PROGRAM AND COURSE DESCRIPTIONS
chapter four
catalog 2017-2018

Understanding the course descriptions 60
Coursework and study time per unit 61
Program length 61
Program and course descriptions 62
Accounting (see business accounting) 122
Addiction studies 62
Administration of justice 65
Allied health (see biological science) 104
Anthropology 72
Arabic 74
Architecture 75
Art 81
Art digital media 93
Art history 100
Astronomy 103
Biological science 104
Broadcast communication arts (see film, television and electronic media) 238
Business 112
Business accounting 122
Business management 126
Business marketing 128
Business real estate 129
Career 130
Chemistry 131
Chinese 133
Communication studies 134
Computer information systems 137
<table>
<thead>
<tr>
<th>Program/Field</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer network technology</td>
<td>143</td>
</tr>
<tr>
<td>Computer science</td>
<td>149</td>
</tr>
<tr>
<td>Construction</td>
<td>154</td>
</tr>
<tr>
<td>Cooperative education</td>
<td>372</td>
</tr>
<tr>
<td>(see work experience)</td>
<td></td>
</tr>
<tr>
<td>Counseling</td>
<td>160</td>
</tr>
<tr>
<td>Culinary arts</td>
<td>162</td>
</tr>
<tr>
<td>Dance</td>
<td>172</td>
</tr>
<tr>
<td>Dental assisting</td>
<td>177</td>
</tr>
<tr>
<td>Dental hygiene</td>
<td>181</td>
</tr>
<tr>
<td>Drama</td>
<td>187</td>
</tr>
<tr>
<td>Early childhood education</td>
<td>194</td>
</tr>
<tr>
<td>Economics</td>
<td>204</td>
</tr>
<tr>
<td>Education</td>
<td>206</td>
</tr>
<tr>
<td>Electrical/electronics technology</td>
<td>207</td>
</tr>
<tr>
<td>Energy systems</td>
<td>211</td>
</tr>
<tr>
<td>Engineering</td>
<td>213</td>
</tr>
<tr>
<td>Engineering technology</td>
<td>218</td>
</tr>
<tr>
<td>English</td>
<td>225</td>
</tr>
<tr>
<td>English as a second language</td>
<td>234</td>
</tr>
<tr>
<td>Environmental science</td>
<td>237</td>
</tr>
<tr>
<td>Film, television and electronic media</td>
<td>238</td>
</tr>
<tr>
<td>French</td>
<td>245</td>
</tr>
<tr>
<td>Geography</td>
<td>248</td>
</tr>
<tr>
<td>Geology</td>
<td>253</td>
</tr>
<tr>
<td>German</td>
<td>256</td>
</tr>
<tr>
<td>Health science</td>
<td>258</td>
</tr>
<tr>
<td>Heating, ventilation, air conditioning</td>
<td>261</td>
</tr>
<tr>
<td>History</td>
<td>265</td>
</tr>
<tr>
<td>Horticulture</td>
<td>270</td>
</tr>
<tr>
<td>Humanities</td>
<td>276</td>
</tr>
<tr>
<td>Industrial design</td>
<td>278</td>
</tr>
<tr>
<td>Interdisciplinary studies</td>
<td>279</td>
</tr>
<tr>
<td>Italian</td>
<td>279</td>
</tr>
<tr>
<td>Japanese</td>
<td>281</td>
</tr>
<tr>
<td>Journalism</td>
<td>284</td>
</tr>
<tr>
<td>Kinesiology</td>
<td>286</td>
</tr>
<tr>
<td>Kinesiology activity</td>
<td>296</td>
</tr>
<tr>
<td>Kinesiology combative</td>
<td>304</td>
</tr>
<tr>
<td>Kinesiology dance</td>
<td>305</td>
</tr>
<tr>
<td>Kinesiology intercollegiate athletics</td>
<td>308</td>
</tr>
<tr>
<td>Library studies</td>
<td>310</td>
</tr>
<tr>
<td>Library technology</td>
<td>311</td>
</tr>
<tr>
<td>Mathematics</td>
<td>314</td>
</tr>
<tr>
<td>Music</td>
<td>321</td>
</tr>
<tr>
<td>Music industry studies</td>
<td>329</td>
</tr>
<tr>
<td>Natural science (see biological science)</td>
<td>104</td>
</tr>
<tr>
<td>Nutrition</td>
<td>333</td>
</tr>
<tr>
<td>Oceanography</td>
<td>335</td>
</tr>
<tr>
<td>Persian</td>
<td>336</td>
</tr>
<tr>
<td>Philosophy</td>
<td>337</td>
</tr>
<tr>
<td>Photography (see art)</td>
<td>81</td>
</tr>
<tr>
<td>Physical science</td>
<td>340</td>
</tr>
<tr>
<td>Physics</td>
<td>341</td>
</tr>
<tr>
<td>Plumbing</td>
<td>343</td>
</tr>
<tr>
<td>Political science</td>
<td>347</td>
</tr>
<tr>
<td>Portuguese</td>
<td>349</td>
</tr>
<tr>
<td>Psychology</td>
<td>350</td>
</tr>
<tr>
<td>Real estate (see business real estate)</td>
<td>129</td>
</tr>
<tr>
<td>Respiratory therapy</td>
<td>353</td>
</tr>
<tr>
<td>Russian</td>
<td>355</td>
</tr>
<tr>
<td>Sign language</td>
<td>356</td>
</tr>
<tr>
<td>Social science</td>
<td>357</td>
</tr>
<tr>
<td>Sociology</td>
<td>358</td>
</tr>
<tr>
<td>Spanish</td>
<td>360</td>
</tr>
<tr>
<td>Special education</td>
<td>363</td>
</tr>
<tr>
<td>Sports medicine/athletic training</td>
<td>286</td>
</tr>
<tr>
<td>(see kinesiology)</td>
<td></td>
</tr>
<tr>
<td>Steamfitting</td>
<td>365</td>
</tr>
<tr>
<td>Transfer studies</td>
<td>371</td>
</tr>
<tr>
<td>Work experience</td>
<td>372</td>
</tr>
</tbody>
</table>
UNDERSTANDING THE COURSE DESCRIPTIONS

Availability of course offerings
The courses listed in the catalog may not be offered every term or every year. Refer to 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. See page 17 for more information about course prerequisites and/or co-requisites.

Recommendations
When a course description lists a recommendation, 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 and transferability 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 for full-term classes. Please see page 28 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, not a major or general education requirement. 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 established based on the minimum amount of time students will need to achieve the intended learning outcomes as described by Title 5, section 5502.5. Units of credit established by the faculty for each course reflect generally accepted norms or equivalencies in higher education. In general, for a full-term, three-unit lecture class, students spend three hours each week in class and six hours of study time out of class totaling a minimum of 9 hours each week. The number of units established for laboratory courses is based on the number of hours of laboratory work alone, although many laboratory courses may also require study outside of laboratory hours.

Expected total hours of study outside of class apply equally to short-term and summer classes. Students should carefully plan their schedules to include these hours of study during accelerated terms. Online classes require more hours of independent work in lieu of face-to-face meetings and students are advised that total hours of study for such courses will exceed minimums.

The following examples reflect the minimum expected hours of study per term:

<table>
<thead>
<tr>
<th>Sample Course</th>
<th>Units</th>
<th>Lecture hours</th>
<th>Laboratory Activity hours</th>
<th>Minimum out of class study hours</th>
<th>Total hours</th>
<th>Typical hours week for a full term class</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST-120</td>
<td>3</td>
<td>54</td>
<td>0</td>
<td>108</td>
<td>162</td>
<td>9</td>
</tr>
<tr>
<td>COMSC-210</td>
<td>4</td>
<td>54</td>
<td>0</td>
<td>108</td>
<td>216</td>
<td>12</td>
</tr>
<tr>
<td>KNACT-110A</td>
<td>1</td>
<td>54</td>
<td>0</td>
<td>0</td>
<td>54</td>
<td>3</td>
</tr>
<tr>
<td>MATH-135</td>
<td>4</td>
<td>72</td>
<td>0</td>
<td>144</td>
<td>216</td>
<td>12</td>
</tr>
</tbody>
</table>

A unit load of 12 units is generally considered full-time. In the examples provided above, a student enrolling in HIST-120, COMSC-210, KNACT-110A and MATH-135 would expect to devote a minimum of 36 hours to study (in and out-of-class).

### 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.
ADDICTION STUDIES – ADS

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

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

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

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published 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.

major requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS-102</td>
<td>Introduction to Motivational Interviewing Skills</td>
<td>3</td>
</tr>
<tr>
<td>ADS-151*</td>
<td>Ethical and Legal Concerns for ADS Counselors</td>
<td>1.5</td>
</tr>
<tr>
<td>ADS-152</td>
<td>Relapse Prevention</td>
<td>3</td>
</tr>
<tr>
<td>ADS-154</td>
<td>Dual Disorders</td>
<td>3</td>
</tr>
<tr>
<td>ADS-155</td>
<td>Diverse Communities and Social Services</td>
<td>3</td>
</tr>
<tr>
<td>ADS-168*</td>
<td>Group Process and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>ADS-170</td>
<td>Introduction to Codependency and Family Issues</td>
<td>3</td>
</tr>
<tr>
<td>ADS-171*</td>
<td>ADS Field Work I</td>
<td>5.5</td>
</tr>
<tr>
<td>ADS-172*</td>
<td>ADS Field Work II</td>
<td>5.5</td>
</tr>
<tr>
<td>HSCL-127</td>
<td>Drugs, Health and Society</td>
<td>3</td>
</tr>
<tr>
<td>total minimum required units</td>
<td></td>
<td>33.5</td>
</tr>
</tbody>
</table>

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

Associate in science degree
Addiction studies

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. discuss the legal and ethical issues that workers may encounter in the addiction treatment field.
E. explain how addiction affects family systems.
F. compare and contrast various assessment tools, treatment plans and charting protocols.
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 ensure 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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS-102</td>
<td>Introduction to Motivational Interviewing Skills</td>
<td>3</td>
</tr>
<tr>
<td>ADS-152</td>
<td>Relapse Prevention</td>
<td>3</td>
</tr>
<tr>
<td>ADS-154</td>
<td>Dual Disorders</td>
<td>3</td>
</tr>
<tr>
<td>ADS-155</td>
<td>Diverse Communities and Social Services</td>
<td>3</td>
</tr>
<tr>
<td>ADS-170</td>
<td>Introduction to Codependency and Family Issues</td>
<td>3</td>
</tr>
<tr>
<td>HSCI-127</td>
<td>Drugs, Health, and Society</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Minimum Required Units</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**Certificate of Achievement**

**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. identify the legal and ethical issues that workers may encounter in the addiction treatment field.

E. demonstrate an understanding of how addiction affects family systems.

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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS-102</td>
<td>Introduction to Motivational Interviewing Skills</td>
<td>3</td>
</tr>
<tr>
<td>ADS-151*</td>
<td>Ethical and Legal Concerns for ADS Counselors</td>
<td>1.5</td>
</tr>
<tr>
<td>ADS-152</td>
<td>Relapse Prevention</td>
<td>3</td>
</tr>
<tr>
<td>ADS-154</td>
<td>Dual Disorders</td>
<td>3</td>
</tr>
<tr>
<td>ADS-155</td>
<td>Diverse Communities and Social Services</td>
<td>3</td>
</tr>
<tr>
<td>ADS-168*</td>
<td>Group Process and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>ADS-170</td>
<td>Introduction to Codependency and Family Issues</td>
<td>3</td>
</tr>
<tr>
<td>ADS-171*</td>
<td>ADS Field Work I</td>
<td>5.5</td>
</tr>
<tr>
<td>ADS-172*</td>
<td>ADS Field Work II</td>
<td>5.5</td>
</tr>
<tr>
<td>HSCI-127</td>
<td>Drugs, Health, and Society</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Minimum Required Units</strong></td>
<td><strong>33.5</strong></td>
</tr>
</tbody>
</table>

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

**Certificate of Achievement**

**Addiction Studies**

Students completing the program will be able to...

A. compare and contrast the prevalence, impact, and cost of substance use, abuse, and dependence to the individual and society.

