>

**plus at least 4 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-226</td>
<td>Computer Aided Drafting Design, Advanced Concepts - AutoCAD</td>
</tr>
<tr>
<td>ENGIN-226</td>
<td>Computer Aided Drafting Design, Advanced Concepts - AutoCAD</td>
</tr>
</tbody>
</table>
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 ............................ 4
GEOG-162 Maps and Cartography ..................................... 3

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:
CHEM-120 General College Chemistry I ............................ 5
COMSC-165 Advanced Programming with C and C++ .......................... 4
COMSC-210 Program Design and Data Structures ..................... 4
ENGIN-110 Introduction to Engineering ................................ 3
ENGIN-230 Introduction to Circuits and Devices ........................ 4
MATH-192 Analytic Geometry and Calculus I ........................ 5
MATH-193 Analytic Geometry and Calculus II ........................ 5
MATH-292 Analytic Geometry and Calculus III ........................ 5
MATH-294 Differential Equations ...................................... 5
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

plus at least 3 units from:
ENGIN-135 Programming for Scientists and Engineers ................ 4
ENGIN-136* Computer Programming for Engineers Using MATLAB .................................................. 4
ENGIN-140* Plane Surveying ........................................ 3
ENGIN-257 Statics and Strength of Materials .......................... 3

*These courses have prerequisites. See a counselor for program sequence.

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 (IEEE) or Option 3 (CSU GE). 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:
CHEM-120* General College Chemistry I ............................ 5
COMSC-165* Advanced Programming with C and C++ .......................... 4
COMSC-210* Program Design and Data Structures ..................... 4
ENGIN-110 Introduction to Engineering ................................ 3
ENGIN-230* Introduction to Circuits and Devices ........................ 4
MATH-192* Analytic Geometry and Calculus I ........................ 5
MATH-193* Analytic Geometry and Calculus II ........................ 5
MATH-292* Analytic Geometry and Calculus III ........................ 5
MATH-294* Differential Equations ...................................... 5
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
Engineering

plus at least 3 units from:
ENGIN-120  Engineering Drawing............................................ 3
ENGIN-121  Engineering Drawing/Descriptive Geometry............ 3
ENGIN-126  Computer Aided Design and Drafting - Auto CAD .................................................. 4
ENGIN-135  Programming for Scientists and Engineers............ 4
ENGIN-136*  Computer Programming for Engineers Using MATLAB ........................................... 4
MATH-194*  Linear Algebra..................................................... 3
MATH-195*  Discrete Mathematics........................................... 4

*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:
CHEM-120*  General College Chemistry I .................................................. 5
ENGIN-110  Introduction to Engineering .................................................. 3
ENGIN-120  Engineering Drawing .................................................. 3
ENGIN-230*  Introduction to Circuits and Devices ......................... 4
ENGIN-240*  Properties of Engineering Materials ......................... 4
ENGIN-255*  Statics................................................................. 3
MATH-192*  Analytic Geometry and Calculus I......................... 5
MATH-193*  Analytic Geometry and Calculus II ......................... 5
MATH-292*  Analytic Geometry and Calculus III ......................... 5
MATH-294*  Differential Equations............................................. 5
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

plus at least 3 units from:
ENGIN-135  Programming for Scientists and Engineers............ 4
ENGIN-136*  Computer Programming for Engineers Using MATLAB ........................................... 4
ENGIN-257*  Statics and Strength of Materials ......................... 3

*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</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-114  Blueprint Reading</td>
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</tr>
<tr>
<td>ENGIN-121*  Engineering Drawing /Descriptive Geometry</td>
<td>3</td>
</tr>
<tr>
<td>GEOF-127  Introduction to Global Positioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>MATH-121  Plane Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-110  Elementary Physics</td>
<td>3</td>
</tr>
</tbody>
</table>

*Denotes coursework that could add additional units.
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 ......................................... 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 ................................... 3
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 units
COMSC-100L Introduction to Computer Software.......................... 1
CONST-114 Blueprint Reading ...................................................... 3
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 ......................................... 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 ................................... 3
GEOG-162 Maps and Cartography .................................................. 3

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 certificate 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 certificate, although coursework transferred from other schools may allow a student to complete the requirements for the 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 certificate 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 certificate, although coursework transferred from other schools may allow a student to complete the requirements for the 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.

<table>
<thead>
<tr>
<th>Required courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>complete 4 units from:</td>
<td></td>
</tr>
<tr>
<td>ARCHI-126 Computer Aided Design and Drafting - AutoCAD</td>
<td></td>
</tr>
<tr>
<td>ENGIN-126 Computer Aided Design and Drafting - AutoCAD</td>
<td></td>
</tr>
<tr>
<td>plus at least 4 units from:</td>
<td></td>
</tr>
<tr>
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<tr>
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<td></td>
</tr>
<tr>
<td>ARCHI-119 Introduction to Technical Drawing</td>
<td></td>
</tr>
<tr>
<td>ARCHI-120 Introduction to Architecture and Environmental Design</td>
<td></td>
</tr>
<tr>
<td>CONST-114 Blueprint Reading</td>
<td></td>
</tr>
<tr>
<td>ENGIN-119 Introduction to Technical Drawing</td>
<td></td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
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<tr>
<td>ARCHI-135 Digital Tools for Architecture</td>
<td></td>
</tr>
<tr>
<td>ARTDM-160 3D Modeling and Animation</td>
<td></td>
</tr>
<tr>
<td>ENGIN-129 Product Design I Using SolidWorks</td>
<td></td>
</tr>
<tr>
<td>GEOG-125 Introduction to Geographic Information Systems (GIS)</td>
<td></td>
</tr>
<tr>
<td>total minimum required units</td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**ENGIN-110** Introduction to Engineering

3 units SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent

Introduction to different engineering disciplines and careers, the role of an engineer in society, engineering ethics, the engineering approach to problem-solving, engineering design process and project development, engineering analysis, concurrent engineering, and application of computers in engineering including design and presentation tools. The emphasis is on hands-on creative problem-solving, teamwork, and effective communication. Students will develop design, analysis, and computer skills through work on projects drawn from various engineering majors. CSU, UC

**ENGIN-111** Mathematics for Technicians

4 units LR
- 90 hours lecture/36 hours laboratory per term
- Prerequisite: MATH-090 or MATH-090E or MATH-090SP or equivalent
- Note: The hand-held calculator will be used extensively as an aid to problem solving

A study of algebraic operations, factoring, fractional equations, quadratic equations, systems of equations, and trigonometric functions, especially as they apply to technical areas and practical application in the workplace. CSU

**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. 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, 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/72 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.

This is an introductory course covering the computer application AutoCAD as it relates to the creation of technical drawings. Two-dimensional computer aided drafting of objects in orthographic projection is covered. 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)

ENGIN-129  Product Design I Using SolidWorks
4 units  SC
• 54 hours lecture/72 hours laboratory per term
• Note: Students may petition to repeat this course when software or hardware is changed.

This course will introduce students to product design using SolidWorks. Students will learn the functions of SolidWorks and how to apply these functions within the product design process. 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 environmental 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-131  Technology and Society
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

This course will explore the many ways in which technologies have influenced our lives, and specifically will investigate how these technologies have themselves been shaped by social, economic, cultural, and political forces. The course will further present perspectives, theories, and facts that should help in understanding the consequences of technological changes, as well as the forces that have produced those changes. This course is appropriate for students in both technical and non-technical majors. CSU

ENGIN-135  Programming for Scientists and Engineers
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 classes for specific section requirements.

An introduction to programming in C/C++ for engineers and scientists. Procedural and object-oriented programming 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 classes 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 integration 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, iteration, recursion and elements of object oriented programming 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 surveying 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 engineering. 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-166  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 and pedestal 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  
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 tosimple lathe and milling machine operation and set-ups. CSU
ENGIN-226  Computer Aided Drafting Design, Advanced Concepts - AutoCAD  
4 units  SC  
- 54 hours lecture/72 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.  
This course is designed for students with previous knowledge and experience in using AutoCAD. Surface/wireframe and solid modeling features of AutoCAD for three-dimensional modeling and photo realistic rendering, customization and optimal application of AutoCAD and utility options for presentation purposes and project management will be covered. CSU, UC (credit limits may apply to UC - see counselor)  

ENGIN-229  Product Design II Using SolidWorks  
4 units  SC  
- 54 hours lecture/72 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 continues exploration of product design with SolidWorks, covering assembly management techniques, creating models via surfacing and style features, and working with nurbs and wireframes. Strategies for troubleshooting and managing existing models with references and inter-dependencies will be presented. Upon completion of the course students will develop a design portfolio demonstrating 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, Kirchoff’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.  

ENGIN-240  Properties of Engineering Materials  
4 units  LR  
- 54 hours lecture/72 hours laboratory  
- Prerequisite: CHEM-120 and PHYS-130 or equivalents  
This course is a study of properties of engineering materials as related to their atomic, microscopic, and macroscopic structures. The application of the basic principles of physics and chemistry to the engineering properties of materials will be covered. Special emphasis will be devoted to the relation between microstructure and the mechanical properties of metals, concrete, polymers, and ceramics, and the electrical properties of semiconducting materials. 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  
This course is a study of the effects of concentrated and distributed forces on the equilibrium of rigid bodies, structures, beams, flexible cables and fluid statics. The application of the method of sections and free body diagrams to solve truss problems will be covered. Wedges, screws, bearings, brakes and other problems involving friction will be examined. Virtual work and potential energy methods in the determination of equilibrium conditions in machines and structures will also be discussed. CSU, UC  

ENGIN-257  Statics and Strength of Materials  
3 units  LR  
- 54 hours lecture/18 hours laboratory per term  
- Prerequisite: PHYS-130 and MATH-193 or equivalents  
- Recommended: MATH-194 or equivalent  
This course is 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
Engineering

**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

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**ENGINEERING TECHNOLOGY - ENGTC**

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

Program learning outcomes

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

Associate in science  
Industrial Maintenance Machinist/Mechanic (mTECH)

Certificate of achievement  
Industrial Maintenance Machinist/Mechanic (mTECH)

Associate in science degree - Industrial maintenance machinist/mechanic (mTECH)

This program prepares students for jobs in the manufacturing industry including industrial machinery mechanic and machinery maintenance worker. These jobs involve repairing, installing, adjusting, or maintaining industrial production and processing machinery or refinery and pipeline distribution systems. The labor market for this high-technology, high-wage occupations in Contra Costa Alameda and Solano counties is expected to be strong.

Courses include machining, industrial hydraulics and pneumatics, shop and field maintenance, welding, basic electricity, blueprint drawing and reading, basic drafting, mathematics, computer software, and technical reading and writing. Major courses are offered sequentially over a period of three semesters. This program is offered as a collaborative program with Solano College in Fairfield and Laney College in Oakland. Students may complete courses at any of the colleges in order to meet requirements. Some required courses are only offered at Laney College, Solano Community College or DVC. Students are advised to meet with a counselor or program advisor to develop an educational plan that meets their needs.

The DVC mTECH major is not intended for transfer. Option 1 (DVC General Education) is advised for students who do not intend to 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 who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU GE).

Students must complete each of the courses required for the major with a “C” grade or higher. Students may not take a pass/no pass option for major courses. Certain courses may satisfy both a 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>
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<tr>
<td>ENGL-095</td>
<td>Studies in Writing</td>
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</tr>
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<td>ENGT-175</td>
<td>Introduction to Industrial Maintenance</td>
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<tr>
<td>ENGT-220*</td>
<td>Machine Technology II</td>
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</tr>
<tr>
<td>IT-110**</td>
<td>Modern Welding</td>
<td>3</td>
</tr>
<tr>
<td>MT-132**</td>
<td>Principles of Fluid Power Systems</td>
<td>3</td>
</tr>
<tr>
<td>MT-140**</td>
<td>Principles of Industrial Electrical Systems</td>
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</tr>
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</table>

**total minimum required units** 37

*May be taken at Laney College (MACH-210, MACH-220)

**Must be taken at Solano College**

Certificate of achievement - Industrial maintenance machinist/mechanic (mTECH)

This program prepares students for jobs in the manufacturing industry including industrial machinery mechanic and machinery maintenance worker. These jobs involve repairing, installing, adjusting, or maintaining industrial production and processing machinery or refinery and pipeline distribution systems. The labor market for this high-technology, high-wage occupations in Contra Costa Alameda and Solano counties is expected to be strong.
Courses include machining, industrial hydraulics and pneumatics, shop and field maintenance, welding, basic electricity, blueprint drawing and reading, basic drafting, mathematics, computer software, and technical reading and writing. Required courses are offered sequentially over a period of three semesters. This program is offered as a collaborative program with Solano College in Fairfield and Laney College in Oakland. Students may complete courses at any of the colleges in order to meet requirements. Some required courses are only offered at Laney College, Solano Community College or DVC. Students are advised to meet with a counselor or program advisor to develop an educational plan that meets their needs.

To earn a certificate of achievement, students must complete 12 core courses. Students must complete each course used to meet a program requirement with a “C” grade or higher.

**Program requirements**

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</tr>
</tbody>
</table>

**Total minimum units required** 37

*May be taken at Laney College (MACH-210, MACH-220).

**Must be taken at Solano College**

**ENGT-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

**ETNG-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 electrical and pneumatic principles will also be covered. CSU

**ENGT-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

**ENGT-220 Machine Technology II**

5 units  SC  

* 54 hours lecture/108 hours laboratory per term

*Prerequisite: ENGT-210 or equivalent

This course is a continuation of ENGT-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 – ENGL**

Obed Vazquez, 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 learning outcomes**

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.
English

Associate in arts degree

English

Associate in arts for transfer

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 GE). 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.

**major requirements**

<table>
<thead>
<tr>
<th>Group 1: Core reading and composition courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>complete at least 6 units from:</td>
<td></td>
</tr>
<tr>
<td>ENGL-122* Freshman English: Composition and</td>
<td>3</td>
</tr>
<tr>
<td>Reading</td>
<td></td>
</tr>
<tr>
<td>ENGL-123* Critical Thinking: Composition and</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td></td>
</tr>
<tr>
<td>ENGL-126* Critical Thinking: The Shaping of</td>
<td>3</td>
</tr>
<tr>
<td>Meaning in Language</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 2: Core genre</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>complete at least 3 units from:</td>
<td></td>
</tr>
<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>
</tr>
</tbody>
</table>

| Group 3: Core survey                       |      |
| complete at least 6 units from:            |      |
| ENGL-154 Shakespeare and His World         | 3    |
| ENGL-252 Early English Literature          | 3    |
| ENGL-253 Survey of Late English Literature  | 3    |
| ENGL-252 Survey of American Literature I (First Contact-1865) | 3 |
| ENGL-263 Survey of American Literature      | 3    |

| Group 4: electives - Specialized literature | units |
| and writing                               |      |
| complete at least 6 units from:           |      |
| ENGL-152 The Short Film                   | 3    |
| ENGL-162 Language, Literature and Culture | 3    |
| ENGL-163 Asian American Literature        | 3    |
| ENGL-164 Native American Literatures       | 3    |
| ENGL-166 African American Literature       | 3    |
| ENGL-167 Latin American Literature         | 3    |
| ENGL-168 The Literatures of America       | 3    |
| ENGL-170 World Mythology                  | 3    |
| ENGL-172 The Bible as Literature           | 3    |
| ENGL-173 Introduction to Gay and Lesbian Multicultural | 3 |
| Voices in Literature                      |      |
| ENGL-175 Science Fiction and Fantasy Literature | 3 |
| ENGL-176 The Graphic Novel as Literature   | 3    |
| ENGL-177 Children's Literature             | 3    |
| ENGL-190 Multicultural Literature by American Women | 3 |
| ENGL-222 Creative Writing                 | 3    |
| ENGL-223 Short Story Writing               | 3    |
| ENGL-244 Poetry Writing                    | 3    |
| ENGL-225 Creative Nonfiction Writing       | 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.

Associate in arts in English for transfer

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.

The associate in arts in English for transfer is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.
In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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

- ENGL-123 Critical Thinking: Composition and Literature .... 3
- ENGL-126 Critical Thinking: The Shaping of Meaning in Language ................................................................. 3

plus at least 6 units from:

- ENGL-252 Early English Literature ............................................. 3
- ENGL-253 Survey of Late English Literature ......................... 3
- ENGL-262 Survey of American Literature I (First Contact-1665) ................................................................. 3
- ENGL-263 Survey of American Literature II ......................... 3
- ENGL-272 Early World Literature ........................................... 3
- ENGL-273 Late World Literature ............................................ 3

plus at least of 3 units from:

- ENGL-124 The Nature of Language: An Introduction to Linguistics ................................................................. 3
- ENGL-150 Introduction to Literature ........................................ 3
- ENGL-151 The Short Story ...................................................... 3
- ENGL-154 Shakespeare and His World ...................................... 3
- ENGL-162 Language, Literature and Culture ....................... 3
- ENGL-163 Asian American Literature ..................................... 3
- ENGL-164 Native American Literature .................................. 3
- ENGL-166 African American Literature .................................. 3
- ENGL-167 Latin American Literature ..................................... 3
- ENGL-168 The Literatures of America .................................... 3
- ENGL-170 World Mythology ................................................... 3
- ENGL-172 The Bible as Literature .......................................... 3
- ENGL-173 Introduction to Gay and Lesbian Multicultural Voices in Literature ................................................................. 3

ENGL-175 Science Fiction and Fantasy Literature ............... 3
ENGL-177 Children’s Literature ............................................. 3
ENGL-222 Creative Writing .................................................. 3
ENGL-223 Short Story Writing ............................................. 3
ENGL-224 Poetry Writing ..................................................... 3
ENGL-225 Creative Nonfiction Writing .................................. 3

plus at least of 3 units from:

- any course not used in either group above, or:
  - ENGL-140 Tutor Training .................................................. 3
  - ENGL-152 The Short Film .................................................. 3
  - ENGL-153 Contemporary Poetry ....................................... 3
  - ENGL-176 The Graphic Novel as Literature ....................... 3
  - ENGL-180 Literature of the Drama ..................................... 3
  - ENGL-190 Multicultural Literature by American Women .... 3
  - JRNAL-120 News Writing Techniques ................................ 3

**total minimum required units 18**

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**ENGL-090 Introduction to College English**

2.5 units SC

- Non degree applicable
- 45 hours lecture per term
  - Recommended: Eligibility for ENGL-098 or equivalent

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.

**ENGL-091 Special Studies in Reading and Writing**

1 unit P/NP

- Non degree applicable
- 9 hours lecture/27 hours laboratory per term
  - Note: Sections for ESL students available

This course is a short-term, one-unit multi-topic class designed to develop specific skills in reading and writing. Topics include reading comprehension, effective reading strategies, spelling/vocabulary, sentence structure, and punctuation.

**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

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: ENGL-098 or 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-098A or equivalent  
- Note: ESL students are strongly encouraged to follow the ESL assessment process. ESL-098A 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-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.

ENGL-122  Freshman English: Composition and Reading  
3 units  LR  
- 54 hours lecture per term  
- Prerequisite: Successful completion of ENGL-116 and ENGL-118 or equivalent recommendation from assessment process or English AP score of 3

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. C-ID ENGL 120, 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. C-ID ENGL 165, CSU, UC

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  
• 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  Topics in English  
.5-3 units  
• Variable hours  
A supplemental course in English to provide a study of current concepts and problems in English and related substantive areas. Specific topics will be announced in the schedule of classes. CSU

ENGL-162  Language, Literature and Culture  
3 units  
• 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  
• 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  
• 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, oratorios, 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  
• 54 hours lecture per term  
• Recommended: ENGL-122 or equivalent  
This course is a study of the major works of fiction and poetry by African-American writers. Students will gain an awareness of main themes, concepts, and characteristics of this literature and its historical roots. Students will also explore African-American literature’s role in rhetoric, religion, philosophy, history, music, or other arts or literature. CSU, UC

ENGL-167  Latin American Literature  
3 units  
• 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  
• 54 hours lecture per term  
• Recommended: ENGL-122 or equivalent  
This course examines literary works of American authors from underrepresented groups: African American, Asian American, Mexican American, and Native American. We will read selected contributions from novels, plays, short stories, nonfiction and poetry to understand the influences that shape the literatures of America. CSU, UC

ENGL-170  World Mythology  
3 units  
• 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, 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-175 Science Fiction and Fantasy Literature
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
This course will offer reading, critical study, and discussion of science fiction as a literary form with consideration of major types, authors, historical development, the media in which science fiction has been presented, how it both mirrors and influences cultural trends, and how it functions as modern mythology. CSU, UC

ENGL-176 The Graphic Novel as Literature
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course focuses on the reading, critical analysis, and thoughtful discussion of graphic novels - or "art comics" - as a unique branch of literature. The course focuses on non-fiction (memoir and investigative reporting) and fiction (superhero, coming of age, experimental) texts, composed of image and word by significant creators in the field. Major consideration will be given to understanding the literary and artistic techniques used in composing "art comics," the historical and cross-cultural origins of the form, and the current significance of its growth in contemporary literature and culture. CSU, UC

ENGL-177 Children’s Literature
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course examines literature written for children as literature, applying the methods of literary criticism to that literature. The course also places the literature in a historical context, tracing its development from its earliest oral origins to the present, considering the contributions and points of view of various underrepresented populations including African American, Native American, European American, Asian American, and Hispanic. The course material includes literature from various cultures and from various time periods. CSU, UC

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. C-ID ENGL 200, CSU, UC

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

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

ENGL-225  Creative Nonfiction Writing  
3 units  SC  
• 54 hours lecture per term  
• Prerequisite: Eligibility for ENGL-122 or equivalent  
In this course, students analyze classic and contemporary narrative nonfiction writing, including memoir, travel, nature and personal essays, to identify the aspects and strategies of successful creative nonfiction essays. The readings represent the diverse perspectives of African-American, Native American, European American, Asian American, and Hispanic writers. Students then employ the identified literary techniques to plan and compose creative nonfiction essays with an emphasis on the strategies necessary to develop an authentic narrative voice. Students present their writing to the class and instructor for discussion, review, and revision suggestions. 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, canonicity, 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.
C-ID ENGL 130, CSU, UC

ENGL-263  Survey of American Literature
3 units  SC
• 54 hours lecture per term
• Prerequisite: ENGL-122 or equivalent
This course is a survey of major literary works produced by American writers from approximately 1865 to the present. Students will 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. C-ID ENGL 135, CSU, UC

ENGL-272  Early World Literature
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
This course introduces students to representative oral and written literature from cultures around the world from ancient times to the mid-seventeenth century in modern English translations. C-ID ENGL 140, 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. C-ID ENGL 145, 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 Vazquez, Dean
English Division
Faculty Office Building, Room 136

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Certificates of accomplishment
ESL conversation
Intermediate ESL reading and writing
Advanced ESL reading and writing

The English Department’s English as a Second Language (ESL) program consists of three sequential levels of skill development. At each level of the sequence, once course develops students’ reading skills, and one develops their writing skills. Supplemental courses focus on various topics, such as pronunciation, listening, conversation, and grammar. Completion of the ESL program sequence provides an entry point to college-level coursework for English language learners.

To earn a certificate of accomplishment in conversation, intermediate ESL reading and writing, or advanced reading and writing, students must complete the required courses (listed below) with a grade of “C” or higher.

Certificate of accomplishment – ESL conversation
required courses units
ESL-070  Conversation for Intermediate ESL Students... 2
ESL-072  Pronunciation/Listening Skills .................. 2
total minimum required units 4

Certificate of accomplishment – Intermediate ESL reading and writing
required courses units
ESL-076  Intermediate Reading and Comprehension Skills .................................................... 3
ESL-078  Intermediate Writing Skills .......................... 3
ESL-086  High Intermediate Reading Comprehension... 3
ESL-088  High Intermediate Writing Skills............... 3
total minimum required units 12
Certificate of accomplishment – Advanced ESL reading and writing

**CARER-130** Career and Major Exploration.......................... 1

**ESL-080** Grammar for High Intermediate ESL

Students ........................................................................... 2

**ESL-086** High Intermediate Reading Comprehension.... 3

**ESL-088** High Intermediate Writing Skills....................... 3

**ESL-090** Grammar for Advanced ESL Students .............. 2

**ESL-096A** Advanced ESL Reading and Study Skills ....... 3

**ESL-098A** Advanced ESL Writing ................................. 3

**ESL-096** Advanced ESL Reading and Study Skills ........ 3

**ESL-098** Advanced ESL Writing ................................. 3

**Total minimum required units** 17

**ESL-067** Low-Intermediate College English Skills

2 units  P/NP

- Non degree applicable
- 18 hours lecture/54 hours laboratory per term

This course is designed for English learners at the low-intermediate 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-070** Conversation for Intermediate ESL Students

2 units  P/NP

- Non degree applicable
- 18 hours lecture/54 hours laboratory per term
- Recommended: ESL-067 or equivalent

This course is supplemental to ESL-076 and ESL-078 and is designed for students at the intermediate level to improve conversational skills. Through discussion of a variety of topics, students work on listening skills, pronunciation, understanding and using American idioms and developing oral fluency.

**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 placement through the ESL assessment process or equivalent

This is an intermediate-level course designed for English learners in reading comprehension, writing, and study skills to enhance 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 placement through the ESL assessment process or equivalent

This intermediate-level course is for English learners who need to improve their ability to write correct sentences and who are ready to begin writing paragraphs and narratives. Course work will include work on grammar, usage, parts of speech, punctuation, idioms and reading short passages. Writing assignments will include sentences, paragraphs and narratives.

**ESL-080** Grammar for High Intermediate ESL Students

2 units  SC

- Non degree applicable
- 36 hours lecture per term
- Recommended: ESL-078 or equivalent

This course is supplemental to ESL-086 and ESL-088 and is designed for ESL students at the high intermediate level. After a brief review of sentence patterns, word order, simple present and present continuous verb tenses, the course covers simple past, past progressive and present perfect tenses; modal auxiliaries; and sentence types. Students will also learn methods for identifying and correcting their mistakes during the editing process.

**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 equivalents

This course is designed for ESL students 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-086 High Intermediate Reading Comprehension
3 units SC
- Non degree applicable
- 54 hours lecture/18 hours laboratory per term
- Recommended: ESL-076 or placement through the ESL assessment process or equivalent

This high-intermediate course is for ESL students who need preparation for college-level reading and related study skills. Class activities include reading and writing about academic texts; vocabulary development; listening and note-taking practice; and academic orientation. Writing is an important part of this class because through their writing, students will show their reading comprehension and what they have learned.

### ESL-088 High Intermediate Writing Skills
3 units SC
- Non degree applicable
- 54 hours lecture/18 hours laboratory per term
- Recommended: ESL-078 or placement through the ESL assessment process or equivalent

This high-intermediate course is designed for ESL students who need to improve their writing skills to prepare for college-level writing and who are ready to begin writing essays. Course work will include instruction in sentence, paragraph, and essay structure; principles of grammar and mechanics; identification and correction of errors; voice-audience awareness; revising and editing techniques. Writing assignments will include paragraphs and short essays. Students will demonstrate their understanding of reading assignments through writing.

### ESL-090 Grammar for Advanced ESL Students
2 units SC
- Non degree applicable
- 36 hours lecture per term
- Recommended: ESL-086 and ESL-088 or equivalents

This course is supplemental to ESL-096A and ESL-098A and is designed for ESL students at the advanced level. The course covers sentence combining, compound-complex sentences, embedded clauses, direct and indirect objects, use of gerunds and infinitives, passive voice, use of articles, and advanced editing strategies for longer essays.

### ESL-091 Topics in Vocational English Skills
.5-3 units SC
- Non degree applicable
- Variable hours

This course is designed for advanced English as a Second Language students. The focus of this course will change depending on the vocational area that it serves. It 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 of a course required for a certificate of achievement or completion.