B. identify the general terminology related to addiction and recovery.

C. analyze common family patterns of behavior and the influence addiction has within the family system.

D. demonstrate an understanding of how addiction affects family systems.

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>Title</th>
<th>Units</th>
<th>Hours per Term</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS-102</td>
<td>Introduction to Motivational Interviewing Skills</td>
<td>3</td>
<td>54</td>
<td>• 54 hours lecture per term</td>
</tr>
<tr>
<td>ADS-152</td>
<td>Relapse Prevention</td>
<td>3</td>
<td>54</td>
<td>• Recommended: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td>ADS-154</td>
<td>Dual Disorders</td>
<td>3</td>
<td>54</td>
<td>• Recommended: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td>ADS-155</td>
<td>Diverse Communities and Social Services</td>
<td>3</td>
<td>54</td>
<td>• Recommended: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td>ADS-170</td>
<td>Introduction to Codependency and Family Issues</td>
<td>3</td>
<td>54</td>
<td>• Recommended: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td>HSCI-127</td>
<td>Drugs, Health and Society</td>
<td>3</td>
<td>54</td>
<td>• Recommended: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td></td>
<td><strong>total minimum required units</strong></td>
<td><strong>18</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

3 units  SC

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

This course provides an overview of motivational interviewing and the stages of change. Essential communication and charting skills needed for working in the substance abuse and chemical dependency field will be explored. CSU

**ADS-150 Topics in Addiction Studies**

.3-.4 units  SC

- Variable hours

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

**ADS-151 Ethical and Legal Concerns for ADS Counselors**

1.5 units  SC

- 27 hours lecture per term
- **Prerequisite: ADS-102 (may be taken concurrently) and HSCI-127 or equivalents**
- **Recommended: Eligibility for ENGL-122 or equivalent**

This course is designed to familiarize students with the legal and ethical issues related to addiction counseling in the state of California. Reporting laws, requirements related to maintaining client confidentiality and boundaries, and recognizing the differing levels of legal and ethical obligations for licensed mental health practitioners and certified addiction counselors versus other voluntary recovery support providers will also be examined. CSU

**ADS-152 Relapse Prevention**

3 units  SC

- 54 hours lecture per term

This course examines the research that describes the progressive and predictable warning signs of relapse in addicts and alcoholics. Students will study and practice the skills and techniques used to develop a relapse prevention program. CSU

**ADS-154 Dual Disorders**

3 units  SC

- 54 hours lecture per term

This course addresses the common preexistent or concurrent psychiatric disorders that may surface in the area of substance abuse. The relationships between mental health and substance abuse facilities will be examined. CSU

**ADS-155 Diverse Communities and Social Services**

3 units  SC

- 54 hours lecture per term

- **Recommended: Eligibility for ENGL-122 or equivalent**

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-168 Group Process and Leadership**

3 units  SC

- 54 hours lecture per term

- **Prerequisite: ADS-102 and HSCI-127 or equivalents**
- **Recommended: ADS-151 and 170 or equivalents**

This course explores the theory and practice of group process, group dynamics, and group facilitation. Students will study various types of groups and the stages of group cohesion. They will have the opportunity to develop basic observation and communication skills needed for facilitating support groups for people with histories of substance abuse, codependence, and other addictive behaviors. Administrative tasks related to group leadership responsibilities will also be examined. CSU
ADS-170  Introduction to Codependency and Family Issues  
3 units  SC  
- 54 hours lecture per term  
- Recommended: HSCI-127 and eligibility for ENGL-122 or equivalents  
This course examines the biological, psychological, and sociological aspects of family systems and the influence of addiction on the family. Close examination of family system variables, such as family structure, communication, and emotional bonding with a focus on how addiction impacts functional and dysfunctional patterns of behavior are included. The role of family members in addiction treatment will also be explored. CSU  

ADS-171  ADS-Field Work I  
5.5 units  SC  
- 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 experience 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  SC  
- 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-level student learning outcomes  
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.  

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.
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-250</td>
<td>Terrorism and Homeland Security</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>Community-Based Corrections</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**

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.

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 a 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>
<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>
</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>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-203</td>
<td>Crime Scene Investigation</td>
<td>4</td>
</tr>
<tr>
<td>ADJUS-221</td>
<td>Legal Aspects of Evidence</td>
<td>3</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>
</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>ADJUS-250</td>
<td>Terrorism and Homeland Security</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-121</td>
<td>Introduction to United States Government</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-101</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-120</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<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>
</tbody>
</table>

**total minimum required units** 18
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.

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, evening, or both.

required courses:

- ADJUS-120 Introduction to the Administration of Justice
- ADJUS-121 Criminal Law
- ADJUS-122 Criminal Procedure
- ADJUS-124 Elements of Corrections
- ADJUS-130 Cultural Diversity in Criminal Justice
- ADJUS-221 Legal Aspects of Evidence
- ADJUS-284 Interviewing and Counseling

plus at least 7-9 units from:

- ADJUS-125 Report Preparation for Criminal Justice
- ADJUS-139 Gangs and Threat Groups in America
- ADJUS-203 Crime Scene Investigation
- ADJUS-222 Criminal Investigation
- ADJUS-230 Juvenile Procedures
- ADJUS-250 Terrorism and Homeland Security
- ADJUS-260 Patrol Procedures
- ADJUS-270 Personal Self Defense and Firearms
- ADJUS-280 Community-Based Corrections
- ADJUS-298 Independent Study

Total minimum required units: 28

Certificate of achievement
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.

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

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may be completed by a combination of day, evening or weekend courses listed in the Administration of Justice (AJ) Program. Successful completion of the certificate of accomplishment requirements also counts towards the completion of the AJ certificate of achievement.
required courses: units
ADJUS-120 Introduction to the Administration of Justice ........................................ 3
ADJUS-124 Elements of Corrections ................................................................. 3
ADJUS-139 Gangs and Threat Groups in America ............................................. 3
ADJUS-224 Interviewing and Counseling ......................................................... 3

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.

This certificate prepares students for entry-level careers as crime scene investigators, criminal analysts, and fingerprint examiners, criminalists in limited areas of expertise, crime scene photographers, private security investigators, and criminal investigators. It also is a foundation for those students who wish to pursue advanced careers as criminal profilers or advanced criminalists. Completion of this certificate will greatly improve the opportunity for employment.

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

required courses: units
ADJUS-120 Introduction to the Administration of Justice ........................................ 3
ADJUS-121 Criminal Law ................................................................................. 3
ADJUS-122 Criminal Procedure ................................................................. 3
ADJUS-221 Legal Aspects of Evidence ......................................................... 3

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.

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.
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.

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 enrollment 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:  

<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-124</td>
<td>Elements of Corrections</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-230</td>
<td>Juvenile Procedures</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 15

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 populations; 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-150  Topics in Administration of Justice
3-4 units  SC
• Variable hours
A supplemental course in administration of justice to provide a study of current concepts and problems in the administration of justice. Specific topics will be announced in the schedule of classes. CSU

ADJUS-203  Crime Scene Investigation
4 units  LR
• 54 hours lecture/54 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an in-depth analysis and discussion of the nature and significance of various types of physical evidence commonly found at crime scenes. Areas of emphasis include: (1) the use of physical evidence in the forensic setting, (2) types of physical evidence, (3) the identification, collection and packaging of physical evidence, (4) principles of crime scene photography, (5) crime scene sketching, (6) evidence collection techniques: casting shoe and tool marks, lifting latent fingerprints and (7) the preservation of trace evidence, i.e. physiological fluids, hair, soil, fibers, glass, etc. This course combines the theoretical concepts associated with use of physical evidence in the forensic setting with student involvement in the processing of simulated crime scenes. The laboratory component, which will focus on the student applying the principles learned in lectures, will be mandatory. C-ID AJ 150, CSU

ADJUS-221  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-250  Terrorism and Homeland Security  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course is an introduction to contemporary terrorism and its relation to homeland security. There will be an emphasis on the growing threat of homegrown violent extremism and weapons of mass destruction. Motivational factors of international and domestic terrorism organizations, the basic elements of government intelligence, prevention measures, responses to terrorism, and disciplines within the counter-terrorism profession will be discussed. This course meets the California Bureau of Security and Investigative Services requirement for training in weapons of mass destruction. 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 recertification, 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  Community-Based Corrections  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course is an introduction to community-based corrections: its philosophy, history, legal mandates, relations to courts, basic procedures, and common treatment approaches. 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 a 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 is required.  
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

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-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

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 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 a 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>
<th>Code</th>
<th>Course Title</th>
<th>units</th>
</tr>
</thead>
<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>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTHR-120</td>
<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>
</tr>
<tr>
<td>or</td>
<td>BUS-240</td>
<td>Business Statistics</td>
</tr>
<tr>
<td>plus at least 3 units from any course not used above or:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOSC-139</td>
<td>Human Anatomy</td>
<td>5</td>
</tr>
<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>
</tr>
<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>
</tr>
</tbody>
</table>

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.

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.
plus at least 3 units from any course not used above or:
ANTHR-115 Primate Evolution and Adaptation ................. 3
ANTHR-126 Introduction to Archaeological Field Methods .... 3
GEOG-130 Cultural Geography........................................ 3
MUSIC-114 World Music ............................................. 3
SOCI-120 Introduction to Sociology............................... 3

**total minimum required units** 18

ANTHR-115 Primate Evolution and Adaptation
3 units 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
This course presents a cross-cultural, multi-cultural 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. 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. Students will study 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 is placed on reconstructing ancient life ways with the aim of understanding the development of social and technological complexity in the prehistoric and the historic past. C-ID ANTH 150, CSU, UC

ANTHR-126 Introduction to Archaeological Field Methods
3 units SC
• 18 hours lecture/108 hours laboratory per term
• Prerequisite: ANTHR-125 or equivalent (may be taken concurrently)
• Recommended: 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. Students will spend a significant portion of class time in the field. CSU, UC

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 to understand the broad arc of human experience focusing on a set of central issues. Topics include how people around the world: make their living; organize themselves socially, politically and economically; communicate; relate to each other through family and kinship ties; develop belief systems; apply gender, racial and ethnic identity labels; have shaped and been shaped by social inequalities such as colonialism; and navigate cultural change and processes of globalization that affect us all. Ethnographic case studies will be utilized to highlight similarities and differences. C-ID ANTH 120, 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. C-ID ANTH 110, CSU, UC
ANTHR-141L Biological Anthropology Laboratory  
1 unit 
- 54 hours laboratory per term 
- Prerequisite: ANTHR-140 (may be taken concurrently) or equivalent 
- 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, paleoanthropology, hominid dietary patterns, the study of hominids as bio-culturally adapted animals, and a survey of general methodologies utilized in physical anthropological research. C-ID ANTH 115L, CSU, UC

ANTHR-155 Topics in Anthropology  
.3-4 units 
- 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 
- Variable hours 
- Note: Submission of acceptable educational contract to department and Instruction Office is required. 

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

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

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

ARABIC – ARABC

Toni Fannin, Interim Dean  
Applied and Fine Arts Division  
Business and Foreign Language Building, Room 204

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

ARABC-120 First Term Arabic  
5 units 
- 90 hours lecture 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 course 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 
- 90 hours lecture per term 
- Prerequisite: ARABC-120 or two years of high school study or equivalent 
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records. 

This is the second level language course in Modern Standard Arabic. This course is designed to build upon skills in reading and writing developed in ARABC-120. Students will gain increased vocabulary and a greater understanding of more complex grammatical structures. They will be able to approach prose, fiction, and non-fiction written in the language. Students will also increase their proficiency in Arabic script and sound system, widen their working vocabulary, learn key grammatical points, and practice conversation and dictation. Students deliver oral presentations and write academic papers in Arabic. A variety of Arabic texts covering many subjects of interest such as literature, classical writing, poetry, media reports, and news will be introduced. CSU, UC
ARABC-150  Topics in Arabic  
.3-4 units  SC  
- Variable hours  
A supplemental course in Arabic to provide a study of current concepts and problems in Arabic and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

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

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

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

Program-level student learning outcomes  
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree  
Architecture design  
Students completing the program will be able to...  
A. communicate architectural concepts using graphic conventions and representational methods.  
B. demonstrate an understanding of drawing methods and graphic compositional techniques.  
C. construct physical models of architectural elements and spaces.  
D. demonstrate an understanding of building components, structures and systems in relation to design.  
E. identify notable architects, design concepts, canonical buildings and precedents in architecture.  
F. identify the historical and contemporary role of architects in the profession and related design fields.  
G. describe the role of environmental design, energy use and sustainable design practices in the profession and in buildings.  
H. utilize digital means of production, representation and/or digital fabrication methods for the creation and manipulation of architectural images and forms.