### ESL-096A Advanced ESL 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 placement through the ESL assessment process or equivalents

This course focuses on the needs of ESL students at the advanced level to develop critical reading and writing skills. 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 Advanced ESL Writing
3 units SC
- Non degree applicable
- 54 hours lecture/18 hours laboratory per term
- Recommended: ESL-086 and ESL-088 or placement through the ESL assessment process or equivalents

This course focuses on the needs of ESL students at the advanced level to help them increase their confidence and fluency in writing well-organized college essays. Following the steps of the writing process, students will compose thesis-driven essays for an academic audience, with coherent paragraphs and a variety of sentence structures. Students will read, analyze and write about a variety of short texts. Students will learn editing strategies to identify and correct common sentence level errors of advanced ESL learners, as well as errors in mechanics and usage by editing and revising their own and others’ writing.
Environmental science

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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is available 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 GE). 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>
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<th>Units</th>
</tr>
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<tbody>
<tr>
<td>BIOISC-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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<td>Introductory Chemistry</td>
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<tr>
<td>CHEM-120</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>BIOISC-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>3</td>
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<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</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>
</tr>
</tbody>
</table>

total minimum required units 29

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-166  Intermediate Digital Editing  
3 units  SC  
• 36 hours lecture/54 hours laboratory per term  
• Prerequisite: FILM-165 or equivalent  
• Recommended: Eligibility for ENGL-122 or equivalent  
• Note: Same as ARTDM-146 and BCA-165  
This intermediate course is designed to advance the student’s non-linear digital editing skills to a professional level. The emphasis will be on the utilization of software programs such as Adobe Premiere Pro. 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 Electronic Scriptwriting
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Same as BCA-290
This is a beginning film and digital media writing class. The course will focus on the planning, outlining and structuring of an original feature-length fiction screenplay as well as short-form digital formats such as commercials, news, product introductions, sports and reality programming. The student will study film and digital media terms and formats, work with treatments, scenarios and shooting scripts, analyze film and television clips, shorts, 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  Introduction to Film Production
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
In this course, students produce short, single-camera digital videos by applying introductory techniques such as camera operation and lens selection, audio recording, script development and visual concepts, lighting setup, and basic digital editing. CSU, UC (credit limits may apply to UC - see counselor)

FILM-293  Intermediate Film Production
3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: FILM-292 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
In this course students produce 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

FILM-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

FILM-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

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 term; four years equal three college terms.

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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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 GE). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a pass/no pass 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.
French

complete a minimum of 20 units from:
FRNCH-120 First Term French ........................................ 5
FRNCH-121 Second Term French ........................................ 5
FRNCH-220 Third Term French .......................................... 5
FRNCH-221 Fourth Term French ......................................... 5
FRNCH-230 Fifth Term French .......................................... 3
FRNCH-231 Sixth Term French .......................................... 3

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 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 ........................................ 5
FRNCH-121 Second Term French ........................................ 5
FRNCH-220 Third Term French .......................................... 5
FRNCH-221 Fourth Term French ......................................... 5
FRNCH-230 Fifth Term French .......................................... 3
FRNCH-231 Sixth Term French .......................................... 3

List B
FRNCH-121 Second Term French ........................................ 5
FRNCH-155 First Term Conversational French .................... 3
FRNCH-156 Second Term Conversational French .................. 3
FRNCH-157 Third Term Conversational French ..................... 3
FRNCH-220 Third Term French .......................................... 5
FRNCH-221 Fourth Term French ......................................... 5

total minimum required units 13

FRNCH-120 First Term French
5 units SC
• 90 hours lecture/18 hours laboratory per term
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
5 units SC
• 90 hours lecture/18 hours laboratory per term
• Recommended: FRNCH-120 or equivalent
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
.3-4 units SC
• Variable hours
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
3 units SC
• 54 hours lecture/18 hours laboratory per term
• Note: This course does not satisfy the academic requirements of the FRNCH-120-121 series
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
3 units SC
• 54 hours lecture/18 hours laboratory per term
• Recommended: FRNCH-155 or equivalent
• Note: This course does not satisfy the academic requirements of the FRNCH-120-121 series
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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts degree  
Social/cultural geography

Associate in arts for transfer  
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 General Education Option 2 (IGETC) or Option 3 (CSU GE). Option 1 (DVC General Education) is not generally advised.

To earn an associate in arts degree with a major in social-cultural 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</th>
<th>Units</th>
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<tr>
<td>ANTHR-130 Cultural Anthropology</td>
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<tr>
<td>GEOG-120 Physical Geography</td>
<td>3</td>
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<tr>
<td>GEOG-130 Cultural Geography</td>
<td>3</td>
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<tr>
<td>GEOG-135 World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-162 Maps and Cartography</td>
<td>3</td>
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<tr>
<td>SOCI-131 The Urban Community</td>
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</table>

total minimum required units 18

Associate in arts in geography for transfer

The associate in arts in geography for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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>
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<th>Course</th>
<th>Units</th>
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<td>GEOG-121 Physical Geography Laboratory</td>
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<td>GEOG-130 Cultural Geography</td>
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plus at least 6 units from:

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<td>GEOG-125 Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-135 World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-140 Introduction to Weather</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-162 Maps and Cartography</td>
<td>3</td>
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plus at least 6 units from:

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</thead>
<tbody>
<tr>
<td>ANTHR-130 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>GEO-120 Physical Geology</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 19

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.
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.

**Associate in science degree - Meteorology**

The meteorology major at Diablo Valley College offers 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 GE). Option 1 (DVC General Education) is not generally advised.

**Major Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-126</td>
<td>Advanced Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-127</td>
<td>Introduction to Global Positioning Systems</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>Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Maps and Cartography</td>
<td>4</td>
</tr>
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</table>

**Plus at least 6 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<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>
<td>1</td>
</tr>
<tr>
<td>COMSC-110</td>
<td>Introduction to Programming</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-138</td>
<td>Advanced Microsoft Office Using Visual Basic</td>
<td>2</td>
</tr>
<tr>
<td>COMSC-172</td>
<td>UNIX and Linux Administration</td>
<td>2</td>
</tr>
<tr>
<td>COMSC-255</td>
<td>Programming with Java</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Minimum Required Units:** 31

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**Associate in science degree - Physical Geography**

The physical geography major at Diablo Valley College offers students the opportunity to study the earth's 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 GE). 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>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>GEOG-120</td>
<td>Physical Geography</td>
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<tr>
<td>GEOG-121</td>
<td>Physical Geography Laboratory</td>
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<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 I</td>
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</tr>
</tbody>
</table>

**Total Minimum Required Units:** 31
Geography

plus at least 4 units from:
BIOSC-126 Nature Study and Conservation .................. 4
GEOG-125 Introduction to Geographic Information Systems (GIS) .................. 3
GEOG-127 Introduction to Global Positioning Systems .................. 3
GEOL-120 Physical Geology .................................. 3
GEOL-122 Physical Geology Laboratory .................. 1
GEOL-125 Geology of California .................. 3

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.

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
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

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 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 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
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

plus at least 3 units from:
ANTHR-126 Introduction to Archeological Field Methods .................. 3
BIOSC-126 Nature Study and Conservation .................. 4
BIOSC-170 Environmental Science .................. 3
COOP-170 Occupational Work Experience Education .................. 1
COMSC-100L Introduction to Computer Software .................. 1
ENGIN-126 Computer Aided Design and Drafting - AutoCAD .................. 4
GEOG-120 Physical Geography .................. 3
GEOG-121 Physical Geography Laboratory .................. 1
GEOG-162 Maps and Cartography .................. 3
GEOG-298 Independent Study .................. 0.5-3
GEOL-120 Physical Geology .................. 3
GEOL-122 Physical Geology Laboratory .................. 1

total minimum required units 18

total minimum required units 31
GEOG-120  Physical Geography  
3 units  SC  
• 54 hours lecture per term  
• Recommended: MATH-090 or MATH-090E or MATH-090SP 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. C-ID GEOG 110, 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, UC

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. C-ID GEOG 155, 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-129  Field Data Acquisition and Management  
3 units  SC  
• 54 hours lecture per term  
• Recommended: GEOG-124 or equivalent

This course covers the fundamentals of the Global Navigation Satellite System (GNSS) using the Global Positioning System (GPS), for data acquisition, management, and integration of data with Geographic Information Systems (GIS). Students will learn to design, implement, manage a field project, and export the information to a compatible GIS platform for advanced analyses. CSU
GEOG-130  Cultural Geography  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This course examines 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. C-ID GEOG 120, 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. C-ID GEOG 125, CSU, UC

GEOG-140  Introduction to Weather  
3 units  SC  
• 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 imageries and radar imageries. 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-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

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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science degree
- Geology

Associate in science for transfer
- 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 GE). 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
GEOL-125 Geology of California .......................... 3
GEOL-135 Introduction to Field Geology ................. 2

total minimum required units 38
In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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.

### Associate in science in geology for transfer

The associate in science in geology for transfer at Diablo Valley College (DVC) prepares students to transfer to a California State University (CSU) or other four-year college or university to earn a bachelor’s degree in geology, geological science, or similarly named earth science field. In addition, the course work prepares students for a wide range of professional opportunities across many scientific disciplines.

The associate in science in geology for transfer consists of 28 units of study, including eight 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 and a year of chemistry courses. Though not specifically required by this transfer major, it is highly recommended that students also take a year of physics courses that are typically required for a bachelor’s degree at four-year institutions.

The associate in science in geology for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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

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<tr>
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<th>Course Title</th>
<th>Units</th>
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</thead>
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<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
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</tr>
<tr>
<td>CHEM-121</td>
<td>General College Chemistry II</td>
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<tr>
<td>GEOL-120</td>
<td>Physical Geology</td>
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</tr>
<tr>
<td>GEOL-121</td>
<td>Earth and Life through Time</td>
<td>3</td>
</tr>
<tr>
<td>GEOL-122</td>
<td>Physical Geology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOL-124</td>
<td>Earth and Life through Time Laboratory</td>
<td>1</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>
</tbody>
</table>

**Total minimum required units**: 28

### GEOL-120 Physical Geology

- **3 units** LR
- **54 hours lecture per term**
- Recommended: MATH-090 or MATH-090E or MATH-090SP or one year of high school algebra and eligibility for ENGL-122 or equivalent

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 equivalent (may be taken previously)
- Recommended: MATH-090E or MATH-090E or MATH-090SP 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). 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. C-ID GEOL 100L, 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 laboratories 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.
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.

List A
GRMAN-120 First Term German .......................... 5
GRMAN-121 Second Term German ...................... 5
GRMAN-220 Third Term German ....................... 5
GRMAN-221 Fourth Term German ..................... 5
GRMAN-230 Fifth Term German ....................... 3
GRMAN-231 Sixth Term German ...................... 3

List B
GRMAN-121 Second Term German ...................... 5
GRMAN-155 First Term Beginning Conversational German ........................................ 3
GRMAN-156 Second Term Beginning Conversational German ..................................... 3
GRMAN-157 Third Term Beginning Conversational German .................................. 3
GRMAN-220 Fourth Term German ..................... 5

Total minimum required units 13

GRMAN-120 First Term German
5 units SC
• 90 hours lecture/18 hours laboratory per term
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

GRMAN-121 Second Term German
5 units SC
• 90 hours lecture/18 hours laboratory per term
• Recommended: GRMAN-120 or equivalent
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

GRMAN-150 Topics in German
.3-.4 units SC
• Variable hours
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

GRMAN-155 First Term Beginning Conversational German
3 units SC
• 54 hours lecture/18 hours laboratory by arrangement per term
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

GRMAN-156 Second Term Beginning Conversational German
3 units SC
• 54 hours lecture/18 hours laboratory by arrangement per term
• Recommended: GRMAN-155 or equivalent
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

GRMAN-157 Third Term Beginning Conversational German
3 units SC
• 54 hours lecture/18 hours laboratory by arrangement per term
• Recommended: GRMAN-156 or equivalent
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  

This course is an intensive study of selected literary works (prose, poetry, drama) from the German-speaking countries with an emphasis on the language and the content of the readings. Different writing styles and oral communication, such as debates, oratory, jokes, and storytelling are explored. 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  

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**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 learning outcomes**  

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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 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 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 GE). 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.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI-124 Health and Wellness</td>
<td>3</td>
</tr>
<tr>
<td>HSCI-140 Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI-115 Nutrition and Health: Personal Applications</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-101 Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-120 Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

| Co-op-180 Internship in Occupational Work | 1-4   |
| COUNS-120 Student Success                 | 3     |
| HSCI-126 Stress Management and Health     | 3     |
| HSCI-127 Drugs, Health and Society        | 3     |
| HSCI-164 Health and Healing Systems: Cross Cultural Perspectives | 3 |
| HSCI-170 Women’s Health                   | 3     |
| HSCI-230 Advanced First Aid/CPR           | 3     |
| HSCI-298 Independent Study                | 0-5-3 |
| KINES-240 Principles of Optimizing Human Performance | 3 |
| LS-121 Information Literacy and Research Skills | 1 |
| NUTRI-120 Sports Nutrition: Fueling the Athlete | 3 |
| NUTRI-160 Nutrition: Science and Applications | 3 |

| total minimum required units             | 18    |

HSCI-124  
**Health and Wellness**

3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-116/118 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: 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

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. C-ID PSY 130, 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 appropriate 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

HEATING, VENTILATION, AIR CONDITIONING, REFRIGERATION - HVACR

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

Possible career opportunities
Upon successful completion of the Heating Ventilation Air Conditioning and Refrigeration (HVACR) program, students will have the necessary knowledge and skills for a career in residential, commercial, or industrial HVACR, including careers as Heating and Air Conditioning Mechanics and Installers and as Refrigeration Mechanics and Installers. Program content includes an introduction to the electrical and mechanical principles used in air conditioning and refrigeration, including meters, circuits, contactors, relays, thermostats, pressure switches, motors, overloads, controls, and boilers. Reading and drawing of schematic diagrams, troubleshooting, and safe electrical practices are also covered.

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/studentsupport.

Associate in science degree
Heating, ventilation, air conditioning, and refrigeration

Certificate of achievement
Heating, ventilation, air conditioning, and refrigeration

Certificate of accomplishment
Heating, ventilation, air conditioning, and refrigeration

Associate in science degree – Heating, ventilation, air conditioning, and refrigeration (HVACR)
In collaboration with Plumbers-Steamfitters-Refrigeration Union Local 342 www.ua342.org, DVC currently offers three five-year apprenticeship programs: steamfitting, plumbing, and HVACR. 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.

While completing their HVACR apprenticeship, DVC students can earn awards at three levels of completion: a certificate of accomplishment, a certificate of achievement, and an associate in science degree. To earn an associate in science degree with a major in HVACR, students must complete 20 out of 31 core courses to meet their individual educational and career goals. In addition they must complete 18 general education units. 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.

Certificate of achievement - Heating ventilation air conditioning and refrigeration (HVACR)
In collaboration with Plumbers-Steamfitters-Refrigeration Union Local 342 www.ua342.org, DVC currently offers three five-year apprenticeship programs: steamfitting, plumbing, and HVACR. 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.

While completing their HVACR apprenticeship, DVC students can earn awards at three levels of completion: a certificate of accomplishment, a certificate of achievement, and an associate in science degree. To earn a certificate of achievement, students must complete 14 out of 18 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 in science degree.