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 architecture design, students must complete each course used to meet a major requirement with a "C" grade or higher, maintain an overall GPA of 2.5 or higher and complete all general education requirements as listed in the catalog. Many upper level architecture degree programs require specific physics, math and general education preparation. Please consult the transfer institution for required courses. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

<table>
<thead>
<tr>
<th>major requirements:</th>
<th>units</th>
</tr>
</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 Design</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</td>
<td>3</td>
</tr>
<tr>
<td>CONST-144 Materials of Construction</td>
<td>3</td>
</tr>
</tbody>
</table>
plus at least 3 units from:
ARCHI-110 Design-Build Workshop .......................... 1
ARCHI-136 Digital Tools for Architecture ................. 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-211 Architectural Structures ......................... 3
ARCHI-215 Architectural Portfolio Workshop ............... 1.5

**total minimum required units** 33

### Associate in science degree
#### Architecture technology

**Students completing the program will be able to...**

A. communicate architectural concepts using graphic conventions and representational methods.
B. demonstrate an understanding of drawing methods and graphic compositional techniques.
C. construct physical models of architectural elements and spaces.
D. demonstrate an understanding of building components, structures and systems in relation to design.
E. identify notable architects, design concepts, canonical buildings and precedents in architecture.
F. identify the historical and contemporary role of architects in the profession and related design fields.
G. describe the role of environmental design, energy use and sustainable design practices in the profession and in buildings.
H. utilize digital means of production, representation and/or digital fabrication methods for the creation and manipulation of architectural images and forms.

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, the units are only counted once.

### Certificate of achievement
#### Architecture technology

**Students completing the program will be able to...**

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

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:  
ARCHI-120 Introduction to Architecture and Environmental Design .............................. 3
ARCHI-126 Computer Aided Design and Drafting - AutoCAD ............................................. 3
ARCHI-130 Architectural Graphics I ............................................................... 3
ARCHI-244 Architectural Practice and Working Drawings I ............................................. 3
CONST-124 Construction Details and Specifications ............................................. 3
CONST-135 Construction Processes: Residential ..................................................... 4
CONST-144 Materials of Construction ................................................................. 3

plus at least 6 units from:
ARCHI-131 Architectural Graphics II ............................................................... 3
ARCHI-226 Computer Aided Drafting Design, Advanced Concepts - AutoCAD ..................................................... 3
ARCHI-296 Internship in Occupational Work Experience  
Education in ARCHI ................................................................. 2-3
CONST-116 Plane Surveying ................................................................. 4
CONST-181 Building Code Interpretation: Non-Structural ............................................. 3
CONST-183 Title 24: Energy Conservation Codes ..................................................... 3

total minimum required units 28

ARCHI-120 Introduction to Architecture and Environmental Design  
3 units LR  
• 36 hours lecture/72 hours laboratory per term  
This course is an introduction to the professional field of architecture, environmental design, landscape design, and urban planning. An overview of the practice of environmental design with concepts in design methods and theory, analysis and problem solving, history of design, and the profession is presented. There is an emphasis on beginning design projects utilizing drawing, model making, and computers. CSU, UC

ARCHI-126 Computer Aided Design and Drafting - AutoCAD  
3 units SC  
• 36 hours lecture/72 hours laboratory per term  
• Prerequisite: ARCHI-120 or equivalent and ARCHI-130 (may be taken concurrently) or equivalent  
• Recommended: ARCHI-135 or equivalent  
This introductory course covers the fundamentals of AutoCAD, a computer design drafting program, applied to the creation of technical drawings. Hands-on training utilizing a comprehensive overview of the software package and its applications to architectural drafting is stressed. 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  
• Note: Credit by examination option available  
This course is an introduction to Revit software and covers fundamentals of the Revit operating environment, file structure, organization and creation of three-dimensional and two-dimensional construction models and documents. CSU

ARCHI-119 Introduction to Technical Drawing  
3 units SC  
• 36 hours lecture/72 hours laboratory per term  
• Note: Same as ENGTC-119. For students with no previous drafting experience. Credit by examination option available.  
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-110 Design-Build Workshop  
1 unit SC  
• May be repeated three times  
• 72 hours laboratory per term  
• 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 two to six 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.  
This is a design-build course for full-scale projects in wood, metal, and other materials to be designed and constructed by students working in teams in consultation with faculty. The course explores drawing, modeling, fabrication and assembly of full-scale architectural projects utilizing manual and computer controlled tools. CSU

ARCHI-121 Architectural Design I  
4 units SC  
• 36 hours lecture/72 hours laboratory per term  
• Prerequisite: ARCHI-120 or equivalent and ARCHI-130 (may be taken concurrently) or equivalent  
• Recommended: ARCHI-135 or equivalent  
This first-level studio design course focuses on development of fundamental design skills and spatial theory. Topics include spatial qualities of architecture, composition and ordering systems, circulation and movement through space, daylighting, introductory structural systems, precedent studies and architectural theory. CSU, UC

ARCHI-101 Architectural Design Workshop  
1 unit SC  
• 54 hours laboratory per term  
• Recommended: ARCHI-105 or equivalent  
• Note: Students will be required to complete an architectural design project as part of this course.  
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

Note: Same as ENGTC-119. For students with no previous drafting experience. Credit by examination option available.

Note: During spring term students will participate in the Cal Poly San Luis Obispo Design Village Competition. Multiple teams allowed, entry fees and material fees may apply.
ARCHI-130  Architectural Graphics I
3 units   LR
• 36 hours lecture/72 hours laboratory per term
• Recommended: ARCHI-119 or ENGT-119 or equivalent
This course is an introduction to architectural graphics related to projection systems, representation of architectural forms, rendering and shadow casting. An overview of history and methods of graphic representation used by architects and an application of drafting, drawing and rendering methods is presented. Problem-solving in orthographic and pictorial projection and drawing, architectural lettering, shades and shadows, and color rendering techniques are covered.
There is an emphasis on mechanical drafting with pencil and beginning introduction to other art media. CSU, UC

ARCHI-131  Architectural Graphics II
3 units   LR
• 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 is placed on perspective drawing, shade and tone, color theory and composition. A continuing exploration of media for architectural rendering and representation is included. CSU, UC

ARCHI-135  Digital Tools for Design
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 is an introduction to the use of computers in design communication and representation. Topics presented include two-dimensional and three-dimensional graphics utilizing Adobe Illustrator, InDesign, Photoshop, AutoCAD, Sketchup and other related programs. Students will be introduced to additional concepts in processing digital images, digital photography, scanning and printing. CSU

ARCHI-136  Digital Tools for Architecture
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 (3-D) 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-137  Digital Fabrication and Prototyping
3 units   SC
• 36 hours lecture/72 hours laboratory per term
This is an introductory course in design prototyping and digital fabrication methods. Manual and digital modeling, with an exploration of computer numerical control (CNC) fabrication methods will be explored. Shaping and material removal using CNC fabrication tools for a variety of materials, including plastics, wood, metals and ceramics will be practiced in addition to three-dimensional printing methods. 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 that influenced the built environment in the Mediterranean region, Europe, Asia, Africa, and Pre-Columbian Americas. Topics include early megalithic tombs and structures, Native American dwellings, architecture of Egypt, Mesopotamia, Persia and the Middle East, early civilizations of the Aegean, temples and cities of Greece, architecture and engineering of Rome, and early medieval structures after the fall of Rome. CSU, UC
ARCHI-157 History of World Architecture: Middle Ages to 18th Century
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: ARCHI-156, 157 and 158 may be taken in any order
This course covers world architecture and urbanism from the Middle Ages until the end of the 18th Century. Exploration of social, cultural, and physical conditions that 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 will be covered 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
This course is a survey of American architectural history from Native American dwellings to the present. The architectural influence of immigrant groups is presented, as well as the influences of architectural design movements in the United States through the course of history. 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-211 Architectural Structures
3 units  LR
• 54 hours lecture per term
• Prerequisite: PHYS-120 (may be taken concurrently) or equivalent
This course is an introduction to the role of structures in the making of buildings, statics, and the creation of simple three-dimensional structures. The development of skills to analyze structures composed of axial force (truss) members will also be covered. 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 135 or equivalents
• Recommended: ARCHI-136 or equivalent
This course is a second-level studio design class continuing the study of architectural design. It focuses on development of fundamental design skills utilizing concepts related to site planning and site analysis with projects of greater complexity. A continuing investigation of topics in material qualities, general methods of assembly and construction, and human factors in design is covered. 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-136 (may be taken concurrently) or equivalent and ARCHI-220 or equivalent

This course is a third-level studio design class continuing the study of architectural design. It focuses on the application of advanced design skills and spatial theories to projects of greater architectural complexity. It includes design problems and projects incorporate advanced concepts of site planning, urban design, integration of structural and mechanical systems, programming and circulation. CSU, UC

ARCHI-226  Computer Aided Drafting Design, Advanced Concepts - AutoCAD
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: ARCHI-126 or ENGTC-126 or equivalent
• Note: Same as ENGTC-226. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course covers the concepts and applications of constructing digital three-dimensional (3D) models and photorealistic renderings for presentation using AutoCAD, 3D Studio Max and Alias. Advanced techniques for surface, wireframe and solid modeling will be presented. Students will explore lighting, materials mapping and rendering as they apply to architecture, engineering and industrial design. CSU, UC (credit limits may apply to UC - see counselor)

ARCHI-244  Architectural Practice and Working Drawings I
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: ARCHI-130 and CONST-144 or equivalents

This course will cover methods and processes for the interpretation and creation of architectural working drawings, connections, details and specifications. The technical concepts related to the construction of small-scale structures and their representation in construction documents will be discussed. Students will be introduced to the design review process, along with Construction Specifications Institute (CSI) format, standards of practice and graphic representation, and the role of the architect, client and local governing agencies. CSU

ARCHI-296  Internship in Occupational Work Experience Education in ARCHI
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in the ARCHI-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

ARCHI-296 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

ARCHI-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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**

Toni Fannin, Interim Dean  
Applied and Fine Arts Division  
Business and Foreign Language Building, Room 204

### Possible career opportunities

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

### Program-level student learning outcomes

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

### Associate in arts degree  
**Fine arts**

Students completing the program will be able to...

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

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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-101</td>
<td>Introduction to Two-Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ART-102</td>
<td>Introduction to Sculpture and Three-Dimensional Design</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>ARTHS-193</td>
<td>History of Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-195</td>
<td>History of Prehistoric and Ancient Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-196</td>
<td>History of Medieval and Renaissance Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-197</td>
<td>History of Baroque to 20th Century Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-199</td>
<td>Contemporary Art History</td>
<td>3</td>
</tr>
</tbody>
</table>

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

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

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, honed 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.

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, honed 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.

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, honed 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 a 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>
</tr>
</thead>
<tbody>
<tr>
<td>ART-101</td>
<td>Introduction to Two-Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ART-102</td>
<td>Introduction to Sculpture and Three-Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-196</td>
<td>History of Medieval and Renaissance Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-197</td>
<td>History of Baroque to 20th Century Art</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTHS-193</td>
<td>History of Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-195</td>
<td>History of Prehistoric and Ancient Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-199</td>
<td>Contemporary Art History</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 9 units from:**

**applied design**

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

**ceramics**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-152</td>
<td>Wheel-Thrown Pottery I</td>
<td>3</td>
</tr>
<tr>
<td>ART-154</td>
<td>Hand-Built Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>ART-153</td>
<td>Wheel-Thrown Pottery II</td>
<td>3</td>
</tr>
<tr>
<td>ART-155</td>
<td>Ceramic Sculpture I</td>
<td>3</td>
</tr>
<tr>
<td>ART-156</td>
<td>Figurative Ceramics I</td>
<td>3</td>
</tr>
</tbody>
</table>

**color**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-103</td>
<td>Visual Theory and Practice - Color Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

**digital art**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</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>
</tbody>
</table>

**drawing**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-106</td>
<td>Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>ART-107</td>
<td>Figure Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-108</td>
<td>Figure Drawing II</td>
<td>3</td>
</tr>
</tbody>
</table>

**other media**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTDM-224</td>
<td>Typography</td>
<td>3</td>
</tr>
</tbody>
</table>

**painting**

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

**photography**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-160</td>
<td>Photography I</td>
<td>3</td>
</tr>
<tr>
<td>ART-161</td>
<td>Photography II</td>
<td>3</td>
</tr>
</tbody>
</table>

**printmaking**

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

**sculpture**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-138</td>
<td>Sculpture I</td>
<td>3</td>
</tr>
<tr>
<td>ART-142</td>
<td>Metal Art I</td>
<td>3</td>
</tr>
<tr>
<td>ART-143</td>
<td>Metal Art II</td>
<td>3</td>
</tr>
</tbody>
</table>

**total units for the major**

27

**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.

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, honors 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 in painting and drawing includes fundamental courses within the field of painting and drawing. 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 ensure that the requirements for transfer to appropriate institutions are met.

The fine art curriculum develops a student’s critical thinking abilities, hones problem solving skills and establishes visual literacy in the visual arts. Career opportunities that may be enhanced by the 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.

**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 techniques.
B. identify the elements that define two-dimensional art.
C. employ critical thinking to analyze two-dimensional art works in terms of historical context and cultural values.
D. demonstrate basic drawing skills, color manipulation, and application of design principles.
E. apply the processes necessary to create drawings in various media and/or paintings in oil, acrylic, and alternative media.

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 ensure that the requirements for transfer to appropriate institutions are met.

**Painting and drawing**

- ART-105 Drawing I ........................................ 3
- ART-152 Wheel-Thrown Pottery I ......................... 3
- ART-155 Ceramic Sculpture I ............................ 3
- ART-299 Student Instructional Assistant .................. 0.5-3
- ARTHS-199 Contemporary Art History..................... 3

*minimum 2 units required

plus at least 9 units from:

- ART-153 Wheel-Thrown Pottery II ......................... 3
- ART-154 Hand-Built Ceramics I .......................... 3
- ART-156 Figurative Ceramics I ............................ 3
- ART-252 Wheel-Thrown Pottery III ......................... 3
- ART-253 Wheel-Thrown Pottery IV ......................... 3
- ART-254 Hand-Built Ceramics II ........................... 3
- ART-255 Ceramic Sculpture II ............................. 3
- ART-256 Figurative Ceramics II ............................ 3
- ART-298 Independent Study ................................ 0.5-3

**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.

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

**Printmaking**

**Certificate of achievement**

- ART-105 Drawing I ........................................ 3
- ART-126 Painting I: Introduction to Painting ............. 3
- ARTHS-197 History of Baroque to 20th Century Art ....... 3

**total minimum required units** 15

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
</tr>
</tbody>
</table>

*plus at least 9 units from:*

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-109</td>
<td>Printmaking: Monotype</td>
<td>3</td>
</tr>
<tr>
<td>ART-110</td>
<td>Introduction to Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART-111</td>
<td>Printmaking: Etching I</td>
<td>3</td>
</tr>
<tr>
<td>ART-112</td>
<td>Printmaking: Etching II</td>
<td>3</td>
</tr>
<tr>
<td>ART-114</td>
<td>Printmaking: Woodblock</td>
<td>3</td>
</tr>
<tr>
<td>ART-116</td>
<td>Printmaking: Stencil and Screen Print</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units:** 15

### Limitations on enrollment

Effective fall term 2013, changes to the regulations that govern community college enrollments placed limitations on the number of courses that students may take in certain disciplines within the Contra Costa Community College District. The charts below indicate which Diablo Valley College (DVC) courses are assigned to groups of courses (“families”) for which limitations have been imposed. Certain courses within certain “families” may be repeated (see catalog description), however, students are limited to four enrollments within the family. Certain DVC courses are equivalent to courses at Los Medanos College and Contra Costa College. An enrollment in an equivalent course at one of those colleges will count toward the allowable four enrollments within the family.

NOTE: Diablo Valley College may offer experimental or topics courses. When appropriate, based on content, such courses will be assigned to a “family” and that enrollment will be counted as an experience within the “family”.

### ART

#### Family: Design

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-101</td>
<td>Introduction to Two-Dimensional Design</td>
</tr>
<tr>
<td>ART-102</td>
<td>Introduction to Sculpture and Three-Dimensional Design</td>
</tr>
<tr>
<td>ART-103</td>
<td>Visual Theory and Practice - Color Theory</td>
</tr>
</tbody>
</table>

#### Family: Drawing

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
</tr>
<tr>
<td>ART-106</td>
<td>Drawing II</td>
</tr>
<tr>
<td>ART-107</td>
<td>Figure Drawing I</td>
</tr>
<tr>
<td>ART-108</td>
<td>Figure Drawing II</td>
</tr>
<tr>
<td>ART-250F</td>
<td>Advanced Drawing</td>
</tr>
</tbody>
</table>

#### Family: Printmaking

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-109</td>
<td>Printmaking: Monotype</td>
</tr>
<tr>
<td>ART-110</td>
<td>Introduction to Printmaking</td>
</tr>
<tr>
<td>ART-111</td>
<td>Printmaking: Etching I</td>
</tr>
<tr>
<td>ART-112</td>
<td>Printmaking: Etching II</td>
</tr>
<tr>
<td>ART-114</td>
<td>Printmaking: Woodblock</td>
</tr>
<tr>
<td>ART-116</td>
<td>Printmaking: Stencil and Screen Print</td>
</tr>
</tbody>
</table>

#### Family: Painting

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-120</td>
<td>Watercolor I</td>
</tr>
<tr>
<td>ART-120A</td>
<td>Introduction to Watercolor</td>
</tr>
<tr>
<td>ART-120B</td>
<td>Watercolor Workshop</td>
</tr>
<tr>
<td>ART-121</td>
<td>Watercolor II</td>
</tr>
<tr>
<td>ART-128</td>
<td>Painting I: Introduction to Painting</td>
</tr>
<tr>
<td>ART-128A</td>
<td>Introduction to Oil/Acrylic Painting A</td>
</tr>
<tr>
<td>ART-128B</td>
<td>Introduction to Oil/Acrylic Painting B</td>
</tr>
<tr>
<td>ART-127</td>
<td>Painting II: Intermediate Painting</td>
</tr>
<tr>
<td>ART-128</td>
<td>Painting Concepts and Theme Development</td>
</tr>
<tr>
<td>ART-129</td>
<td>Advanced Painting</td>
</tr>
<tr>
<td>ART-130</td>
<td>Figure Painting</td>
</tr>
<tr>
<td>ART-131</td>
<td>Painting and Abstraction</td>
</tr>
</tbody>
</table>

#### Family: Sculpture

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-138</td>
<td>Sculpture I</td>
</tr>
<tr>
<td>ART-139</td>
<td>Sculpture II</td>
</tr>
<tr>
<td>ART-141</td>
<td>From Clay to Bronze</td>
</tr>
<tr>
<td>ART-142</td>
<td>Metal Art I</td>
</tr>
<tr>
<td>ART-143</td>
<td>Metal Art II</td>
</tr>
<tr>
<td>ART-144</td>
<td>Metal Casting Techniques I</td>
</tr>
<tr>
<td>ART-145</td>
<td>Metal Casting Techniques II</td>
</tr>
<tr>
<td>ART-150CB</td>
<td>From Clay to Bronze</td>
</tr>
<tr>
<td>ART-150WK</td>
<td>Woodworking for Sculpture</td>
</tr>
</tbody>
</table>

#### Family: Applied Art Design

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-146</td>
<td>Metalsmithing and Jewelry I</td>
</tr>
<tr>
<td>ART-147</td>
<td>Metalsmithing and Jewelry II</td>
</tr>
<tr>
<td>ART-150DC</td>
<td>Digital Ceramics Workshop</td>
</tr>
<tr>
<td>ART-150HC</td>
<td>Hand-Built Ceramics II</td>
</tr>
<tr>
<td>ART-150LE</td>
<td>Metalsmithing and Jewelry III</td>
</tr>
<tr>
<td>ART-150PJ</td>
<td>Production Pottery</td>
</tr>
<tr>
<td>ART-150PX</td>
<td>Wheel-Thrown Pottery III</td>
</tr>
<tr>
<td>ART-150PY</td>
<td>Wheel-Thrown Pottery IV</td>
</tr>
<tr>
<td>ART-152</td>
<td>Wheel-Thrown Pottery I</td>
</tr>
<tr>
<td>ART-153</td>
<td>Wheel-Thrown Pottery II</td>
</tr>
<tr>
<td>ART-154</td>
<td>Hand-Built Ceramics I</td>
</tr>
<tr>
<td>ART-252</td>
<td>Wheel-Thrown Pottery III</td>
</tr>
<tr>
<td>ART-253</td>
<td>Wheel-Thrown Pottery IV</td>
</tr>
<tr>
<td>ART-254</td>
<td>Hand-Built Ceramics II</td>
</tr>
</tbody>
</table>
### Family: Ceramic Art

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-150CR</td>
<td>Ceramic Sculptures II - Surface</td>
</tr>
<tr>
<td>ART-151</td>
<td>Visual Theory and Practice- Ceramic Art</td>
</tr>
<tr>
<td>ART-155</td>
<td>Ceramic Sculpture I</td>
</tr>
<tr>
<td>ART-156</td>
<td>Figurative Ceramics I</td>
</tr>
<tr>
<td>ART-255</td>
<td>Ceramic Sculpture II</td>
</tr>
<tr>
<td>ART-256</td>
<td>Figurative Ceramics II</td>
</tr>
</tbody>
</table>

### Family: Photography

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-150PA</td>
<td>Advanced Alternative Photographic Process</td>
</tr>
<tr>
<td>ART150PK</td>
<td>The Digital Darkroom</td>
</tr>
<tr>
<td>ART-160</td>
<td>Photography I</td>
</tr>
<tr>
<td>ART-161</td>
<td>Photography II</td>
</tr>
<tr>
<td>ART-163</td>
<td>Documentary Photography</td>
</tr>
<tr>
<td>ART-164</td>
<td>Photographic Portfolio Development</td>
</tr>
<tr>
<td>ART-165</td>
<td>Advanced Photographic Portfolio Development</td>
</tr>
</tbody>
</table>

### 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. C-ID ARTS 100, 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**

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. C-ID ARTS 101, CSU, UC

### ART-103 Visual Theory and Practice - Color Theory

- **3 units**  
- **SC**  
- **36 hours lecture/72 hours laboratory per term**  
- **Recommended: ART-101 or equivalent; eligibility for ENGL-116/118 or equivalent**

This is an introductory course that will expose students to a global view of the history of color theory and its application. The art of 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 will be examined. Development of critical thinking skills through the analysis of cultural and technological constructs that influence the creation of specific genres will be emphasized. Students will produce original works of art by reinterpreting the traditions they study in a contemporary context. The historical impact of pigments on art and culture will also be explored. CSU, UC

### ART-105 Drawing I

- **3 units**  
- **SC**  
- **36 hours lecture/72 hours laboratory per term**  
- **Recommended: ART-101 or equivalent; eligibility for ENGL-116/118 or equivalent**  
- **Prerequisite: ART-105 or equivalent**  
- **Recommended: Eligibility for ENGL-116/118 or equivalent**  
- **Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.**

This course introduces observational drawing concepts and form-rendering techniques. Basic visual problem solving skills including perceptual drawing and application of compositional principles will be presented. C-ID ARTS 110, CSU, UC

### ART-106 Drawing II

- **3 units**  
- **SC**  
- **36 hours lecture/72 hours laboratory per term**  
- **Prerequisite: ART-105 or equivalent**   
- **Recommended: 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. C-ID ARTS 205, CSU, UC

### ART-107 Figure Drawing I

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

This course introduces drawing the human figure from live models. Basic human anatomy and its application to figure drawing will be discussed. Pencil, charcoal, and ink techniques will be practiced in the creation of figure drawings. C-ID ARTS 200, CSU, UC
ART-108  Figure Drawing II  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Prerequisite: ART-107 or equivalent  
- Recommended: Eligibility for ENGL-116/118 or equivalent  
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.  
This course introduces drawing from the human figure with 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  
This course is an exploration of monotype (single image) processes utilizing a painterly approach to printmaking. Emphasis will be 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  
This course is an introduction to various printmaking techniques including dry point, linoleum cut, monotype, stencil, and collagraph. CSU, UC

ART-111  Printmaking: Etching I  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-110 or equivalent; eligibility for ENGL-116/118 or equivalent  
- Note: Mandatory materials fee required  
This course is the study of intaglio printmaking including 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. Projects may include publishing multiple impressions in book arts form. CSU, UC

ART-112  Printmaking: Etching II  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Prerequisite: ART-111 or equivalent  
- Recommended: Eligibility for ENGL-116/118 or equivalent  
- Note: Mandatory materials fee required  
This course is a continuation of study of the intaglio printmaking including line etching, aquatint, deepbite, multiple color plates, and photo etching. Projects and discussion further develop students’ understanding of the traditional print media and application of contemporary methods. Projects may include publishing multiple impressions in book arts form. CSU, UC

ART-114  Printmaking: Woodblock  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-110 or equivalent; eligibility for ENGL-116/118 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 letter press 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, UC

ART-116  Printmaking: Stencil and Screen Print  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-110 or equivalent; eligibility for ENGL-116/118 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

ART-120  Watercolor I  
3 units  SC  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART-105 or equivalent; eligibility for ENGL-116/118 or equivalent  
- Note: ART-120A and 120B combined are equivalent to ART-120  
This course is an introduction to 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 units  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 units  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 equal to ART-120.