**required courses**

**complete at least 28 units from:**

- HVACR-110 Beginning Electrical Theory.................. 2
- HVACR-111 Mechanical Refrigeration Theory............. 2
- HVACR-112 Advanced Electrical Theory/Beginning Schematics............................................. 2
- HVACR-113 The Refrigeration Cycle...................... 2
- HVACR-114 Intermediate Electrical I.......................... 2
- HVACR-115 Intermediate Mechanical Refrigeration I........... 2
- HVACR-116 Intermediate Electrical II.......................... 2
- HVACR-117 Intermediate Mechanical Refrigeration II........... 2
- HVACR-118 Electrical Troubleshooting I...................... 2
- HVACR-119 Electrical Troubleshooting II...................... 2
- HVACR-120 Introduction to Direct Digital Controls............. 2
- HVACR-121 Introduction to Variable Frequency Drives........ 2
- HVACR-122 Introduction to Market Refrigeration Systems .... 2
- HVACR-123 Introduction to Pneumatic Controls............. 2
- HVACR-124 Introduction to Boilers......................... 2
- HVACR-125 Advanced Compressor and Motor Theory........... 2
- HVACR-126 Start Test Balance: Water Side I............... 2
- HVACR-127 Start Test Balance: Air Side I.................... 2
- HVACR-128 Start Test Balance: Water Side II............... 2
- HVACR-129 Start Test Balance: Air Side II.................... 2

**total minimum required units** 28

**Certificate of accomplishment – Heating ventilation air conditioning and refrigeration (HVACR)**

In collaboration with Plumbers-Steamfitters-Refrigeration Union Local 342 [www.ua342.org](http://www.ua342.org), DVC currently offers three five-year apprenticeship programs: steamfitting, plumbing, and HVACR. 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.

While completing their HVACR apprenticeship, DVC students can earn awards at three levels of completion: a certificate of accomplishment, a certificate of achievement, and an associate in science degree. To earn a certificate of accomplishment, students must complete five out of seven core courses. Students must complete each course used to meet the 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 accomplishment also meet some of the requirements of the certificate of achievement and major for the associate in science degree.

**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, overload, 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 basic liquid and vapor control, metering devices, design and construction of system piping including techniques of leak detection, dehydration of systems, charging methods, recovery and troubleshooting. In addition, safety, torch techniques, cutting, fitting and brazing of various copper projects will be explored. Further, the techniques for isometric drawing and pipe symbols for soldering and brazing will be practiced.
Heating, ventilation, air conditioning, refrigeration

HVACR-112 Advanced Electrical Theory/Beginning Schematics
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 continues to explore concepts of electrical principles used in air conditioning and refrigeration including installation of heating, cooling, and refrigeration systems; basic electric motors and their components; contactors, relays, and overloads; thermostats, pressure switches, and other electric control devices; heating control devices; 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 pre-set 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.

HISTORY – HIST
Obed Vazquez, 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.

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts for transfer
History

Associate in arts in history for transfer
The associate in arts in history for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:
• Complete 60 semester CSU-transferable units.
• Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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 Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST-120</td>
<td>History of the United States before 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-121</td>
<td>History of the United States after 1865</td>
<td>3</td>
</tr>
<tr>
<td>HIST-140</td>
<td>History of Western Civilization to the Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>HIST-141</td>
<td>History of Western Civilization since the Renaissance</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>
</tr>
</thead>
<tbody>
<tr>
<td>HIST-124</td>
<td>History of California</td>
<td>3</td>
</tr>
<tr>
<td>HIST-125</td>
<td>History of the United States: A Mexican American Perspective</td>
<td>3</td>
</tr>
<tr>
<td>HIST-126</td>
<td>The American West</td>
<td>3</td>
</tr>
<tr>
<td>HIST-127</td>
<td>African American Perspective History of the US to 1865</td>
<td>3</td>
</tr>
<tr>
<td>HIST-128</td>
<td>African American Perspective History of the US after 1865</td>
<td>3</td>
</tr>
<tr>
<td>HIST-129</td>
<td>History of Asians and Pacific Islanders in the United States</td>
<td>3</td>
</tr>
<tr>
<td>HIST-135</td>
<td>History of Latin America-The Colonial Period</td>
<td>3</td>
</tr>
<tr>
<td>HIST-136</td>
<td>History of Latin America-The National Period</td>
<td>3</td>
</tr>
<tr>
<td>HIST-150</td>
<td>History of East Asia (to 1600)</td>
<td>3</td>
</tr>
<tr>
<td>HIST-151</td>
<td>History of East Asia (from 1600-Present)</td>
<td>3</td>
</tr>
<tr>
<td>HIST-170</td>
<td>History of Women in the United States before 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-171</td>
<td>History of Women in the United States after 1865</td>
<td>3</td>
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</tbody>
</table>

**HIST-122 Critical Reasoning in History**

<table>
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<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST-122</td>
<td>Critical Reasoning in History</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total minimum required units**: 18

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**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 1865**

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 1865 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, African Americans, 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 time. 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 before 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 before 1877 emphasizing women’s life experiences within the context of larger historical changes. The course will examine the commonalties of women’s experiences and explore the impacts of race, ethnicity, class, and region on women’s lives. The course will also explore how women fostered and were affected by social, political, economic, and cultural transformations in the United States as well as the impact of the US, and California Constitutions and the activities of federal, state, and local governments on the experiences of women. CSU, UC (credit limits may apply to UC - see counselor)

### HIST-171  History of Women in the United States after 1865
3 units SC
- 54 hours lecture per term
- **Recommended:** Eligibility for ENGL-122 or equivalent

This course is a survey of United States history after 1865 to present emphasizing women's life experiences within the context of larger historical changes. The course will also examine the commonalties 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 and Instruction 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

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### 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 learning outcomes**

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).
Certificates of achievement
Arboriculture
Horticulture foundations
Landscape construction and management
Landscape architecture and design
Retail Nursery

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
HORT-110* Introduction to Arboriculture ........................................ 4
HORT-120* Soil Science and Management ........................................ 3
HORT-134* Landscape Irrigation ..................................................... 3
HORT-137L Pruning Laboratory ...................................................... 1
HORT-137L Pruning Laboratory ...................................................... 1
HORT-141** Tree Identification ...................................................... 3
HORT-141L Tree Identification Laboratory .................................... 1
HORT-143** Shrub Identification .................................................... 3
HORT-143L Shrub Identification Laboratory .................................. 1
HORT-179 Arboriculture ............................................................... 3
HORT-179L Arboriculture Laboratory ........................................... 1
HORT-187 Sustainable Water Practices ........................................ 2.5

* requirement - Horticulture foundations certificate
** restricted elective - Horticulture foundations certificate

Certification 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.

required courses
HORT-110 Introduction to Horticulture .......................................... 4
HORT-120 Soil Science and Management ....................................... 3
HORT-134 Landscape Irrigation .................................................... 3
HORT-137L Pruning Laboratory .................................................... 1

plus at least 3 units from:
HORT-141 Tree Identification ....................................................... 3
HORT-143 Shrub Identification ....................................................... 3

plus at least 1 unit from:
HORT-125 Plants and Diseases .................................................... 3
HORT-132 Pest Management ......................................................... 1

total minimum required units 15

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 Contractors Association's CLT examination and/or the California Association of Nurseriesperson'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.
**Horticulture**

**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>
<td>COOP-180</td>
<td>Internship in Occupational Work Experience Education</td>
</tr>
<tr>
<td>HORT-110*</td>
<td>Introduction to Horticulture</td>
</tr>
<tr>
<td>HORT-120*</td>
<td>Soil Science and Management</td>
</tr>
<tr>
<td>HORT-120L</td>
<td>Soil Science and Management Laboratory</td>
</tr>
<tr>
<td>HORT-132</td>
<td>Pest Management</td>
</tr>
<tr>
<td>HORT-133</td>
<td>Landscape Construction</td>
</tr>
<tr>
<td>HORT-134*</td>
<td>Landscape Irrigation</td>
</tr>
<tr>
<td>HORT-135</td>
<td>Landscape Estimating and Contract Documents</td>
</tr>
<tr>
<td>HORT-137L*</td>
<td>Pruning Laboratory</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
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<th>Units</th>
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</thead>
<tbody>
<tr>
<td>HORT-141**</td>
<td>Tree Identification</td>
</tr>
<tr>
<td>HORT-143**</td>
<td>Shrub Identification</td>
</tr>
</tbody>
</table>

**plus at least 1.5 units from:**

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HORT-130</td>
<td>Turf Grass Management</td>
</tr>
<tr>
<td>HORT-146</td>
<td>Ornamental Grasses</td>
</tr>
</tbody>
</table>

**total minimum required units** 24.5

**Certificate of achievement - Retail nursery**

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.

**required courses**

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<td>Pruning Laboratory</td>
</tr>
<tr>
<td>HORT-141**</td>
<td>Tree Identification</td>
</tr>
<tr>
<td>HORT-145</td>
<td>Groundcovers and Vines Identification</td>
</tr>
<tr>
<td>HORT-147</td>
<td>Annuals and Perennials Identification</td>
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<tr>
<td>HORT-148L</td>
<td>California Native Plants Laboratory</td>
</tr>
<tr>
<td>HORT-165</td>
<td>New Plant Introductions</td>
</tr>
</tbody>
</table>

**total minimum required units** 32.5
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 landscape prevocational and vocational training skills for a garden, residential, and commercial setting.

HORT-110  Introduction to Horticulture
4 units  SC
• 54 hours lecture/54 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course will explore the biology and economics of growing and caring for plants, emphasizing basic horticulture practices and the biological and environmental principles on which they are based. The students are exposed to practical applications of horticulture science: propagation, plant identification, pest/disease identification and control options, environmentally safe use of pesticides, and factors that influence plant growth. There will also be an overview of the different aspects of the horticulture industry. CSU, UC

HORT-120  Soil Science and Management
3 units  SC
• 54 hours lecture per term
• Recommended: HORT-110 and eligibility for ENGL-122 or equivalents
An introductory course on soil science and management of soils in landscapes. Soil biology, physics and chemistry are integrated with geological concepts in this applied scientific course. Landscape projects and solutions are evaluated in terms of their soil-related elements. CSU, UC

HORT-120L  Soil Science and Management Laboratory
1 unit  SC
• 54 hours laboratory per term
• Prerequisite: HORT-120 or equivalent (may be taken concurrently)
• Recommended: HORT-110 and eligibility for ENGL-122 or equivalents
This is a laboratory course that supplements HORT-120, Soil Science and Management. Field trips, demonstrations and experiments will deepen the methodological knowledge of students in this field. CSU

HORT-125  Plant Pests and Diseases
3 units  SC
• 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
This course will introduce students to insect and disease pests associated with plants. Key concepts in applied ecology of pest and beneficial species, disease identification, and control methodologies using Integrated Pest Management (IPM) and Plant Health Care models are emphasized. CSU

HORT-130  Turf Grass Management
1.5 units  SC
• 18 hours lecture/27 hours laboratory per term
This course will introduce the study of turf grass management including identification, production, installation, and maintenance. Regional irrigation methodology, fertilization regimes, pests and diseases of turf, and new cultivars are emphasized. 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
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
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 Nurseriesmen; 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 Nurseriesmen; 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 Nurseriesmen’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 the 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  Annals 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  Annals 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 arboretum. CSU

HORT-148L California Native Plants Laboratory
1 unit  SC
- 54 hours laboratory per term
- Note: Field trips will be required for this course

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
2-4 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/27 hours laboratory per term
- Recommended: HORT-110 and eligibility for ENGL-122 or equivalents

This course will introduce students to the principles and practices of plant propagation from seed and vegetative material to marketable nursery stock. The key concepts of physiological processes, environmental requirements and techniques required for successful plant production will be covered. 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 include greenhouse design and structure, manufacturing and operation, and 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

In this course students learn the application of newly released plants in the nursery industry. Students are instructed in the selecting, testing and marketing processes of new plant introductions. Topics covered include the taxonomic identity, growth habits, climactic requirements, liabilities, and geographical origins of new plants. CSU

HORT-166  Fall Plant Production
1 unit  SC
• 54 hours laboratory per term
• Recommended: HORT-160 and eligibility for ENGL-122 or equivalents

This laboratory course will provide instruction on the principles and practices of fall plant production. Students will participate in greenhouse management, scheduling of plant production, seed-starting, vegetative propagation 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

This laboratory course will provide instruction on the principles and practices of spring container production. Greenhouse management, the scheduling of spring and summer plant production, seed-starting and vegetative propagation, and the marketing of spring and summer grown containerized nursery stock will be examined. 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. Topics include but are not limited to: tree anatomy and structure, positioning and timing of limb removal, crown reduction and rejuvenation techniques, as well as fruit stimulation of orchard species. This course will prepare career-oriented students for employment and eventual testing for the International Society of Arboriculture (ISA) Certified Arborist, or Certified Tree Worker Program(s); HORT-179L will follow study guides prepared by the ISA, and include exposure to climbing techniques, knots safety, chainsaw operation, and equipment maintenance. 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

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

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-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

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

HUMANITIES – 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Arts and humanities
Associate in arts degree - Arts and humanities

This degree program is designed for students who wish to study a broad range of college courses and engage in interdisciplinary study not limited to a single discipline.

The associate of arts in arts and humanities is comprised of courses that integrate the different arts: music, dance, visual arts, architecture, literature, drama, philosophy and history. The degree 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. Arts and 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 arts and 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 GE). General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer.

To earn an associate in arts degree in arts and 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.

**major requirements**

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
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<tbody>
<tr>
<td>HUMAN-105 Introduction to Humanities: Arts and Ideas</td>
<td>3</td>
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<tr>
<td>HUMAN-108 The Roots of Hell</td>
<td>3</td>
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<tr>
<td>HUMAN-110 Introduction to Humanities: Ancient Civilizations (to 500 A.D.)</td>
<td>3</td>
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<tr>
<td>HUMAN-111 Introduction to Humanities: Middle Ages and Renaissance (500 A.D. - 1700 A.D.)</td>
<td>3</td>
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<tr>
<td>HUMAN-112 Introduction to Humanities: The Modern World (1700-present)</td>
<td>3</td>
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<td>HUMAN-115 Introduction to Humanities: The American Multicultural Experience</td>
<td>3</td>
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<td>HUMAN-116 The Arts and Culture of Asia</td>
<td>3</td>
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<td>HUMAN-118 Film, Fiction, and Criticism</td>
<td>3</td>
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<tr>
<td>HUMAN-123 American Popular Culture</td>
<td>3</td>
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**complete at least 3 units from:**

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
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<tbody>
<tr>
<td>PHILO-120 Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-122 Introduction to Ethics</td>
<td>3</td>
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<tr>
<td>PHILO-130 Logic and Critical Thinking</td>
<td>3</td>
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<tr>
<td>PHILO-140 Introduction to Judeo-Christian Tradition</td>
<td>3</td>
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<tr>
<td>PHILO-141 Introduction to the Philosophy of Religion</td>
<td>3</td>
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<tr>
<td>PHILO-150 Topics in Philosophy</td>
<td>3</td>
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<td>PHILO-220 Comparative Religion</td>
<td>3</td>
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<tr>
<td>PHILO-224 History of Western Philosophy: Pre-Socratic to Medieval Period</td>
<td>3</td>
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<tr>
<td>PHILO-225 History of Western Philosophy: Descartes to Present</td>
<td>3</td>
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**complete at least 9 units from:**

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
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<tbody>
<tr>
<td>ARTHS-190 Topics in Art History</td>
<td>3</td>
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<tr>
<td>ARTHS-193 History of Asian Art</td>
<td>3</td>
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<tr>
<td>ARTHS-195 History of Prehistoric and Ancient Art</td>
<td>3</td>
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<tr>
<td>ARTHS-196 History of Medieval and Renaissance Art</td>
<td>3</td>
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<tr>
<td>ARTHS-197 History of Baroque to Early 20th Century Art</td>
<td>3</td>
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<tr>
<td>ARTHS-199 Contemporary Art History</td>
<td>3</td>
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<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>
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<tr>
<td>DRAMA-142 Multicultural Perspectives in American Theater</td>
<td>3</td>
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<tr>
<td>DRAMA-181 Literature of World Drama: 17th Century to Present</td>
<td>3</td>
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<tr>
<td>ENGL-123 Critical Thinking: Composition and Literature</td>
<td>3</td>
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<tr>
<td>ENGL-126 Critical Thinking: The Shaping of Meaning in Language</td>
<td>3</td>
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<tr>
<td>ENGL-150 Introduction to Literature</td>
<td>3</td>
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<td>ENGL-151 The Short Story</td>
<td>3</td>
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<td>ENGL-154 Shakespeare and His World</td>
<td>3</td>
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<tr>
<td>ENGL-155 Topics in English</td>
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<tr>
<td>ENGL-170 World Mythology</td>
<td>3</td>
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<td>ENGL-180 Literature of the Drama</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>
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<tr>
<td>MUSIC-110 Music Appreciation</td>
<td>3</td>
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<tr>
<td>MUSIC-112 America’s Music - A Multicultural Perspective</td>
<td>3</td>
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<tr>
<td>MUSIC-114 World Music</td>
<td>3</td>
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<tr>
<td>MUSIC-117 History of Rock and R&amp;B</td>
<td>3</td>
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<tr>
<td>MUSIC-118 History of Jazz</td>
<td>3</td>
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</tbody>
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**total minimum required units** 18
### HUMAN-105 Introduction to Humanities: Arts and Ideas
3 units SC
- 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, religion, science and technology, 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

INTERDISCIPLINARY STUDIES – INTD

INTD-140  Tutor Training
1 unit  SC
• 18 hours lecture per term
• Note: Students who want to tutor in the Pleasant Hill Campus English Lab must take ENGL-140 instead of INTD-140. Students who want to tutor in the Pleasant Hill Campus Math Lab must take MATH-140 instead of INTD-140.
This one unit course will provide students with an introduction to the principles of effective tutoring. Students will learn the strategies of tutoring that foster independent learning and will use strategies such as questioning technique to deepen critical thinking. 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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 GE). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a pass/no pass 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.

**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** 20

**ITAL-120 First Term Italian**

5 units SC
- **90 hours lecture/18 hours laboratory per term**
- Recommended: ITAL-120 or equivalent

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-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 subjective 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Japanese
Certificate of achievement
Japanese

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 GE). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a pass/no pass 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.

**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.

**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

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

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

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

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, and expand conversational skills and vocabulary with 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. This course includes further study of contemporary and traditional Japanese cultural elements. 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, 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

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts for transfer
Journalism

Associate in arts in journalism for transfer
The journalism program prepares students in the writing, reporting and critical thinking skills required for jobs in the news media and for transfer to a journalism program at a four-year institution. Career options include copy editor, script writer, broadcast journalist, news reporter, magazine writer, columnist, public information officer, online writer, freelance writer, advertising copy writer, editor, and photojournalist. Some career options may require more than two years of college study.

The associate in arts in journalism for transfer is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.
In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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 Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JRNAL-110</td>
<td>Mass Media of Communication</td>
<td>3</td>
</tr>
<tr>
<td>JRNAL-120</td>
<td>Newwriting Techniques</td>
<td>3</td>
</tr>
<tr>
<td>JRNAL-126</td>
<td>News Production Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>JRNAL-127</td>
<td>News Production Laboratory II</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 6 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-160</td>
<td>Photography I</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>COMM-123</td>
<td>Argumentation and Debate</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-126</td>
<td>Critical Thinking: The Shaping of Meaning in Language</td>
<td>3</td>
</tr>
<tr>
<td>ECON-220</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-221</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-121</td>
<td>Introduction to United States Government</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-220</td>
<td>Comparative Politics</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units 18**

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 wartime, 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  Newwriting 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. 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 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-130  Multimedia Reporting
2-4 units  SC
- Variable hours
- Recommended: Eligibility for ENGL-122 or equivalent

This course is an introduction to multimedia storytelling tools for journalism. Students will explore techniques that use tools such as text, photographs, video or audio to tell news or feature stories on the Internet or through social media. It will also include techniques in digital research. CSU

JRNAL-160  Writing the Feature Story
3 units  SC
- 54 hours lecture per term
- Recommended: ENGL-118 or equivalent

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 – 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.

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science degrees
Fitness instruction  
Kinesiology  
specializations  
coaching  
sports and recreation management  
Sports medicine/athletic training

Certificates of achievement
Coaching  
Group exercise instruction  
Personal training

Associate in science degree - Fitness instruction
The associate in science degree in fitness instruction is a two-year course of study designed for students who are interested in a career in the fitness industry and/or wish to transfer to a four-year institution in kinesiology or related major. It will expose students to many facets of the fitness industry and is appropriate for those students who wish to become a personal trainer and/or group exercise instructor. Completion of the degree will also prepare students to sit for one of the national personal training or group exercise instructor certification examinations. Students who intend to transfer to a four-year institution must consult with program faculty and college counselors to insure that the requirements for transfer to appropriate institutions are met. Possible programs of study at the baccalaureate level include exercise science, strength and conditioning, preparation for a teaching credential or other specialty area under the kinesiology umbrella.

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.

<table>
<thead>
<tr>
<th>major requirements</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI-230 Advanced First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>KINES-234 Introduction to Sports Medicine and Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>KINES-240 Principles of Optimizing Human Performance</td>
<td>3</td>
</tr>
<tr>
<td>KINES-242 Exercise Techniques and Physical Fitness Testing</td>
<td>1</td>
</tr>
<tr>
<td>KINES-246 Sport and Exercise Psychology</td>
<td>3</td>
</tr>
<tr>
<td>KINES-250 Professional Aspects of Personal Training</td>
<td>3</td>
</tr>
<tr>
<td>KINES-252 Professional Aspects of Group Fitness Training</td>
<td>1.5</td>
</tr>
<tr>
<td>KINES-254 Practical Experience in Personal Training and Fitness Instruction I</td>
<td>2</td>
</tr>
<tr>
<td>KINES-255 Practical Experience in Personal Training and Fitness Instruction II</td>
<td>2</td>
</tr>
</tbody>
</table>

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 3 units from:
| NUTRI-120 Sports Nutrition: Fueling the Athlete | 3 |
| NUTRI-160 Nutrition: Science and Applications | 3 |

plus at least 2 units from:
| KNACT-146A Theory and Practice of Strength Training and Fitness I | 0.5-2 |
| KNACT-148A Beginning Power Lifting | 0.5-2 |
Kinesiology

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

**recommended courses**

- BUSMG-191 Small Business Management ................................ 3
- KINES-230 Overview of Sports Medicine and Fitness Professions ... 3
- KINES-232 Introduction to Sports Massage ................................ 1.5
- KINES-235 Advanced Sports Medicine and Athletic Training ........ 3
- KINES-258 Personal Training National Examination Preparation ..... 2

**total minimum required units**: 34.5

Associate in science degree - Kinesiology

The associate in science degree in kinesiology offers students two areas of specialization from which to choose: sport 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, exercise science, sport management or other specialty area related to the discipline of kinesiology. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU GE). 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

**plus at least 3 units from:**

- BUS-240 Business Statistics ................................................ 3
- MATH-135 College Algebra .................................................. 3
- MATH-142 Elementary Statistics with Probability ...................... 4

**plus at least 3 units from:**

- BIOSC-101 Fundamentals of Biological Science ............................ 3
- BIOSC-102 Fundamentals of Biological Science with Laboratory .... 3
- BIOSC-116 Human Biology .................................................. 3
- BIOSC-139 Human Anatomy ................................................ 5
- BIOSC-140 Human Physiology .............................................. 5

**coaching emphasis:**

**plus at least 3 units from:**

- KNICA-200 Theory of Coaching Individual Sports ....................... 3
- KNICA-205 Theory of Coaching Team Sports ................................ 3
- KNICA-204 Theory of Coaching Football .................................. 3

**plus at least 2 units from:**


**or**


* 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 I .................................................. 2
- KINES-223 Practical Experience in Sport and Recreation Management II .................................................. 2

**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 GE). 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
KINES-238 Clinical Experiences in Sports Medicine and Athletic Training III ........................................... 2
KINES-240 Principles of Optimizing Human Performance ........................................... 3
KINES-242 Exercise Techniques and Physical Fitness Testing ........................................... 1
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

Certificate of achievement - Coaching

The coaching certificate of achievement is a one-year course of study that prepares students to be an effective recreational, youth or secondary school coach. Specific sport options offered include baseball, basketball, cross-country, football, soccer, softball, swimming, tennis, track and field, volleyball and water polo. 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

HSCI-230 Advanced First Aid/CPR ........................................... 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

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: *


or

KNICA-200, KNICA-202A or B, KNICA-203A or B, KNICA-206, KNICA-210, KNICA-215, KNICA-216, KNICA-217, KNICA-223, KNICA-224, KNICA-225

*Activity courses or intercollegiate athletic participation must be in the selected area of coaching emphasis.

total minimum required units 21
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

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>HSCI-230</td>
<td>Advanced First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>KINES-234</td>
<td>Introduction to Sports Medicine and Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>KINES-240</td>
<td>Principles of Optimizing Human Performance</td>
<td>3</td>
</tr>
<tr>
<td>KINES-242</td>
<td>Exercise Techniques and Physical Fitness Testing</td>
<td>3</td>
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<tr>
<td>KINES-246</td>
<td>Sport and Exercise Psychology</td>
<td>3</td>
</tr>
<tr>
<td>KINES-252</td>
<td>Professional Aspects of Group Exercise Instruction</td>
<td>1.5</td>
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plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>NUTRI-115</td>
<td>Nutrition and Health: Personal Applications</td>
<td>3</td>
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<tr>
<td>NUTRI-120</td>
<td>Sports Nutrition: Fueling the Athlete</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI-160</td>
<td>Nutrition: Science and Applications</td>
<td>3</td>
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plus at least 2 units from a minimum of two courses from:

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<thead>
<tr>
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<tbody>
<tr>
<td>KNACT-140A</td>
<td>Beginning Hatha Yoga</td>
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<tr>
<td>KNACT-140B</td>
<td>Intermediate Hatha Yoga</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-114A</td>
<td>Stretch and Yoga for Sport</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-120</td>
<td>Physical Fitness</td>
<td>0.5-2</td>
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<tr>
<td>KNACT-122A</td>
<td>Beginning Body Sculpting</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-124A</td>
<td>Beginning Hip, Thighs and Abs</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-126</td>
<td>Aerobics/Step Aerobics</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-128A</td>
<td>Beginning Cardio Kickboxing</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-140A</td>
<td>Stationary Cycling</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-144A</td>
<td>Beginning Super Circuit</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-195A</td>
<td>Beginning Plyometrics and Agility</td>
<td>0.5-2</td>
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</table>

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
- Recommended: KINES-220 or equivalent
- 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 Kinesiology, Athletics, and Dance Department 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-222 or equivalent
- Formerly PETHE-217

This is an internship course that continues to enhance students' 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 Kinesiology, Athletics, and Dance Department. 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 a variety of sports medicine, fitness and health care professions. Information presented will include job descriptions, educational and certification/licensure requirements, work environment and potential salary ranges. 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 and practice of massage and its role in treating and preventing athletic injuries as well as preparing athletes for competition. Students will apply and 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
Kinesiology

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 in the area of sports medicine. Students will observe and assist athletic trainers in evaluating and treating DVC athletes. This may be augmented by off-campus observations of physicians and/or other health care providers. 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. Students 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)
- Formerly PETHE-282

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 assessments 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-293

This course addresses the scientific approach to the psychological component of sport and exercise performance. Topics such as personality, motivation, group dynamics, and leadership 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-240 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 nationally certified as a personal trainer, effectively work with clients, including those within special populations, conduct assessments and create appropriate fitness program design. 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 small group fitness/strength training setting. Principles and management of appropriate progression, regression and modification will be emphasized. Program design, exercise sequencing, training variables, use of strength equipment/modalities and practical teaching skills 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 conduct assessments on clients for fitness programs and program design development. Also included will be the observation of the adaptation/adjustment (appropriate progressions/regressions) of fitness program specifics to meet the changing needs of the client's 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-295
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 other entry students (mentoring) in the development of long and short term fitness goals and appropriate program design. CSU

KINES-258 Personal Training National Exam Preparation
2 units SC
- 36 hours lecture per term
- Recommended: KINES-250 or equivalent
- Formerly PETHE-282
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 athletes 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 study 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

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 skill of swimming. 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, UC (credit limits may apply to UC - see counselor)

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, UC (credit limits may apply to UC - see counselor)

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, UC (credit limits may apply to UC - see counselor)

KNACT-111A  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-111A  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, UC (credit limits may apply to UC - see counselor)

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, UC (credit limits may apply to UC - see counselor)

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, UC (credit limits may apply to UC - see counselor)

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-128
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
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, UC (credit limits may apply to UC - see counselor)

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, UC (credit limits may apply to UC - see counselor)

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, UC (credit limits may apply to UC - see counselor)  

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, UC (credit limits may apply to UC - see counselor)  

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, UC (credit limits may apply to UC - see counselor)
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, ellipticals, and stairmasters. Information about periodization program design will be presented. CSU, UC (credit limits may apply to UC - see counselor)

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, ellipticals, and stairmasters. Information regarding biomechanics and its implications for strength training will be presented. CSU, UC (credit limits may apply to UC - see counselor)

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, UC (credit limits may apply to UC - see counselor)

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, UC (credit limits may apply to UC - see counselor)

KNACT-162  Bowling  
.5-2 units SC
- Variable hours
- Note: Mandatory fee required
- 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
• Note: Mandatory fee required
• 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, UC (credit limits may apply to UC - see counselor).