Emphasis on problem solving concept, development, and skill demonstration in watercolor. CSU, UC

ART-121  Watercolor II
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Prerequisite: ART-120 or equivalent
- Recommended: Eligibility for ENGL-116/118 or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

This course is a continuation of the study of watercolor materials and techniques with emphasis on the development of intermediate level skills and concepts required to produce a portfolio of work. CSU, UC

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

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

ART-127  Painting II: Intermediate Painting
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Prerequisite: ART-126 or equivalent
- Recommended: ART-103 or equivalent; eligibility for ENGL-116/118 or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

This is an intermediate level painting course that provides students with painting projects designed to further develop painting techniques and problem solving abilities. Principles of critiquing art will also be covered. CSU, UC

ART-128  Painting Concepts and Theme Development
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: 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-127 or equivalent; 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. Students will complete a portfolio consisting of a cohesive and thematic series of paintings. CSU, UC
ART-130  Figure Painting
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: ART-107, ART-127 and eligibility for ENGL-116/118 or equivalents
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, UC

ART-131  Painting and Abstraction
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: ART-127 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, UC

ART-135  Art Gallery/Museum Management
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: Eligibility for ENGL-116/118 or equivalent
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: ART-102 or equivalent; eligibility for ENGL-116/118 or equivalent
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-102 and ART-138 or equivalents
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-141  From Clay to Bronze
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Recommended: ART-102 or equivalent; eligibility for ENGL-116/118 or equivalent
• Note: Mandatory materials fee required
This class explores sculpture from clay to bronze in a variety of traditional and contemporary techniques. Clay modeling and hand building are utilized as a means to create finished cast bronze works. Traditional skills of lost-wax casting and ceramic sculpture are combined with contemporary approaches to 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 provides an introduction to various metal sculpture processes. Students will apply 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
This course provides a continuation of the study of various aspects of metal arts. Intermediate techniques in metal casting of bronze, aluminum, and iron, as well as the fabrication of steel sculpture using the forge, and welding are explored. Emphasis will be on advanced design and technique. The history of traditional and contemporary metal sculpture will also be covered. CSU
ART-144  Metal Casting Techniques I  
3 units  
- 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  
- 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 projects. The casting process for aluminum, bronze, and/or iron will be thoroughly explored. Advanced mold-making techniques in rubber, Resin-Bonded Sand Molds, Green Sand, Standard Investment molds, and Ceramic Shell molds are covered. Emphasis is added to sustainable studio practice, as well as advanced 3-D design. CSU  

ART-146  Metalsmithing and Jewelry I  
3 units  
- 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  
- 36 hours lecture/72 hours laboratory per term  
- Recommended: ART 102 or equivalent and ART 146 or equivalent  
- Note: Mandatory materials fee required  
This is an advanced metalsmithing/jewelry course with an emphasis on hands-on processes incorporating Individual design, aesthetics, and conceptualization. Further exploration of traditional and contemporary metalsmithing design and aesthetics will be presented. Techniques such as advanced chainmaking, advanced stone setting, forming and raising, chasing, moldmaking, and casting are introduced. CSU  

ART-150  Topics in Studio Art  
.3-.4 units  
- 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 in Ceramic Art  
3 units  
- 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 Pottery I  
3 units  
- 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 using the potter's wheel, as well as the development of critical thinking skills through the examination of ceramic art. Through the study of the art of various 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 Pottery II  
3 units  
- 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-level, wheel-thrown pottery course focuses on the development of surface treatments. Students will study both form and surface treatments from various western and non-western cultures. Experimentation with a variety of different materials and processes as well as the fundamentals of glaze formulation and mixing will be emphasized. CSU, UC
ART-154  Hand-Built Ceramics I
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. This will involve the study of hand-built ceramics from various western and non-western cultures. Students will explore the creative potential of these methods during the construction of original hand-built ceramics. CSU, UC

ART-155  Ceramic Sculpture I
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 ceramic sculpture. Its focus is on fundamental techniques and creative strategies to produce ceramic sculpture. This involves the study of sculptural form from various western and non-western cultures and the creation of original works. CSU, UC

ART-156  Figurative Ceramics I
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 fundamental techniques and creative strategies to produce ceramic sculpture based on the human figure. This involves the study of sculptural form from various western and non-western cultures and the creation of original figurative ceramic sculpture based on observations of live models and other sources. 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 will need to have a working SLR film camera with manual capability.
• Note: Mandatory materials fee required.

This course presents an introduction to black and white film photography offering students a working knowledge of the basics of traditional darkroom photography, including history, theory and practice. Film scanning and digital photography will also be introduced. The technical aspects of photography along with the historical and contemporary role of photography in visual expression, including contributions from diverse cultures will be explored. Class critiques will be used to analyze and discuss photographic images as a form of personal expression and communication. Students will produce a portfolio of photographs. 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.
• Formerly ART-162

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
- Formerly ART-265

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-252  Wheel-Thrown Pottery III
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-level, wheel-thrown pottery course focuses on the development of wheel-thrown and altered vessel forms. Emphasis is placed on using wheel-thrown forms as a starting point for more complex structures. The study of vessels from various cultures and the creation of complex forms will be discussed. CSU, UC

ART-253  Wheel-Thrown Pottery IV
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-level, wheel-thrown pottery course focuses on the development of functional pottery forms for the production potter. The study of the art of various cultures, the fundamentals of three-dimensional design, and the development of a vocabulary of aesthetic terms and theories will be addressed. Students will engage in both critical discussion and creative application utilizing the potter’s wheel to develop a line of functional pottery forms. CSU, UC

ART-254  Hand-Built Ceramics II
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-154 or equivalent; eligibility for ENGL-116/118 or equivalent
- Note: Mandatory materials fee required

This intermediate-level, hand-built ceramics course focuses on the progressive refinement of hand-built techniques with an emphasis on surface treatment. This involves the study of hand-built forms and surfaces from various western and non-western cultures and the creation of original hand-built ceramics with an emphasis on developing unique surfaces. CSU, UC

ART-255  Ceramic Sculpture II
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-155 or equivalent; eligibility for ENGL-116/118 or equivalent
- Note: Mandatory materials fee required

This intermediate-level, ceramic sculpture course focuses on the progressive refinement of sculpture form with an emphasis on surface treatment. This involves the study of sculptural form and surface from various western and non-western cultures and the creation of original ceramic sculpture with an emphasis on developing unique surfaces. CSU, UC

ART-256  Figurative Ceramics II
3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ART-156 or equivalent; eligibility for ENGL-116/118 or equivalent
- Note: Mandatory materials fee required

This intermediate-level, figurative ceramics course focuses on the progressive refinement of figurative sculptural form with an emphasis on surface treatment. This involves the study of figurative sculptural form and surface from various western and non-western cultures. The creation of original figurative ceramic sculpture is based on observations of live models and other sources, with an emphasis on developing unique surfaces. CSU, UC

ART-298  Independent Study
.5-.3 units  SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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**

Toni Fannin, Interim Dean  
Applied and Fine Arts Division  
Business and Foreign Language Building, Room 204

**Possible career opportunities**

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

**Program-level student learning outcomes**

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

**Associate in arts degree**

**Animation and game design**

Students completing the program will be able to...

A. develop technical proficiency using computer hardware and software appropriate to the animation, game design, or 3D design industry.

B. visually conceptualize in a clear and concise way the artistic direction for a 3D animation, or game design project.

C. create appropriate typographic solutions for a variety of design situations.

D. articulate, analyze and evaluate the meaning in creative projects, including social contexts and ethical choices.

E. select appropriate tools, materials and processes for a range of media products.

F. work collaboratively within a creative team.

G. develop a professional portfolio of work.

The animation and game design associate in arts degree provides students with a strong foundation in the fundamental aspects of 3D animation and game design. Students will learn the skills to develop 3D animations and game design including techniques such as modeling, animation, texturing, and game engine integration. Courses present material that will take the student through the production process and workflow of 3D animation and game design. Curriculum includes traditional animation techniques, drawing, and the technical fundamentals of 3D animation and game design. The program goal is to provide the skills necessary to enter this growing, professional field.

The types of industries that employ individuals with animation and game design skills include animation for film or television, game design, game development for the web, animation for the web, or assets for game production. Advanced students have the opportunity to create portfolios to prepare for animation and game design careers.

To earn an associate in arts degree with a major in animation and game 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 other 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>ART-106</td>
<td>Drawing II</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-165</td>
<td>Cartoon Drawing for Digital Animation</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-175</td>
<td>Digital Animation</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-180</td>
<td>Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-181</td>
<td>Intermediate Game Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-214</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTDM-105</td>
<td>Introduction to Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTHS-197</td>
<td>History of Baroque to 20th Century Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-199</td>
<td>Contemporary Art History</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-240</td>
<td>History of Broadcasting and Electronic Media</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTDM-149</td>
<td>Fundamentals of Digital Video</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>
</tr>
</tbody>
</table>

**Total minimum required units**: 36
Art digital media

**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.

The art digital media associate in arts program prepares students for entry level employment in the digital media industry. 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>
</tr>
</thead>
<tbody>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-105</td>
<td>Introduction to Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-115</td>
<td>Digital Interface Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-117</td>
<td>Digital Illustration</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-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-191</td>
<td>Multimedia Portfolio Development</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-214</td>
<td>Introduction to Graphic Design</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-106</td>
<td>Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>ART-107</td>
<td>Figure Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-103</td>
<td>Visual Theory and Practice – Color Theory</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-100</td>
<td>Introduction to the History and Development of Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-101</td>
<td>Introduction to the Production of Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-130</td>
<td>Introduction to Digital Audio</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-136</td>
<td>Introduction to Digital Photography</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>
<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>
</tr>
<tr>
<td>ARTDM-175</td>
<td>Digital Animation</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-180</td>
<td>Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-224</td>
<td>Typography</td>
<td>3</td>
</tr>
<tr>
<td>BUS-109</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-191</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-110</td>
<td>Introduction to Programming</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-165</td>
<td>Digital Editing</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-166</td>
<td>Intermediate Digital Editing</td>
<td>3</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>
<tr>
<td>MUSX-174</td>
<td>Introduction to Pro Tools</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units**  36

**Associate in arts degree**  
**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.

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

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

DVC graphic design students who intend to transfer must consult with a program advisor to select appropriate courses and are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU 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.

**major requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-105</td>
<td>3</td>
</tr>
<tr>
<td>ART-106</td>
<td>3</td>
</tr>
<tr>
<td>ART-110</td>
<td>3</td>
</tr>
<tr>
<td>ART-138</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-117</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-136</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-171</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-190</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-214</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-199</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>ARTDM-105</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-112</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 36

**Certificate of achievement**

**Animation and game design**

Students completing the program will be able to...

- A. develop technical proficiency using computer hardware and software appropriate to the animation, game design, or 3D design industry.
- B. visually conceptualize in a clear and concise way the artistic direction for a 3D animation, or game design project.
- C. create appropriate typographic solutions for a variety of design situations.
- D. articulate, analyze and evaluate the meaning in creative projects, including social contexts and ethical choices.
- E. select appropriate tools, materials and processes for a range of media products.
- F. work collaboratively within a creative team.
- G. develop a professional portfolio of work.

The animation and game design certificate of achievement program provides students with a strong foundation in the fundamental aspects of 3D animation and game design. Students will learn the skills to develop 3D animations and game design including techniques such as modeling, animation, texturing, and game engine integration. Courses present material that will take the student through the production process and workflow of 3D animation and game design. Curriculum includes traditional animation techniques, drawing and the technical fundamentals of 3D animation and game design. The program goal is to provide the skills necessary to enter this growing, professional field.

The types of industries that employ individuals with animation and game design skills include animation for film or television, game design, game development for the web, animation for the web, or assets for game production. Advanced students have the opportunity to create portfolios to prepare for animation and game design careers.

To earn a certificate of achievement in animation and game design, students must complete each course used to meet a major requirement with a "C" grade or higher. Certificate requirements can be completed by attending classes in the day, evening, online, or a combination of those.