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, UC (credit limits may apply to UC - see counselor).

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, UC (credit limits may apply to UC - see counselor)

KNACT-195A Beginning Plyometrics and Agility Training for Female Athletes
.25-1 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
.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, UC (credit limits may apply to UC - see counselor)

KNACT-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 PE-298
An opportunity for advanced students to study special interests under the direction of the faculty. CSU

KNACT-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 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 - KNCMB

Formerly Physical Education Combative - PECMB

Christine Worsley, Dean
Kinesiology, Athletics and Dance Division
Physical Education Office Building, Room 104

KNCMB-110 Self-Defense
.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  
.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  
.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  Beginning Aikido  
.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 non-competitive, non-fighting discipline, 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 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

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, UC (credit limits may apply to UC - see counselor)

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, beginning center adagio and allegro work, and ballet movement combinations in the center. The course also includes history of ballet and principles as a contemporary 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, UC

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, isolations and beginning jazz dance choreography. The class includes the evolution of jazz dance from African and Haitian dance to contemporary jazz dance technique. 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, UC

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-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-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

KINESIOLOGY INTERCOLLEGIATE ATHLETICS – KNICA

Formerly Physical Education Intercollegiate - PEIC

Christine Worsley, Dean
Kinesiology, Athletics and Dance Division
Physical Education Office Building, Room 104

KNICA-098  Intercollegiate Pre-Participation Orientation  
.3 unit  
• 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
Kinesiology intercollegiate athletics

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 will 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
- 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) formerly PEIC-203B.

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) formerly PEIC-204.

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) formerly PEIC-205.

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) formerly PEIC-206.

KNICA-210 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-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) formerly PEIC-210.

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) formerly PEIC-215.

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) formerly PEIC-216.

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) formerly PEIC-217.
Kniesiology intercollegiate athletics

**KNICA-218   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-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)
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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Certificate of achievement - Library technology
The library technology certificate program has been placed 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 entering fall 2014 are advised that it will not be possible to complete the requirements for the degree/certificate. Continuing students are advised that 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 department chair. Any student either in progress or intending to start this program should contact the department chairperson for advisement.

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

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

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
### Library studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Type</th>
<th>Lectures/Hours</th>
<th>Recommended</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-105</td>
<td>Reference and Research Services: Tools and Techniques</td>
<td>3</td>
<td>LR</td>
<td>54</td>
<td>Eligibility for ENGL-122</td>
<td>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</td>
</tr>
<tr>
<td>L-108</td>
<td>Acquisition of Library Resources</td>
<td>1</td>
<td>LR</td>
<td>18</td>
<td>Eligibility for ENGL-122</td>
<td>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 deselecting resources. CSU</td>
</tr>
<tr>
<td>L-109</td>
<td>Delivering Library Services: Issues, Theory, and Techniques</td>
<td>2</td>
<td>SC</td>
<td>36</td>
<td>Eligibility for ENGL-122</td>
<td>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</td>
</tr>
<tr>
<td>L-110</td>
<td>Job Search Skills for Library Careers</td>
<td>1</td>
<td>SC</td>
<td>18</td>
<td>Eligibility for ENGL-122</td>
<td>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</td>
</tr>
<tr>
<td>L-111</td>
<td>Storytelling</td>
<td>2</td>
<td>SC</td>
<td>36</td>
<td>Eligibility for ENGL-122</td>
<td>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</td>
</tr>
<tr>
<td>L-112</td>
<td>Internet Skills for Library Personnel</td>
<td>1</td>
<td>SC</td>
<td>18</td>
<td>Eligibility for ENGL-122</td>
<td>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</td>
</tr>
<tr>
<td>L-150</td>
<td>Topics in Library Technology</td>
<td>.3-4</td>
<td>SC</td>
<td>Variable</td>
<td>Eligibility for ENGL-122</td>
<td>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</td>
</tr>
<tr>
<td>LS-099</td>
<td>Introduction to Library and Research Skills</td>
<td>.5</td>
<td>P/NP</td>
<td>9</td>
<td>Non degree applicable</td>
<td>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.</td>
</tr>
<tr>
<td>LS-121</td>
<td>Information Literacy and Research Skills</td>
<td>1</td>
<td>P/NP</td>
<td>9/27</td>
<td>Eligibility for ENGL-122</td>
<td>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</td>
</tr>
</tbody>
</table>
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

Michael Norris, Interim 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science for transfer
Mathematics

Associate in science 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-192 Analytic Geometry and Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-193 Analytic Geometry and Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-292 Analytic Geometry and Calculus III</td>
<td>5</td>
</tr>
<tr>
<td>plus at least 3 units from*:</td>
<td></td>
</tr>
<tr>
<td>MATH-194 Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH-294 Differential Equations</td>
<td>5</td>
</tr>
</tbody>
</table>

plus at least 3 units from*:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-142 Elementary Statistics with Probability</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH-194 Linear Algebra</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH-195 Discrete Mathematics</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH-294 Differential Equations</td>
<td>5</td>
<td></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  In-Progress Prealgebra with Arithmetic Review Self-Paced
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  In-Progress Elementary Algebra Self-Paced
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  In-Progress Intermediate Algebra Self-Paced
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  In-Progress College Algebra Self-Paced
4 units P/NP
• Non degree applicable
• 216 hours laboratory per term
• Recommended: Placement through the assessment process or MATH-120 or MATH-120SP 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-090 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-114  Geometry  
3 units  SC  
- 54 hours lecture per term  
- Prerequisite: Placement through the assessment process or MATH-090 or MATH-090E 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-090E or MATH-090SP or equivalent  
This course will expand upon the material covered in elementary algebra. Topics will include special products and factoring, 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.
Mathematics

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-090E 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, UC

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, radical, exponential, absolute value, and logarithmic functions; systems of equations; theory of polynomial equations; analytic geometry. 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. This course presents a study of functions and their graphs, including polynomial, rational, radical, exponential, absolute value, and logarithmic functions; systems of equations; theory of polynomial equations; analytic geometry. Other topics include 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 science 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. CSU  

MATH-150  Topics in Mathematics  
3-.4 units    SC  
• Variable hours  
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-term 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.  
This course is an in-depth treatment of functions and their graphs, including polynomial, rational, logarithmic, exponential and trigonometric functions. Conic sections, nonlinear systems, vectors and complex numbers are also covered. Use of a graphing calculator or a computer algebra system is required. 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)
Mathematics

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 tree, 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 study 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  

MUSIC – MUSIC  
Michael Almaguer, Dean  
Applied and Fine Arts Division  
Business and Foreign Language Building, Room 204  

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 learning outcomes  
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.  

Associate in arts degree  
Music  

Associate in arts for transfer  
Music
**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 GE). 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>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td><strong>applied music</strong></td>
<td></td>
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<tr>
<td>MUSIC-100 Applied Music</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>theory and musicianship</strong></td>
<td></td>
</tr>
<tr>
<td>MUSIC-122 Theory and Musicianship I</td>
<td>4</td>
</tr>
<tr>
<td>MUSIC-123 Theory and Musicianship II</td>
<td>4</td>
</tr>
<tr>
<td>MUSIC-222 Theory and Musicianship III</td>
<td>4</td>
</tr>
<tr>
<td>MUSIC-223 Theory and Musicianship IV</td>
<td>4</td>
</tr>
<tr>
<td><strong>piano proficiency</strong></td>
<td></td>
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<tr>
<td>MUSIC-150 Beginning Piano I</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-151 Beginning Piano II</td>
<td>1</td>
</tr>
<tr>
<td><strong>large ensemble</strong></td>
<td></td>
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<tr>
<td>plus a minimum of 4 units from:</td>
<td></td>
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<tr>
<td>MUSIC-135 Vocal Jazz Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-136 Jazz Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-140 Wind Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-162 Concert Choir</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-166 Chamber Singers</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-180 Diablo Valley Masterworks Chorale</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-236 Night Jazz Band</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-240 Symphonic Band</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-290 DVC Philharmonic Orchestra</td>
<td>1</td>
</tr>
</tbody>
</table>

**total minimum required units** 25

*Credit by examination available

**recommended courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSIC-110 Music Appreciation</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>

**Associate in arts in music for transfer**

The associate in arts in music for transfer major at Diablo Valley College (DVC) offers students the opportunity to attain the basic skills and knowledge needed as preparation for careers in music and further undergraduate study. Required courses include applied music, theory and musicianship, 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 baccalaureate programs in music.

The associate in arts in music for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:

- Complete 60 semester CSU-transferable units.
- Complete the California State University-General Education pattern (CSU GE) OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
- Complete a minimum of 18 semester units in the major.
- Obtain a minimum grade point average (GPA) of 2.0.
- Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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.
**Music**

major requirements:
MUSIC-100  Applied Music........................................... 1.5*
MUSIC-122  Theory and Musicianship I............................. 4
MUSIC-123  Theory and Musicianship II............................ 4
MUSIC-222  Theory and Musicianship III............................ 4
MUSIC-223  Theory and Musicianship IV............................ 4

plus at least 4 units from:
MUSIC-135  Vocal Jazz Ensemble.................................. 1
MUSIC-136  Jazz Ensemble........................................... 1
MUSIC-140  Wind Ensemble........................................... 1
MUSIC-162  Concert Choir........................................... 1
MUSIC-166  Chamber Singers......................................... 1
MUSIC-240  Symphonic Band.......................................... 1
MUSIC-290  DVC Philharmonic Orchestra.......................... 1

**total units for the major** 26

*must be taken 4 times (total 6 units)

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**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
- Prerequisite: Audition required
- Note: In order to meet music major transfer requirements, students should be concurrently enrolled in a major performance ensemble (choir, band, orchestra, jazz ensemble) and in a theory and musicianship class (MUSIC-122, 123, 222, 223). Students are encouraged to meet with a counselor for further advisement.

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. C-ID MUS 160, CSU, UC

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**MUSIC-101  Beginning Guitar**
1 unit SC
- 54 hours laboratory 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

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**MUSIC-102  Intermediate Guitar**
1 unit SC
- 60 hours laboratory 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. 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

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**MUSIC-103  Guitar Ensemble**
1 unit SC
- May be repeated three times
- 60 hours laboratory 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

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**MUSIC-104  Advanced Guitar Ensemble**
1 unit SC
- May be repeated three times
- 60 hours laboratory 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

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**MUSIC-105  Blues, Rock, and R&B Performance**
1 unit SC
- May be repeated three times
- 60 hours laboratory 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
• 60 hours laboratory 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
• 60 hours laboratory per term
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  Music Appreciation
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
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
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
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 and South Asia
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is a survey of music cultures in the Middle East/ North Africa and South Asia. Students will study traditional and popular musical traditions in rural, urban, and diaspora communities. Local, national, and global contexts for music will be demonstrated by the examination of the ways in which hybrid musical forms emerge through contact with Western music. CSU, UC

MUSIC-116  Native American Music of the Americas
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course provides a survey of musical traditions, contributions and influences of Native peoples in North, Central, and South America. Musical traditions and genres affected by social, historical, and political conditions will be presented. Global issues and events will be explained through analyzing the ways in which new or hybrid musical forms emerge through contact with non-Native musics. An emphasis on music used as a tool of resistance and its role in maintaining identity will be analyzed within the processes of cultural continuity and change. The course uses concepts from ethnomusicology and anthropology to promote the idea that music and culture are inseparable. 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  
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  
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-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 singing, rhythmic training, ear training, dictation, and keyboard realization; and basic compositional skills. C-ID MUS 125, 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. C-ID MUS 130, MUS 135, CSU, UC  

MUSIC-127  Jazz Theory and Improvisation  
2 units  SC  
- 18 hours lecture/36 hours laboratory per term/18 hours laboratory by arrangement per term  
This is an introductory course to the study of jazz theory with special emphasis upon spontaneous improvisation in the jazz tradition. Students will perform in class. CSU, UC  

MUSIC-130  Jazz Workshop  
1 unit  SC  
- May be repeated three times  
- 72 hours laboratory per term  
- Prerequisite: Audition  
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-133  Opera Theater  
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: Audition  
This course provides training and experience for vocalists in the production and presentation of opera including comprehensive rehearsal and performance. Students will be assigned chorus and/or solo parts to perform on their own. All students will be given the opportunity to learn applicable elements of stagecraft and opera performance. CSU  

MUSIC-134  Musical Theater Workshop  
1 unit  SC  
- 72 hours laboratory per term  
- Prerequisite: Audition  
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  
- 72 hours laboratory per term  
- Prerequisite: Audition  
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. C-ID MUS 180, CSU, UC
MUSIC-136  Jazz Ensemble  
1 unit  SC  
- May be repeated three times  
- 72 hours laboratory per term  
- Prerequisite: Audition  
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. C-ID MUS 180, CSU, UC  

MUSIC-137  Jazz Combos  
1-2 units  SC  
- May be repeated three times  
- Variable hours  
- Prerequisite: Audition  
This is an advanced course made up of small jazz combos (instrumental and/or vocal) that rehearse and perform a variety of jazz styles. Students will improvise, sight read, and perform in a variety of small group settings, which may include off-campus venues, concerts, and festivals. CSU, UC  

MUSIC-140  Wind Ensemble  
1 unit  LR  
- May be repeated three times  
- 54 hours laboratory per term  
- Prerequisite: Audition  
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. C-ID MUS 180, CSU, UC  

MUSIC-142  Woodwind Ensemble  
1 unit  SC  
- May be repeated three times  
- 54 hours laboratory per term  
- Prerequisite: Audition  
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  
- 72 hours laboratory per term  
- Prerequisite: Audition  
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-146  Jazz Piano  
1 unit  SC  
- 72 hours laboratory 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-150  Beginning Piano I  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: MUSIC-150 or equivalent  
This course provides group instruction in piano for students who has had 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 for those 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  
- 54 hours laboratory per term  
- Recommended: MUSIC-150 or equivalent  
This course provides group instruction in piano for students who has had 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 for those studying primarily for personal enjoyment. CSU, UC  

MUSIC-152  Beginning Woodwind Instruments  
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: MUSIC-151 or equivalent  
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 laboratory 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 laboratory 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 laboratory per term

This course provides beginning snare drum, keyboard marimba 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
- 72 hours laboratory per term
- Prerequisite: Audition

This course is the study, rehearsal and public performance of standard choral literature for mixed voices. New literature will be studied each term. C-ID MUS 180, CSU, UC

### MUSIC-166  Chamber Singers
1 unit  SC
- May be repeated three times
- 54 hours laboratory per term
- Prerequisite: Audition

Students will study and perform ancient through contemporary chamber choir literature including music influenced by non-Western cultures. C-ID MUS 180, CSU, UC

### MUSIC-168  Percussion Ensemble
1 unit  SC
- May be repeated three times
- 72 hours laboratory per term
- Prerequisite: Audition

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 laboratory per term

Students will study and practice the fundamentals of vocal tone production, breathing, and vocal placement. Emphasis will be placed on song interpretation and vocal pedagogy. CSU, UC

### MUSIC-171  Jazz and Popular Solo Voice
1 unit  SC
- 54 hours laboratory 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-176  String Ensemble
1 unit  LR
- May be repeated three times
- 72 hours laboratory per term
- Prerequisite: Audition

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-179  Intermediate Applied Voice
1 unit  SC
- 54 hours laboratory 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, UC

### MUSIC-180  Diablo Valley Masterworks Chorale
1 unit  SC
- May be repeated three times
- 72 hours laboratory per term
- Prerequisite: Audition

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-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. C-ID MUS 140, MUS 145, 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. C-ID MUS 150, MUS 155, CSU, UC

MUSIC-236  Night Jazz Band
1 unit  SC
- May be repeated three times
- 72 hours laboratory per term
- Prerequisite: Audition
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
- 72 hours laboratory per term
- Prerequisite: Audition
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. C-ID MUS 180, CSU, UC

MUSIC-250  Intermediate Piano I
1 unit  SC
- 54 hours laboratory per term
- Recommended: MUSIC-151 or equivalent
This course is an introduction to group study of piano at the intermediate level. The class emphasizes the development of technical and interpretive skills essential for playing early-intermediate keyboard music in Baroque and Classical styles. Methods of preparation based on an understanding of period/composer-specific performance practice will be addressed. This course is essential for the serious musician and those wishing to refine technical and interpretive understanding. CSU, UC

MUSIC-251  Intermediate Piano II
1 unit  SC
- 72 hours laboratory per term
- Recommended: MUSIC-250 or equivalent
This course is for the continued group study of piano at the intermediate level. The class emphasizes the development of technical and interpretive skills essential for playing intermediate keyboard music in Romantic and Contemporary Period styles with attention to interpretation and technique. CSU

MUSIC-252  Piano Ensemble
1 unit  SC
- May be repeated three times
- 72 hours laboratory per term
- Prerequisite: Audition
This course is for the study and performance of piano music for multiple pianists and for piano music with vocalists and instrumentalists from a variety of classical and popular styles. 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 Master Class
1 unit  SC
- May be repeated three times
- 72 hours laboratory per term
- Prerequisite: Audition
This class is a weekly forum for pianists to perform solo repertoire. After performing, students are given constructive comments and direction from the instructor in a master class format. There are weekly topics of discussion about elements of performing, and students produce four in-class and two public performances as a result of these endeavors. New keyboard works from the Baroque, Classical, Romantic, and Contemporary Period repertory will be studied each semester. Audition required. CSU, UC
MUSIC-256 Pedagogy for Studio Music Teachers
1 unit SC
• 72 hours laboratory 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-290 DVC Philharmonic Orchestra
1 unit SC
• May be repeated three times
• 72 hours laboratory 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.

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. C-ID MUS 180, 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

MUSIC INDUSTRY STUDIES – MUSX

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

Possible career opportunities
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, sound technician, and tour coordinator. Many careers require more than two years of study.

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts degree
Music industry studies

Certificate of achievement
Music industry studies

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 GE).
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**

- MUSX-172 Introduction to Electronic Music and MIDI
- MUSX-173 Advanced Electronic Music
- MUSX-174 Introduction to Pro Tools
- MUSX-175 Advanced Pro Tools
- MUSX-181 Introduction to the Music Industry

**plus at least 9 units from:**

- COOP-170 Occupational Work Experience Education
- MUSX-124 Introduction to Music Production and Multi-Track Recording
- MUSX-125 Advanced Music Production and Multi-Track Recording
- MUSX-177 Introduction to Reason
- MUSX-178 Sound for Picture
- MUSX-182 Songwriting
- MUSX-270 Applied Projects in Music Industry Studies

**total minimum required units** 24

**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, arranger, 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.

**required courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSX-172</td>
<td>Introduction to Electronic Music and MIDI</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-173</td>
<td>Advanced Electronic Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-174</td>
<td>Introduction to Pro Tools</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-175</td>
<td>Advanced Pro Tools</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-181</td>
<td>Introduction to the Music Industry</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 9 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOP-170</td>
<td>Occupational Work Experience Education</td>
<td>1-4</td>
</tr>
<tr>
<td>MUSX-124</td>
<td>Introduction to Music Production and Multi-Track Recording</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-125</td>
<td>Advanced Music Production and Multi-Track Recording</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-177</td>
<td>Introduction to Reason</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-178</td>
<td>Sound for Picture</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-182</td>
<td>Songwriting</td>
<td>3</td>
</tr>
<tr>
<td>MUSX-270</td>
<td>Applied Projects in Music Industry Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 24

**MUSX-124 Introduction to Music Production and Multi-Track Recording**

3 units SC  
- 54 hours lecture per term  
- Formerly MUSIC-124

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

**MUSX-125 Advanced Music Production and Multi-Track Recording**

3 units SC  
- 54 hours lecture per term  
- Recommended: MUSX-124 or equivalent  
- Formerly MUSIC-125

This course extends basic practical music production and multi-track recording skills to include complex projects, integration of acoustic and digital recording elements, and use of current computer software in the mixing process. CSU

**MUSX-172 Introduction to Electronic Music and MIDI**

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.  
- Formerly MUSIC-172

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

**MUSX-173 Advanced Electronic Music**

3 units SC  
- 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term  
- Recommended: MUSX-172 or equivalent  
- Note: Students may petition to repeat this course when software or hardware is changed.  
- Formerly MUSIC-173

This advanced course builds upon the knowledge and technical skills developed in MUSX-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 & editing, effects processing, mixing, and digital audio file management and conversion, sampling, synthesis, and advanced MIDI sequencing. CSU
**MUSX-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.  
- Formerly MUSIC-174  

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 multitrack digital audio directly to hard disk. Topics will include digital multitrack recording, effects processing and digital audio mixing techniques. CSU

**MUSX-175  Advanced Pro Tools**  
3 units  SC  
- 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term  
- Recommended: MUSX-174 or equivalent  
- Note: Students may petition to repeat this course when software or hardware is changed.  
- Formerly MUSIC-175  

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

**MUSX-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.  
- Formerly MUSIC-177  

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

**MUSX-178  Sound for Picture**  
3 units  SC  
- 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term  
- Recommended: MUSX-174 or equivalent  
- Note: Students may petition to repeat this course when software or hardware is changed.  
- Formerly MUSIC-178  

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

**MUSX-181  Introduction to the Music Industry**  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly MUSIC-181  

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

**MUSX-182  Songwriting**  
3 units  SC  
- 54 hours lecture per term  
- Formerly MUSIC-182  

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
**MUSX-270  Applied Projects in Music Industry Studies**
3 units  SC
- 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
- Recommended: MUSX-124, 172, 174, 181 or equivalents
- Formerly MUSIC-270

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

**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 that 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 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)
Possible career opportunities
The diverse range of subjects examined and the multi-disciplinary approach taken within the oceanography program prepares students for a variety of career paths. Courses focus on biological, physical, geological and chemical aspects of oceanography. Many oceanographers are employed as researchers and/or educators by public and private research institutions, universities, and colleges. Students graduating with degrees in oceanography or aquatic science fields may work as laboratory or field technicians; water monitoring specialists; for environmental protection, consulting and nonprofit firms; as observers aboard fishing vessels; or in the natural resource management fields. Limited numbers are employed to work with marine animals at aquariums, theme parks, or research facilities. Most career options are likely to require more than two years of college study.

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

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 statewide 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-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 will not receive credit for Fundamentals of Oceanography OCEAN-102

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 statewide 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

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
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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.
**Philosophy**

**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 advisor 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 GE). 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.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHILO-120 Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-122 Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-130* Logic and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-224 History of Western Philosophy: Pre-Socratic to Medieval Period</td>
<td>3</td>
</tr>
</tbody>
</table>

| total minimum required units | 12 |

*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. C-ID PHIL 100, 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. C-ID PHIL 120, CSU, UC

**PHILO-130 Logic and Critical Thinking**

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-160  Introduction to Social and Political Philosophy  
3 units  SC  
- 54 hours lecture per term  
- Recommended: PHILO-120 or equivalent  
This course is an introduction to the major authors, central issues, and political and philosophical perspectives as presented through classical and contemporary readings and selections. Philosophers studied include Plato, Aristotle, Hobbes, Locke, Mill, Rawls and Nozick. Topics include the nature of democracy, fascism, justice, rights, law, liberty, political authority, political principles, and consequences with an emphasis on understanding these political theories as normative rather than descriptive. Critical analysis of each perspective in political philosophy will be engaged.  
CSU  

PHILO-170  Symbolic Logic  
3 units  SC  
- 54 hours lecture per term  
- Recommended: PHILO-130 or equivalent; eligibility for ENGL-122 or equivalent  
This course introduces the principles of valid deductive reasoning and includes a study of formal techniques of sentential and predicate logic. Students will learn how to use truth-tables for propositional connectives and interpretations for statements of first-order logic using mathematical theory. The conclusion of the course will engage students in issues such as the completeness of propositional calculus, “fuzzy logic,” and deontic logic. C-ID PHIL 210, 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-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

Possible career opportunities
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, photographic sales, sports photographer, stock photographer, studio and wedding photography, theater production photographer, travel and stock photography, wedding and event photographer.

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 or MATH-090E or MATH-090SP (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 study 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.

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in science for transfer
Physics

ASSOCIATE IN SCIENCE IN PHYSICS FOR TRANSFER

The associate in science in physics for transfer is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major.

In order to earn the degree, students must:
• Complete 60 semester CSU-transferable units.
• Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.

• Complete a minimum of 18 semester units in the major.
• Obtain a minimum grade point average (GPA) of 2.0.
• Earn a grade of “C” or higher in all courses required for the major.

Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor’s degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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’s 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.

MATH-192 Analytic Geometry and Calculus I............ 5
MATH-193 Analytic Geometry and Calculus II.......... 5
MATH-292 Analytic Geometry and Calculus III......... 5
PHYS-130 Physics for Scientists and Engineers A: Mechanics and Wave Motion......................... 4
PHYS-230 Physics for Scientists and Engineers B: Heat and Electo-Magnetism........................ 4
PHYS-231 Physics for Scientists and Engineers C: Optics and Modern Physics......................... 4

TOTAL MINIMUM REQUIRED UNITS 27

PHYS-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 equivalents

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)

PHYS-111 Physics Laboratory
1 unit 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

This laboratory course will include measurement and analysis of mechanical, thermal, electrical and optical phenomena. CSU, UC (credit limits may apply to UC - see counselor)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Type</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PHYS-113</td>
<td>Elementary Modern Physics: From Atoms to the Big Bang</td>
<td>3</td>
<td>SC</td>
<td>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</td>
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<tr>
<td>PHYS-120</td>
<td>General College Physics I</td>
<td>4</td>
<td>LR</td>
<td>A lecture and laboratory study of mechanics, heat and sound. CSU, UC (credit limits may apply to UC - see counselor)</td>
</tr>
<tr>
<td>PHYS-121</td>
<td>General College Physics II</td>
<td>4</td>
<td>LR</td>
<td>This is a second term college physics course for life science majors and others. CSU, UC (credit limits may apply to UC - see counselor)</td>
</tr>
<tr>
<td>PHYS-129</td>
<td>Introductory Physics for Engineers</td>
<td>4</td>
<td>LR</td>
<td>This course is designed for engineering, physics and chemistry majors. CSU, UC (credit limits may apply to UC - see counselor)</td>
</tr>
<tr>
<td>PHYS-130</td>
<td>Physics for Engineers and Scientists A: Mechanics and Wave Motion</td>
<td>4</td>
<td>LR</td>
<td>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. C-ID PHYS 205, CSU, UC (credit limits may apply to UC - see counselor)</td>
</tr>
<tr>
<td>PHYS-150</td>
<td>Topics in Physics</td>
<td>.3-.4</td>
<td>SC</td>
<td>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</td>
</tr>
</tbody>
</table>
PHYS-230  Physics for Engineers and Scientists B: Heat and Electro-Magnetism
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 include: 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. C-ID PHYS 210, 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. C-ID PHYS 215, 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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 GE).

Certificate of achievement - Plumbing

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PLUMB-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 union local responsible for the section. This class is the same as STMFT-110.

The regulations governed by OSHA 30, providing and recognizing safe work practices. Certification in Cardiac Pulmonary Resuscitation and First Aid.
PLUMB-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 union local responsible for the section. This class is the same as STMFT-111.

The approaches to mathematical problem solving used in pipe fitting and metric conversion.

PLUMB-112 Water Supply 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.


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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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

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 learning outcomes

Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts for transfer

In order to earn the degree, students must:

•  Complete 60 semester CSU-transferable units.
•  Complete the California State University-General Education pattern (CSU GE); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.
•  Complete a minimum of 18 semester units in the major.
•  Obtain of a minimum grade point average (GPA) of 2.0.
•  Earn a grade of “C” or higher in all courses required for the major.
Students transferring to a CSU campus that accepts the degree will be required to complete no more than 60 units after transfer to earn a bachelor's degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system, or those students who do not intend to transfer.

Some courses in the 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's 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>POLSC-121</td>
<td>Introduction to U.S. Government</td>
<td>3</td>
</tr>
<tr>
<td>BUS-240</td>
<td>Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>or MATH-142</td>
<td>Elementary Statistics with Probability</td>
<td>4</td>
</tr>
<tr>
<td>POLSC-120</td>
<td>Introduction to Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-220</td>
<td>Comparative Politics</td>
<td>3</td>
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<tr>
<td>POLSC-240</td>
<td>Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-250</td>
<td>International Relations</td>
<td>3</td>
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**plus at least 6 units from:**

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<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ANTHR-130</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ECON-220</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-221</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-140</td>
<td>History of Western Civilization to the Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>HIST-141</td>
<td>History of Western Civilization since the Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-151</td>
<td>California Politics</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 18-19

**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

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

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts for transfer
Psychology

Associate in arts 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 programs in psychology and fulfills lower division general education requirements for transfer to the CSU system.