**required courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-106</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-140</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-160</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-161</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-165</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-175</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-180</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-181</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-214</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>ARTHS-197</td>
<td>3</td>
</tr>
<tr>
<td>ARTHS-199</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-240</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 36

**Certificate of achievement**

**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.
The art digital media program prepares students for entry level employment in one of four specialty areas of the digital media industry: character animation, digital imaging, motion graphics, 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:

**Graphic Design**

- **ARTDM-112** Digital Imaging for the Artist ........................................... 3
- **ARTDM-136** Introduction to Digital Photography ........................................... 3
- **ARTDM-165** Cartoon Drawing for Digital Animation ...................................... 3
- **ARTDM-166** Intermediate Cartoon Drawing for Digital Animation ...................... 3
- **ARTDM-214** Introduction to Graphic Design ................................................ 3

**Digital Imaging**

- **ARTDM-117** Digital Illustration .......................................................... 3
- **ARTDM-140** Motion Graphics ................................................................. 3
- **ARTDM-160** 3D Modeling and Animation I ........................................... 3
- **ARTDM-171** Introduction to Web Design .................................................. 3
- **ARTDM-170** Animation and Interactivity ................................................. 3
- **FTVE-165** Digital Editing ........................................................................ 3

**Character Animation**

- **ART-105** Drawing I ........................................................................... 3
- **ARTDM-105** Introduction to Digital Imaging ........................................... 3
- **ARTDM-115** Digital Interface Design ..................................................... 3
- **ARTDM-127** Digital Illustration .......................................................... 3
- **ARTDM-140** Motion Graphics ................................................................. 3
- **ARTDM-160** 3D Modeling and Animation I ........................................... 3
- **ARTDM-171** Introduction to Web Design .................................................. 3
- **ARTDM-180** Digital Media Projects ......................................................... 3
- **ARTDM-191** Multimedia Portfolio Development ........................................ 3
- **ARTDM-224** Typography ........................................................................ 3

**Motion Graphics**

- **ART-107** Figure Drawing I .................................................................... 3
- **ARTDM-170** Animation and Interactivity ................................................. 3
- **FTVE-165** Digital Editing ........................................................................ 3

**Web Design**

- **ART-107** Figure Drawing I .................................................................... 3
- **ARTDM-170** Animation and Interactivity ................................................. 3
- **ARTDM-224** Typography ........................................................................ 3

### Total Minimum Required Units: 36

### Additional Requirements:

- **Plus at least 6 units from one of the 4 specialty areas listed below:**
  - **ARTDM-224**
  - **ARTDM-214**
  - **ARTDM-171**
  - **ARTDM-136**
  - **ARTDM-117**
  - **ARTDM-112**

### 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.

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:

- **ART-105** Drawing I ........................................................................... 3
- **ART-106** Drawing II ........................................................................... 3
- **ART-110** Introduction to Printmaking ................................................... 3
- **ART-138** Sculpture .............................................................................. 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

### Total Minimum Required Units: 36

### Additional Requirements:

- **Plus at least 3 units from:**
  - **ARTDM-105** Introduction to Digital Imaging ........................................... 3
  - **ARTDM-112** Digital Imaging for the Artist ........................................... 3
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 Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-105</td>
<td>Introduction to Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-130</td>
<td>Introduction to Digital Audio</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-148</td>
<td>Fundamentals of Digital Video</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Minimum Required Units:** 15

### 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>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-115</td>
<td>Digital Interface Design</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-180</td>
<td>Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-214</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-165</td>
<td>Digital Editing</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-166</td>
<td>Intermediate Digital Editing</td>
<td>3</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>

### SFV/UCSC

#### ARTDM-100 Introduction to the History and Development of Digital Media

- 3 units SC
  - 36 hours lecture/54 hours laboratory per term
  - Recommended: ENGL-116/118 or ENGL-117 or equivalent

This course introduces students to digital media through theory and hands-on activities. The history, aesthetics, technology, and social impacts of digital media will be explored. CSU, UC

#### ARTDM-101 Introduction to the Production of Digital Media

- 3 units SC
  - 36 hours lecture/54 hours laboratory per term
  - Recommended: ENGL-116/118 or ENGL-117 or equivalent

This course introduces key concepts, technologies, and the creation of digital media. Time-based art, network culture, image resolution, computational techniques, and interactivity will be examined. Students will also explore ways of constructing different types of digital media and investigate the history of digital technology. CSU, UC

#### ARTDM-105 Introduction to Digital Imaging

- 3 units SC
  - 36 hours lecture/54 hours laboratory per term
  - Note: This course is equivalent to ARTDM-110 and ARTDM-111 combined. Credit by examination option available.

This course presents design and composition concepts, processes, and aesthetic interpretation of making digital imagery. Students will create computer graphics and edit digital images from scanned photographs and digital photography. CSU, UC

#### 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 course is designed to develop a fine arts approach to computer-generated imaging using graphic arts software. An emphasis will be placed on the application and integration of color theory as well as design principles with digital imaging. C-ID ARTS 250, CSU, UC

#### ARTDM-115 Digital Interface Design

- 3 units SC
  - 36 hours lecture/54 hours laboratory per term
  - Recommended: ARTDM-105 or equivalent

This introductory course explores current trends and techniques of interface design and design skills. Emphasis is placed on the development of visual solutions for various interactive communication problems, platforms, and devices. CSU, UC
ARTDM-117 Digital Illustration
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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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, UC

ARTDM-130 Introduction to Digital Audio
3 units SC
- 36 hours lecture/54 hours laboratory per term

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 a variety of digital media formats including DVD’s, 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 skills required 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-105 or equivalent

This introductory course focuses on the creative design skills required to create effective motion graphics. Students will create motion graphics utilizing digital video and various graphic file formats. The theory and production of animated two-dimensional (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, UC

ARTDM-149 Fundamentals of Digital Video
3 units SC
- 36 hours lecture/54 hours laboratory per term

This introductory course covers the application of video to various forms of digital media including how to capture, edit and create digital video for DVD’s and the internet. The course will involve hands-on work with a variety of digital workstations and multimedia software applications. CSU, UC

ARTDM-150 Topics in Digital Media
.5-4 units SC
- Variable hours

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

ARTDM-160 3D Modeling and Animation I
3 units SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: ARTDM-105 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, UC

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, UC
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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree. Credit by examination option available.

This course will introduce students to the skills necessary to create character animations, script development and storyboarding. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply toward the 60 units required for the degree.

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-105 or equivalent

This course provides an introduction to interactive concepts and techniques for creating animation for the web. Fundamentals of animation and the integration of sound and video elements will be covered. CSU, UC

ARTDM-171 Introduction to Web Design  
3 units  SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: ARTDM-105 or equivalent

This introductory course focuses on the essential principles and processes of web design. Students will design and publish effective websites using HTML, cascade style sheets (CSS) and a variety of software tools. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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-105 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, UC

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, UC

ARTDM-190 Digital Media Projects  
3 units  SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: ART-105, ARTDM-130 and ARTDM-149 or equivalents

This advanced course is designed for students who are preparing for employment in the digital media industry. Working independently and in teams, students will use a variety of software and design tools to create projects for real-world clients. Students will also 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-105, 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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

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

ART HISTORY – ARTHS

Toni Fannin, Interim 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-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.
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 those interested in art history as preparation for a major. 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 a 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: 21 units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-105</td>
<td>Drawing I</td>
<td></td>
</tr>
<tr>
<td>ARTS-193</td>
<td>History of Asian Art</td>
<td></td>
</tr>
<tr>
<td>ARTS-196</td>
<td>History of Prehistoric and Ancient Art</td>
<td></td>
</tr>
<tr>
<td>ARTS-198</td>
<td>History of Medieval and Renaissance Art</td>
<td></td>
</tr>
<tr>
<td>ARTS-199</td>
<td>History of Baroque to 20th Century Art</td>
<td></td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>ART-101</td>
<td>Introduction to Two-Dimensional Design</td>
<td></td>
</tr>
<tr>
<td>ART-102</td>
<td>Introduction to Sculpture and Three-Dimensional Design</td>
<td></td>
</tr>
<tr>
<td>ART-107</td>
<td>Figure Drawing I</td>
<td></td>
</tr>
<tr>
<td>ART-135</td>
<td>Sculpture I</td>
<td></td>
</tr>
<tr>
<td>ART-142</td>
<td>Metal Art I</td>
<td></td>
</tr>
<tr>
<td>ART-152</td>
<td>Wheel-Thrown Pottery I</td>
<td></td>
</tr>
<tr>
<td>ART-160</td>
<td>Photography I</td>
<td></td>
</tr>
<tr>
<td>ARTDM-112</td>
<td>Digital Imaging for the Artist</td>
<td></td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>ARTHS-199</td>
<td>Contemporary Art History</td>
<td></td>
</tr>
<tr>
<td>ENGL-176</td>
<td>The Graphic Novel as Literature</td>
<td></td>
</tr>
<tr>
<td>FRNCH-121</td>
<td>Second Term French</td>
<td></td>
</tr>
<tr>
<td>FRNCH-220</td>
<td>Third Term French</td>
<td></td>
</tr>
<tr>
<td>FRNCH-221</td>
<td>Fourth Term French</td>
<td></td>
</tr>
<tr>
<td>FRNCH-230</td>
<td>Fifth Term French</td>
<td></td>
</tr>
<tr>
<td>FRNCH-231</td>
<td>Sixth Term French</td>
<td></td>
</tr>
<tr>
<td>GRMAN-121</td>
<td>Second Term German</td>
<td></td>
</tr>
<tr>
<td>GRMAN-220</td>
<td>Third Term German</td>
<td></td>
</tr>
<tr>
<td>GRMAN-221</td>
<td>Fourth Term German</td>
<td></td>
</tr>
<tr>
<td>GRMAN-230</td>
<td>Fifth Term German</td>
<td></td>
</tr>
<tr>
<td>GRMAN-231</td>
<td>Sixth Term German</td>
<td></td>
</tr>
<tr>
<td>HUMAN-110</td>
<td>Humanities: Ancient Civilizations</td>
<td></td>
</tr>
<tr>
<td>HUMAN-111</td>
<td>Humanities: The Middle Ages and Renaissance</td>
<td></td>
</tr>
<tr>
<td>HUMAN-112</td>
<td>Humanities: The Modern World</td>
<td></td>
</tr>
<tr>
<td>HUMAN-115</td>
<td>Humanities: Multicultural America</td>
<td></td>
</tr>
<tr>
<td>HUMAN-116</td>
<td>Humanities: Asian Arts and Cultures</td>
<td></td>
</tr>
<tr>
<td>ITAL-121</td>
<td>Second Term Italian</td>
<td></td>
</tr>
<tr>
<td>ITAL-220</td>
<td>Third Term Italian</td>
<td></td>
</tr>
<tr>
<td>ITAL-221</td>
<td>Fourth Term Italian</td>
<td></td>
</tr>
<tr>
<td>ITAL-230</td>
<td>Fifth Term Italian</td>
<td></td>
</tr>
<tr>
<td>ITAL-231</td>
<td>Sixth Term Italian</td>
<td></td>
</tr>
</tbody>
</table>

**total minimum required units** 21
ARTHS-190  Topics in Art History
  .3-4 units  SC
- Variable hours
- Recommended: Eligibility for ENGL-116/118 or equivalent
A supplemental course in art history to provide a study of current concepts and problems in art history. Specific topics will be announced in the schedule of classes. CSU

ARTHS-191  Critical Thinking in Visual Studies
  3 units  SC
- 54 hours lecture per term
- Prerequisite: ENGL-122 or equivalent
This course explores the power of visual culture including analysis of how visual culture creates and mediates meaning. Emphasis is placed on understanding and using principles of inductive and deductive reasoning as well as on evaluation and creation of argument, persuasion, and criticism of visual culture topics from both visual and textual sources. Students will investigate our rich visual world which includes art, advertisements, illustrations, and many other forms of visual communication that inform and mediate every aspect of our lives. CSU, UC

ARTHS-193  History of Asian Art
  3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-116/118 or equivalent
This course provides 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. C-ID ARTH 130, CSU, UC

ARTHS-195  History of Prehistoric and Ancient Art
  3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-116/118 or equivalent
A history of Western art from the Paleolithic through the end of the Roman period and the beginning of early Christian art. Archaeological 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. ARTHS-195 + ARTHS-196 = C-ID ARTH 110, CSU, UC

ARTHS-196  History of Medieval and Renaissance Art
  3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
The course presents the 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. ARTHS-195 + ARTHS-196 = C-ID ARTH 110, CSU, UC

ARTHS-197  History of Baroque to 20th Century Art
  3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course presents a history of Western art from the 17th century through major movements of the 20th century. Stylistic changes are related to significant social and cultural changes. Consideration is given to the changing role of the artist. CSU, UC

ARTHS-199  Contemporary Art History
  3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course presents a survey of contemporary art in the United States and Europe from 1945 to the present. Recent global trends 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. CSU, UC

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

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

ASTRO-110  The Visible Universe
3 units LR
- 54 hours lecture per term
- Recommended: MATH-090 and eligibility for ENGL-122 or equivalents

This course covers 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 provides students with the opportunity to observe concepts presented in class. 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 or MATH-090SP or MATH-090C or one year of high school algebra or equivalent and MATH-114 and eligibility for ENGL-122 or equivalents

This course presents an introduction to an elementary mathematical approach to the solving of problems relating to solar and stellar systems. Properties and evolution of stars and galaxies as well as their role in the evolution of the universe will be the major emphasis. Instrumentation used for and the analysis of electromagnetic radiation will also be discussed. CSU, UC (credit limits may apply to UC - see counselor)

ASTRO-128  The Universe for Beginners
4 units LR
- 54 hours lecture/54 hours laboratory per term
- Recommended: MATH-090, and eligibility for ENGL-122 or equivalents

This course provides an overview of our current state of knowledge concerning the universe and the methods astronomers use to arrive at their conclusions. Students will observe the sky and physical phenomena and will solve astronomical problems to solidify their knowledge and skills. The internet will be used extensively. CSU, UC (credit limits may apply to UC - see counselor)

ASTRO-130  Astronomy Laboratory
1 unit LR
- 54 hours laboratory per term
- Prerequisite: ASTRO-110 or 120 or equivalent (may be taken concurrently)

The laboratory experience will involve the study of the fundamentals of astronomy and will include investigations of the sun, moon, planets, stars and galaxies. Telescopes and other instruments will be used by students to gather data. Students will analyze data they have collected as well as that collected by others. CSU, UC

ASTRO-298  Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

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

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

Diablo Valley College is approved by the California Board of Registered Nurses for continuing education credits (provider #CEP 7992). Biological Science courses that can be used are BIOSC-119, 120, 139, 140 and 146.