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 18 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.

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.
Psychology

major requirements

<table>
<thead>
<tr>
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<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>
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at least 3 units from:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BUS-240</td>
<td>Business Statistics</td>
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<td>MATH-142</td>
<td>Elementary Statistics with Probability</td>
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complete at least 3 units from:

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<tr>
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<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<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>Introduction to Biological Psychology</td>
<td>3</td>
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</table>

complete at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>PSYCH-122</td>
<td>Psychology in Modern Life</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-140</td>
<td>Psychology of African-Americans in a Multicultural Society</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-141</td>
<td>Psychology of Latinos/Chicanos in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-160</td>
<td>Psychology of Women</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-190</td>
<td>Psychology of Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-220</td>
<td>Psychology of Personality: Personal, Social, Cultural Differences</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-230</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-240</td>
<td>Transpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum units 18

PSYCH-101  Introduction to Psychology

3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course 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, social psychology, research findings, and applied psychology. C-ID PSY 110, 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, physiological, and cultural factors involved in personality development and interpersonal relationships. The relevance of psychology to social processes is also examined. This course is designed with an applied focus for students interested in how psychology is used in everyday life and is related to other social sciences. The course surveys different psychological perspectives and theoretical foundations and how these are applied across a person’s life taking into account the influence of factors such as culture, gender, ethnicity, historical cohort, and socio-economic status. C-ID PSY 115, CSU, UC

PSYCH-130  Introduction to Biological Psychology

3 units SC
- 54 hours lecture per term
- Prerequisite: PSYCH-101 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent

This course explores the biological bases of behavior, emotions, and psychological processes. Brain-behavior relationships underlying psychological processes such as sensation, perception, learning, memory, emotions, and psychological disorders will be examined. Historical contributions, prominent theories and models, current research principles and ethical standards in research will be addressed. C-ID PSY 150, 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; peer 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 conception to death. A major goal of this course is to introduce students to the psychological characteristics, personal/social 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 human 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 which address the following domains of human development: physical, cognitive, social and personality. C-ID PSY 180, CSU, UC

PSYCH-215  Introduction to Research Methods in Psychology
3 units  SC
• 54 hours lecture per term
• Prerequisite: PSYCH-101 and BUS-240 or MATH-142 or equivalents
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an introduction to the methods psychologists use to understand human behavior. The philosophy of science, the examination of inductive and deductive reasoning methods, and their relationship to theory are presented. Topics include: scientific method; operationalization of variables; experimental and non-experimental research designs including descriptive methods; experimental instrumentation; group and single-subject designs; data collection, analysis, interpretation, reporting results; American Psychological Association (APA)-style report writing; and research ethics. Activities include: performing a literature review; designing an original research study; collecting and analyzing psychological data. C-ID PSY 200, CSU, UC
Psychology

**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. C-ID PSY 170, CSU, UC

**PSYCH-230** Abnormal Psychology

3 units | SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course introduces the scientific study of the symptoms, causes, treatments, and prevention of psychological disorders. Multiple theoretical perspectives are used to examine the biological, psychological, and sociocultural factors creating abnormality. The course examines the Diagnostic and Statistical Manual of Mental Disorders (DSM) classification system, cultural and gender differences in abnormality, current research and ethical issues, and case illustrations of behavioral disorders. C-ID PSY 120, 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 in collaboration with Ohlone College in Newark. Students complete general education courses at DVC, laboratory and clinical courses at Ohlone College, and have supervised clinical practice at local hospitals.

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 CoARC (Committee on Accreditation for Respiratory Care) 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 an associate in science degree from Ohlone College. Students must maintain a minimum of a “C” grade or higher in all program courses. For applications and information, contact the Ohlone College RT program director at www.ohlone.edu/instr/rt. All applicants are required to attend a Pre-Application Orientation. Dates are posted annually on the Ohlone website.

**required program prerequisites or equivalents**

- BIOSC-119  Fundamentals of Microbiology ........................................... 4
- BIOSC-139  Human Anatomy.................................................................. 5
- BIOSC-140  Human Physiology................................................................. 5
- CHEM-108  Introductory Chemistry ....................................................... 4
- ENGL-122  Freshman English: Composition and Reading ....................... 3
- MATH-120  Intermediate Algebra (or any higher level math course) ........ 5
- PHYS-110  Elementary Physics ................................................................. 3

**total units of program prerequisites** 29

**supporting course:**

- PSYCH-200  Life Span Development ...................................................... 3

**total units of supporting course** 3

**major requirements**

- AH 151*  Applied Clinical Pharmacology ............................................ 2
- 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
- RT 107*  Intermediate Clinical Practice ................................................ 4
- 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

**total minimum required units** 44

*These are Ohlone College courses.

**Must be completed prior to entering RT-101.

In addition to the courses at left, 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
- Area V, Physical Education/Wellness

**Total minimum required units** 44
RUSSIAN – RUSS

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 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Certificate of achievement
Russian

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>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS-120</td>
<td>First Term Russian</td>
<td>5</td>
</tr>
<tr>
<td>RUSS-121</td>
<td>Second Term Russian</td>
<td>5</td>
</tr>
<tr>
<td>RUSS-220</td>
<td>Third Term Russian</td>
<td>5</td>
</tr>
<tr>
<td>RUSS-221</td>
<td>Fourth Term Russian</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. Declensions 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-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
**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, 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.

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**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

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**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

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**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

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**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

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**SIGN-283 American Sign Language (ASL) IV**

3 units SC
- 54 hours lecture per term
- Prerequisite: SIGN-282 or equivalent

This course is an advanced study of sign language expanding 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
Possible career opportunities
Social science fields are many and varied, as are the associated career opportunities. Careers with all levels of government, research and teaching are all possibilities. Most career options require more than two years of college study.

SOCSC-110 The American Social Experience
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an 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 Asian Americans, 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-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
This course presents a history of American women from the Progressive Era (1890) to the present, emphasizing the commonalties of women's experience. 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 Latina women will be examined. 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 the 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
This course is an interdisciplinary examination of popular culture's changing nature in American society. Looking through the lens of popular culture, this course will examine social and political institutions, such as federal and California state government, and various values that shape American popular culture. The course considers the significant contributions of Asian American, 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 study 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

SOCIOLOGY – SOCIO

Obed Vazquez, 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Associate in arts for transfer
Sociology
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.

**major requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIO-120 Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 6 units from:</td>
<td></td>
</tr>
<tr>
<td>BUS-240 Business Statistics with Probability</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MATH-142 Elementary Statistics with Probability</td>
<td>4</td>
</tr>
<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>
</tr>
<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>
<td></td>
</tr>
<tr>
<td>any course not used above, or:</td>
<td></td>
</tr>
<tr>
<td>SOCIO-131 The Urban Community</td>
<td>3</td>
</tr>
<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

This course provides an introduction to the theory and scientific methodology of sociology; a survey of the interactions, interrelationships, and processes of society as an organized structure. Sociology’s substantive areas including methodology, socialization, culture, social stratification, race, and ethnic minorities, gender and sexual orientation will be discussed. Institutional analysis beginning with the family, religion, and education is introduced. 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

This course is 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 selected from social problems such as aging, health care, 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, comparing and contrasting, 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
This course is 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
This course examines current and historical social change in cities and suburbs through the experience of African Americans, Latinos, Asian Americans, Native Americans and European Americans. Challenges faced by multicultural communities, neighborhoods and suburbs, and programs and strategies that are designed to meet these challenges will be covered. CSU, UC

SOCIO-135 Introduction to Race and Ethnicity
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a sociological analysis of ethnic cultures in the United States. Topics include political, economic, religious, judicial, and familial organization of ethnic communities, the effects of 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
Sociology

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

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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at 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 GE). Option 1 (DVC General Education) is appropriate for those students who do not intend to transfer. Students may not take a pass/no pass 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>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN-120</td>
<td>First Term Spanish</td>
<td>5</td>
</tr>
<tr>
<td>SPAN-121</td>
<td>Second Term Spanish</td>
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<td>SPAN-221</td>
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</tr>
<tr>
<td>SPAN-231</td>
<td>Sixth Term Spanish</td>
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</table>

total minimum required units 20
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>
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<tr>
<th>Course Code</th>
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<tr>
<td>SPAN-110</td>
<td>Spanish for Business I</td>
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<tr>
<td>SPAN-111</td>
<td>Spanish for Business II</td>
<td>3</td>
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<tr>
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List B

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<th>Course Title</th>
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<tr>
<td>SPAN-121</td>
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<td>SPAN-151</td>
<td>First Term Beginning Conversational Spanish</td>
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<td>SPAN-156</td>
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<td>SPAN-157</td>
<td>Third Term Beginning Conversational Spanish</td>
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</tr>
<tr>
<td>SPAN-221</td>
<td>Fourth Term Spanish</td>
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</tr>
</tbody>
</table>

Total minimum required units: 13

SPAN-110  Spanish for Business I

3 units SC

- 54 hours lecture per term
- Recommended: SPAN-110 or equivalent

This 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-120  First Term Spanish

5 units SC

- 90 hours lecture/18 hours laboratory per term
- Recommended: SPAN-120 or equivalent

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. C-ID SPAN 100, 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
Spanish

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-156 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, films, 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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 their 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.
required courses

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
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
e-mail: info@plumbers159.org

Program learning outcomes
Program learning outcomes have been developed for each
of the three options for General Education and all college
degree and certificate programs. A complete list of current
program learning outcomes for each program is also avail-
able on the DVC website at www.dvc.edu/slo.

Associate in science degree
Steamfitting
Certificate of achievement
Steamfitting
Certificate of accomplishment
Steamfitting

Associate in science degree - Steamfitting
This program is offered in collaboration with Plumbers and
Steamfitters Union Local 159 and Plumbers-Steamfitters-
Refrigeration (HVAC) 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; mate-
rial applications and storage; and safety. Upon completion
of the program, students will be able to install pipe sys-
tems 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 supervi-
sors 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 steam-
fitting, students must complete 20 out of 31 core courses to
meet their individual educational and career goals. In addi-
tion 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 course-
work 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.

Certificate of achievement - Steamfitting
This program is offered in collaboration with Plumbers and
Steamfitters Union Local 159 and Plumbers-Steamfitters-
Refrigeration (HVAC) Union Local 342. Apprenticeship
is training that is designed to prepare an individual for a
career in the skilled crafts and trades. Apprentices develop
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see how technical tasks relate specifically with theoretical
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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.
Steamfitting

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.

To earn a certificate of accomplishment students must complete five out of seven 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 accomplishment also meet some of the requirements of the certificate of achievement and major for the associate of science degree.

Complete at least 21 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
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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>
</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>
</tr>
<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>
</tr>
<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>
</tr>
<tr>
<td>STMFT-118</td>
<td>Beginning Drawing and Plan Reading for the Piping</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td></td>
<td>Trades</td>
<td></td>
</tr>
<tr>
<td>STMFT-119</td>
<td>Advanced Drawing in the Piping Trades</td>
<td>1.5-2.5</td>
</tr>
<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>
</tr>
<tr>
<td>STMFT-122</td>
<td>Steam Systems</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-123</td>
<td>Electricity for Steamfitting</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-124</td>
<td>Industrial Rigging</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-125</td>
<td>Beginning AutoCAD</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-126</td>
<td>Advanced AutoCAD</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-127</td>
<td>Pumps</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-128</td>
<td>Tube Bending</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td></td>
<td><strong>Total minimum required units</strong></td>
<td><strong>21-35</strong></td>
</tr>
</tbody>
</table>

Certificate of accomplishment - Steamfitting

This program is offered in collaboration with Plumbers and Steamfitters Union Local 159 and Plumbers-Steamfitters-Refrigeration (HVACR) Union Local 342. Apprenticeship training 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.

Program content 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 accomplishment students must complete five out of seven 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 accomplishment also meet some of the requirements of the certificate of achievement and major for the associate of science degree.

Complete at least 10 units from:

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<td>1.5-2.5</td>
</tr>
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<td>STMFT-118</td>
<td>Beginning Drawing and Plan Reading for the Piping</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td></td>
<td>Trades</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total minimum required units</strong></td>
<td><strong>10.5 – 17.5</strong></td>
</tr>
</tbody>
</table>

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.

The regulations governed by OSHA 30, providing and recognizing safe work practices. Certification in Cardio-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.

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.

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.

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.

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.

This course is designed to give related technical instruction, to enhance the apprentice’s on-the-job training. The use of various pipe and fitting materials and their application; including 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.

This course is designed to give related technical instruction to enhance the apprentice’s on-the-job training. Student will be introduced to basic isometric drawing and steam systems with copper connections to 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.

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.

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.

Interpret, coordinate and make drawings and sketches associated with piping installation.
Steamfitting

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.

This course is designed to give related technical instruction to enhance the apprentice’s on-the-job training. Student will be introduced to the instrumentation 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.

This course is designed to give related technical instruction to enhance the apprentice’s on-the-job training. Student will be introduced to the second part Instrumentation that 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.

This course is designed to give related technical instruction to enhance the apprentice’s on-the-job training. Student will be introduced 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.

This course is designed to give related technical instruction to enhance the apprentice’s on-the-job training. Student will be introduced to 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.

This course is designed to give related technical instruction to enhance the apprentice’s on-the-job training. Student will be introduced 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.

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.  

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.  

This course is designed to give related technical instruction to enhance the apprentice's on-the-job training. Students will complete projects related to 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.  

This course is designed to give related technical instruction to enhance 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.  

This course is designed to give related technical instruction to enhance the apprentice's on-the-job training. Students will learn techniques and methods for beginning welding processes for the steamfitting apprentice. Safe procedures and practices for use of cutting torch and introduction of groove pipe welding.

STMFT-132  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.  

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 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.  

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.

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.

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.

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
1.5-3.5 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.

This course is designed to give related technical instruction to enhance the apprentice’s on-the-job training. Student will learn techniques and methods 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.

This course is designed to give related technical instruction to enhance the apprentice’s on-the-job training. Student will complete projects related to 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 learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available on the DVC website at www.dvc.edu/slo.

Certificate of achievement - CSU General Education
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 GE transfer information in this catalog.)

| total minimum required units (CSU GE) | 39 |

TRANSFER STUDIES - IGETC

Program learning outcomes
Program learning outcomes have been developed for each of the three options for General Education and all college degree and certificate programs. A complete list of current program learning outcomes for each program is also available 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