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

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

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree
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 knowledge of the structure of the human body including both normal and pathological conditions.

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>
</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-107 Integrated Inorganic, Organic and Biological Chemistry | 5 |
| CHEM-108 Introductory Chemistry | 4 |
| CHEM-109 Introduction to Organic and Biochemistry | 4 |
| CHEM-120 General College Chemistry I | 5 |

total minimum required units 18

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.

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. 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-119 Human Anatomy</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-140 Human Physiology</td>
<td>5</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-107 Integrated Inorganic, Organic and Biological Chemistry | 5 |
| CHEM-108 Introductory Chemistry | 4 |
| CHEM-109 Introduction to Organic and Biochemistry | 4 |
| CHEM-120 General College Chemistry I | 5 |

total minimum required units 18

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.
The DVC biology major is intended to transfer. Students wishing to transfer must consult with a counselor regarding other courses in math, chemistry and physics that may be required by the four year institution to which they intend to transfer. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU 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.

major requirements:

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**

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).

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:**

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

plus at least 4 units from:

CHEM-107 Integrated Inorganic, Organic, and Biological Chemistry.............. 5
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 Ecology and Field Biology...................................................... 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
**Biological science**

**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.

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):**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-101</td>
<td>Fundamentals of Biological Science</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-102</td>
<td>Fundamentals of Biological Science with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-107</td>
<td>Genetics and Evolution</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-116</td>
<td>Human Physiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-117</td>
<td>Human Biology with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-119</td>
<td>Fundamentals of Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-120</td>
<td>Introduction to Human Anatomy and Physiology</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-126</td>
<td>Ecology and Field Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-130</td>
<td>Principles of Cellular and Molecular Biology</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-131</td>
<td>Principles of Organismal Biology, Evolution and Ecology</td>
<td>5</td>
</tr>
<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>BIOSC-146</td>
<td>Principles of Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-161</td>
<td>Fundamentals of Marine Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-162</td>
<td>Fundamentals of Marine Biology with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-170</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-171</td>
<td>Environmental Science with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>HORT-110</td>
<td>Introduction to Horticulture and Plant Science</td>
<td>4</td>
</tr>
<tr>
<td>HORT-148L</td>
<td>California Native Plants Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>NUTRI-160</td>
<td>Nutrition: Science and Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

---

**Physical science**

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTRO-110</td>
<td>The Visible Universe</td>
<td>3</td>
</tr>
<tr>
<td>ASTRO-120</td>
<td>Elementary Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>ASTRO-128</td>
<td>The Universe for Beginners</td>
<td>4</td>
</tr>
<tr>
<td>ASTRO-130</td>
<td>Astronomy Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ASTRO-298</td>
<td>Independent Study</td>
<td>0.5-3</td>
</tr>
<tr>
<td>CHEM-106</td>
<td>Chemistry for Non-Science Majors</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-107</td>
<td>Integrated Inorganic, Organic, and Biological Chemistry</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>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-121</td>
<td>General College Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-226</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-227</td>
<td>Organic Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-298</td>
<td>Independent Study</td>
<td>0.5-3</td>
</tr>
<tr>
<td>GEOG-120</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-121</td>
<td>Physical Geography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-126</td>
<td>Advanced Geographic Information Systems</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-160</td>
<td>Introduction to Remote Sensing</td>
<td>4</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Map Design and Visualization</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-298</td>
<td>Independent Study</td>
<td>0.5-3</td>
</tr>
<tr>
<td>GEOL-120</td>
<td>Physical Geology</td>
<td>3</td>
</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>GEOL-125</td>
<td>Geology of California</td>
<td>3</td>
</tr>
<tr>
<td>GEOL-298</td>
<td>Independent Study</td>
<td>0.5-3</td>
</tr>
<tr>
<td>OCEAN-101</td>
<td>Fundamentals of Oceanography</td>
<td>3</td>
</tr>
</tbody>
</table>
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 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 CSUGE/IGETC general education requirements; however, the units are only counted once toward the 60 unit requirement for an associate degree. Students are advised that for this major, they may use the IGETC for STEM (Science, Technology, Engineering and Mathematics) pattern. This pattern allows students to complete one course in Area 3A; one course in Area 3B; and two courses in Area 4 from two different disciplines. Some variations in major 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.

required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-130</td>
<td>Principles of Cellular and Molecular Biology</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-131</td>
<td>Principles of Organismal Biology, Evolution and Ecology</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-121</td>
<td>General College Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-182</td>
<td>Calculus for Management, Life Science and Social Science I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-192</td>
<td>Analytic Geometry and Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-120</td>
<td>General College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-121</td>
<td>General College Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-130</td>
<td>Physics for Engineers and Scientists A: Mechanics and Wave Motion</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230</td>
<td>Physics for Engineers and Scientists B: Heat and Electro-Magnetism</td>
<td>4</td>
</tr>
<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>
</tr>
<tr>
<td>CHEM-226</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-142</td>
<td>Elementary Statistics with Probability</td>
<td>4</td>
</tr>
<tr>
<td>PSYCH-101</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 35

**Associate in science in biology for transfer**

Students completing any program will be able to...

A. apply the scientific method of inquiry using appropriate and effective tools in obtaining, analyzing (including use of statistical procedures and standard techniques in data gathering), and interpreting information including peer-reviewed articles.

B. illustrate and analyze chemical bonds and reactions starting on the level of subatomic particles to the level of large organic molecules.

C. compare and contrast organismal life structures and functions including microorganisms.

D. demonstrate an understanding of the mechanisms and evidence for the theory of evolution.

E. demonstrate the concept of limits and apply limits to real-world problems.

F. solve problems involving rates of change and derivatives, including real-world problems.

G. explain the core concepts in mechanics; forces, motion, momentum and energy.

H. solve simple circuit problems involving electric potential, capacitance and resistance.

The associate in science in biology for transfer degree is designed as a two-year program that offers an introduction to the basic principles of biology as well as the supporting knowledge of chemistry, physics, and mathematics. The associate in science in biology 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.

(OCEAN-102) Fundamentals of Oceanography with Laboratory

(PHYS-110) Elementary Physics

(PHYS-111) Physics Laboratory

(PHYS-113) Elementary Modern Physics: From Atoms to the Big Bang

(PHYS-120) General College Physics I

(PHYS-121) General College Physics II

(PHYS-124) Calculus Supplement for Physics 120

(PHYS-125) Calculus Supplement for Physics 121

(PHYS-129) Introductory Physics for Engineers

(PHYS-130) Physics for Engineers and Scientists A: Mechanics and Wave Motion

(PHYS-230) Physics for Engineers and Scientists B: Heat and Electro-Magnetism

(PHYS-231) Physics for Engineers and Scientists C: Optics and Modern Physics

(PHYSSC-112) Fundamentals of Physical Science

(PHYS-298) Independent Study

**total minimum units for the major** 18

**Biological science**
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 knowledge of the structure of the human body including both normal and pathological conditions.

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>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-139</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-140</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-119</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-146</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-107</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-108</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-109</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-120</td>
<td>5</td>
</tr>
</tbody>
</table>

total minimum required units 18

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 knowledge of changes in bodily functions as a result of disease and determine the reason for functional changes.
D. analyze chemical reactions.

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

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

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

required course:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-120</td>
<td>5</td>
</tr>
<tr>
<td>BIOSC-119</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-146</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-107</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-108</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-109</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-120</td>
<td>5</td>
</tr>
</tbody>
</table>

total minimum required units 13

BIOSC-101 Fundamentals of Biological Science

3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Students who have successfully completed BIOSC-102 should not enroll in BIOSC-101. Students who have successfully completed BIOSC-102 will not receive credit for BIOSC-101.

In this course students will explore fundamental biological principles including 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
- 54 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Students who have successfully completed BIOSC-101 should not enroll in BIOSC-102. Students who have successfully completed BIOSC-101 will not receive credit for BIOSC-102.

In this course students will explore fundamental biological principles including 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. 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
- 54 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course presents the study of various aspects of genetics and evolution. Topics 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. The 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
- 54 hours lecture/54 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
- 54 hours lecture/54 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
- 54 hours lecture/54 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  Ecology and Field Biology
4 units  SC
- 54 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course is designed for non-majors and presents the principles of ecology, natural selection, speciation and biodiversity. During field laboratories, students will survey the natural history of ecological communities in northern California to identify dominant plant and animal species in each community and explore the influences of the physical environment on the evolutionary adaptations and ecology of the species. Human impacts on ecological systems and conservation issues are explored. CSU, UC
BIOSC-130  Principles of Cellular and Molecular Biology
5 units  SC
• 54 hours lecture/108 hours laboratory per term
• Prerequisite: CHEM-120 or equivalent
• Recommended: BIOSC-101 or BIOSC-102 and eligibility for ENGL-122 or equivalents

This course is formed around the universal biological processes of all organismal life with an emphasis on the cellular level of organization and is intended for biology majors or other students with an in-depth interest in the biological sciences. Topics include principles of biologic morphology and ultrastructure, biochemical pathways (photosynthesis and cellular respiration), enzymes, cellular communication and reproduction, classical and molecular genetics, gene control, embryology, immunology, and selected topics of animal physiology emphasizing homeostatic control mechanisms. The laboratory component focuses on methodologies necessary for analyzing molecular, cellular and genetic problems like microscopy, spectrophotometry, graphing and statistical analysis, as well as recombinant DNA technologies. BIOSC-130+BIOSC-131=C-ID BIOL 135S, CSU, UC.

BIOSC-131  Principles of Organismal Biology, Evolution and Ecology
5 units  SC
• 54 hours lecture/108 hours laboratory per term
• Prerequisite: CHEM-120 (may be taken concurrently) or equivalent
• Recommended: BIOSC-101 or 102, BIOSC-130 and eligibility for ENGL-122 or equivalents
• Note: It is strongly recommended to take BIOSC-130 before BIOSC-131. BIOSC-131 requires strong written and oral English language skills.

This course is formed around three main biological principles: evolution, unity/diversity of life, and ecology and is intended for biology majors or other students with an in-depth interest in the biological sciences. The focus is on universal biological processes with emphasis on the whole organism and higher levels of organization. Evidence and mechanisms of evolution and speciation; evolutionary history and diversity of life; structure, function and evolutionary adaptations of organisms (including plants, fungi, animals, and unicellular organisms); general, population and community ecology; ecosystems and environmental concerns are covered. In laboratory, students will explore these themes with hands-on observations, dissections, laboratory activities and field exercises. BIOSC-130+BIOSC-131=C-ID BIOL 135S, CSU, UC.

BIOSC-139  Human Anatomy
5 units  SC
• 54 hours lecture/108 hours laboratory per term
• Recommended: BIOSC-102 and eligibility for ENGL-122 or equivalents

The physical structure of the human body as an integrated unit is studied stressing normal structure and the changes that occur with aging and disease. The course content is appropriate for majors in physical and health education; nursing; physical, occupational and respiratory therapy; paramedical; nurse practitioner and physician assistant programs. Gross anatomy will be studied primarily through cadaver dissection in conjunction with preserved specimens, student self-reference, models and charts. Microscopic anatomy (histology) will be studied mainly through the use of microscope slides. C-ID BIOL 110B, CSU, UC (credit limits may apply to UC - see counselor).

BIOSC-140  Human Physiology
5 units  SC
• 54 hours lecture/108 hours laboratory per term
• Prerequisite: BIOSC-120 or BIOSC-139 or equivalent.
• Recommended: BIOSC-102, eligibility for ENGL-122, and MATH-120 or equivalents
• Note: This course is primarily intended for Nursing, Allied Health, Dental Hygiene, Kinesiology, and other health related majors.

This course presents the essential concepts of physiological mechanisms of the human body. Emphasis will be given to regulatory mechanisms ranging from the cellular level to organ-system level employing chemical, mathematical and physical principles. Topics of study will include physiological principles, function, integration and homeostasis of the human body at the cellular, tissue, organ, organ system and organismal level. Laboratory activities focus on methodologies necessary for the application, analysis and evaluation of major physiological principles using molecular technologies, bioelectronics, computer analysis, and/or live organisms. C-ID BIOL 120B, CSU, UC (credit limits may apply to UC - see counselor).

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

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

BIOSC-161  Fundamentals of Marine Biology
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: This course does not include a laboratory. Students requiring or wanting a laboratory to accompany this course should enroll in BIOSC-162. Students who have successfully completed BIOSC-162 should not enroll in BIOSC-161. Students who have successfully completed BIOSC-162 will not receive credit for BIOSC-161.

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. Topics will include: the scientific method and its utilization in the marine sciences; properties of the marine environment; marine organisms (including their diversity and evolutionary adaptations); marine ecosystems with a focus on local estuarine and coastal environments; marine ecology; and the sustainable use of marine biological resources. CSU, UC (credit limits may apply to UC - see counselor)

BIOSC-162  Fundamentals of Marine Biology with Laboratory
4 units  SC
• 54 hours lecture/54 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Students who have successfully completed BIOSC-161 should not enroll in BIOSC-162. Students who have successfully completed BIOSC-162 will not receive credit for BIOSC-162. This course will include field trips outside of regularly scheduled class time. Formerly BIOSC-160.

This course is an introduction to marine organisms, 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 (credit limits may apply to UC - see counselor)

BIOSC-170  Environmental Science
3 units  SC
• 54 hours lecture per term
• Recommended: BIOSC-101 or 102; eligibility for ENGL-122 or equivalents
• Note: Students who have successfully completed BIOSC-171 should not enroll in BIOSC-170. Students who have successfully completed BIOSC-171 will not receive credit for BIOSC-170.

This is an introductory course designed to expose students to environmental science. Human interactions with the environment and their consequences for living and nonliving systems will be examined. Topics will include evolution, ecology, biodiversity, human population dynamics, natural resource use, pollution, environmental degradation, climate change, marine and freshwater resources, and environmental policy. CSU, UC (credit limits may apply to UC - see counselor)

BIOSC-171  Environmental Science with Laboratory
4 units  SC
• 54 hours lecture/54 hours laboratory per term
• Recommended: BIOSC-101 or BIOSC-102 or equivalent; eligibility for ENGL-122 or equivalent
• Note: Students who have successfully completed BIOSC-170 should not enroll in BIOSC-171. Students who have successfully completed BIOSC-170 will not receive credit for BIOSC-170. Class field trips will be organized to local sites related to course topics.

This is an introductory course designed to expose students to environmental science. Human interactions with the environment and their consequences for living and nonliving systems will be examined. Topics will include 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 introduce the scientific method, including experimental design, sampling methods, 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
Possible career opportunities - Business

Possible career opportunities - Business management and leadership

Possible career opportunities - Business marketing

Possible career opportunities - Office professional

Program-level student learning outcomes

Associate in science degree
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:**

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

- plus at least 3 units from:
  - **BUSAC-181** Applied Accounting .................................................. 3
  - **BUSAC-186** Financial Accounting ................................................ 4

- plus at least 9 units from:
  - **BUS-105** Business Etiquette ...................................................... 1
  - **BUS-145** Business Spreadsheet Applications ................................. 2
  - **BUS-160** Personal Money Management ........................................ 3
  - **BUS-209** International Business .................................................... 3
  - **BUS-210** Introduction to e-Business .............................................. 3
  - **BUS-240** Business Statistics ........................................................ 3
  - **BUS-281** Investments .................................................................... 3
  - **BUS-291** Wills, Trusts, and Estate Planning .................................... 1.5
  - **BUSAC-185** QuickBooks Accounting for Business I ..................... 1.5
  - **BUSAC-187** Managerial Accounting .............................................. 4
  - **BUSAC-188** QuickBooks Accounting for Business II ......................... 1.5
  - **BUSAC-285** Federal Income Taxes – Individuals .............................. 3
  - **BUSMG-121** Practices and Concepts of Supervision ......................... 3
  - **BUSMG-131** Managing Diversity in the Workplace ............................ 3
  - **BUSMG-132** Human Resource Management .................................... 3
  - **BUSMG-191** Small Business Management .......................................... 3
  - **BUSMG-192** Entrepreneurship and Venture Management .. 3
  - **BUSMG-226** Group Behavior and Leadership .................................. 3
  - **BUSMK-158** Professional Selling ................................................... 3
  - **BUSMK-255** Advertising .................................................................. 3
  - **BUSMK-256** Marketing ................................................................... 3
  - **BUSMK-257** Applied Advertising and Promotion ............................. 3

### Associate in science in business administration for 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.

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.

The associate in science in business 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 a 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.

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.

<table>
<thead>
<tr>
<th>required courses:</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>
<td>3</td>
</tr>
</tbody>
</table>

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

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.

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

To earn a certificate of achievement in business-transfer students must complete each course used to meet a certificate requirement with a "C" grade or higher. All coursework required for the certificate must be completed within seven years of the certificate date.
required courses:  
BUSAC-186 Financial Accounting .................................................. 4  
BUSAC-187* Managerial Accounting ................................................. 4  
ECON-220* Principles of Macroeconomics ....................................... 3  
ECON-221* Principles of Microeconomics ......................................... 3  

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

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

plus at least 3 units from:  
BUS-109 Introduction to Business ...................................................... 3  
BUS-294 Business Law ....................................................................... 3  

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

**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.  

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, merchandise, account executive, buyer, market researcher, consultant, district manager, or store owner/operator. Some career options may require more than two years of college study.

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

**Certificate of achievement**  
**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.  

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

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

**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  
BUSMK-257 Applied Advertising and Promotion ............................ 3  
Any RE course ............................................................................... 3  

**total minimum required units** 24
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.

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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-109</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS-294</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-120</td>
<td>Introduction to Management Studies</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-121</td>
<td>Practices and Concepts of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-131</td>
<td>Managing Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-132</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-226</td>
<td>Group Behavior and Leadership</td>
<td>3</td>
</tr>
</tbody>
</table>

**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
Office professional

business information worker

Students completing the program will be able to...
A. apply oral and written communication best practices.
B. evaluate business situations using mathematics and software.
C. demonstrate competency in inter-personal and intrapersonal skills.
D. compile and organize business data using business software.

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.

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.

To earn a certificate of achievement, 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 Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-100</td>
<td>Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>BUS-101</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>BUS-102</td>
<td>Applied Business Math Calculations</td>
<td>1</td>
</tr>
<tr>
<td>BUS-103</td>
<td>Applied Business Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>BUS-109</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>BUS-295</td>
<td>Occupational Work Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>BUS-296</td>
<td>Internship in Occupational Work Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>CIS-116</td>
<td>Microsoft Word – Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-118</td>
<td>Microsoft Excel – Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-119</td>
<td>Microsoft PowerPoint – Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>COMSC-101</td>
<td>Computer Literacy</td>
<td>4</td>
</tr>
<tr>
<td>BUSMG-160</td>
<td>Managing Conflict and Workplace Relationships</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-161</td>
<td>Leading Groups and Teams</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-165</td>
<td>Managing Stress</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-166</td>
<td>Time Management</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-167</td>
<td>Writing and Presenting a Business Plan</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-168</td>
<td>Customer Service</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-170</td>
<td>Effective Oral Presentations</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-173</td>
<td>Intercultural Communication in the Workplace</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-174</td>
<td>Records Management</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-175</td>
<td>Business Ethics</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**total minimum required units**: 29

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.
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

plus at least 6 units from:
RE-161 Legal Aspects of Real Estate .................. 3
RE-162 Real Estate Appraisal I .......................... 3
RE-164 Real Estate Finance ............................ 3
RE-165 Real Estate Economics ......................... 3
RE-166 Escrow Procedures .............................. 3
RE-167 Real Estate Property Management ............ 3

total minimum required units 24

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.

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.

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 client.

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

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

required courses:  
BUS-109 Introduction to Business .................. 3
BUS-161 Personal Money Management ............... 3
BUS-250 Business Communications I ................ 3
BUS-281 Investments .................................. 3
BUS-294 Business Law .................................. 3
BUSAC-285 Federal Income Taxes - Individuals .... 3
BUSMG-120 Introduction to Management Studies .. 3

plus at least 3 units from:
BUSAC-181 Applied Accounting ....................... 3
BUSAC-186 Financial Accounting ..................... 4

plus at least 3 units from:
BUSMG-191 Small Business Management ............. 3
BUSMG-192 Entrepreneurship and Venture  
Management ............................................. 3

plus at least 6 units from:
BUS-145 Business Spreadsheet Applications ....... 2
BUS-209 International Business ....................... 3
BUSAC-185 QuickBooks Accounting for Business I 1.5
BUSMG-121 Practices and Concepts of Supervision .. 3
BUSMG-132 Human Resource Management .......... 3
BUSMK-256 Marketing .................................. 3


total minimum required units 24
Business

Certificate of accomplishment - 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, 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.

The 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 each course used to meet a certificate requirement with a "C" grade or higher.

required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-100</td>
<td>Keyboarding</td>
</tr>
<tr>
<td>BUS-101</td>
<td>Business English</td>
</tr>
<tr>
<td>BUS-102</td>
<td>Applied Business Math Calculations</td>
</tr>
<tr>
<td>BUS-295</td>
<td>Occupational Work Experience Education in BUS</td>
</tr>
<tr>
<td>BUS-296</td>
<td>Internship in Occupational Work Experience Education in BUS</td>
</tr>
</tbody>
</table>

plus at least 2 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-115 Microsoft Word – Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-116 Microsoft Excel – Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-119 Microsoft Outlook – Comprehensive</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>BUSMG-160 Managing Conflict and Workplace Relationships</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-161 Leading Groups and Teams</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-165 Managing Stress</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-166 Time Management</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-167 Writing and Presenting a Business Plan</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-168 Customer Service</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-170 Effective Oral Presentations</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-173 Intercultural Communication in the Workplace</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-174 Records Management</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-175 Business Ethics</td>
<td>0.5</td>
</tr>
</tbody>
</table>

total minimum required units 14
BUS-100  Keyboarding
1 unit  SC
• 9 hours lecture/27 hours laboratory per term
• Note: Credit by examination option available.
This course presents the theory and practical applications of touch-typing. Emphasis will also be placed on typing speed and accuracy as well as postural principles to minimize fatigue and prevent injury. CSU

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-102  Applied Business Math Calculations
1 unit  SC
• 18 hours lecture per term
• Note: Credit by examination option available.
This course presents basic mathematical problem solving techniques applied to business contexts. Topics include operations with whole numbers, integers, decimals, and fractions as well as basic linear equations using arithmetic operators. 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-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. C-ID BUS 110, CSU, UC

BUS-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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree. 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.
• Formerly BUSIM-145
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

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

This course presents an overview of the theories and practices of modern international business. The key functional areas related to global business, 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 will be examined. The course culminates with students developing a market entry strategy for a local business to a foreign market. CSU

BUS-210  Introduction to e-Business
3 units  SC
  • 54 hours lecture per term
  • Note: Eligibility for ENGL-122 or equivalent

This course provides an introduction to the modern world of e-business and e-commerce. Topics include e-business models and strategy, e-commerce platforms, multi-channel marketing and advertising, electronic payments and digital currency, security risks as well as important ethical and legal issues in e-business and e-commerce. E-business and e-commerce trends will also be discussed, including peer-to-peer commerce and on-demand service models, business-to-business models, e-marketplaces, global e-business infrastructure and supply chain management, as well as the roles of social networks and mobile platforms. 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 inference-making processes, using sample data to graphically and numerically describe samples, including identifying varying levels of measurement possible in variables and their implications for statistical computation and inference-making. 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, t-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. C-ID MATH 110, CSU, UC (credit limits may apply to UC - see counselor)

BUS-250  Business Communications I
3 units  SC
  • 54 hours lecture per term
  • Recommended: BUS-101 and eligibility for ENGL-122 or equivalents
  • Note: Credit by examination option available.

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 a variety of business documents, including letters, memos, short reports, and proposals; to use 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-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 presents an introduction to the areas of business law concerned with wills, trusts, and estate planning. Living trusts, probate avoidance, joint tenancy, estate taxes, asset control, wills, and durable power of attorney will be examined. Analysis of 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 will be addressed. Advanced topics such as planning for incapacity and the use of various types of irrevocable trusts will also be covered. CSU

BUS-294  Business Law
3 units  SC
• 54 hours lecture per term
• Recommended: BUS-109 and eligibility for ENGL-122 or equivalents
This course presents a general overview of the specific areas of the legal environment that affect individuals and businesses with an emphasis on contracts, including the Uniform Commercial Code, Article 2. Legal history, civil procedure, constitutional law, torts, intellectual property, cyber law, criminal law, international law, labor and employment law, and agency will also be covered. C-ID BUS 125, CSU, UC

BUS-295  Occupational Work Experience Education in BUS
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in BUS-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
BUS-295 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. Internships may be paid, non-paid, or some partial compensation provided. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

BUS-296  Internship in Occupational Work Experience Education in BUS
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in the BUS-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
BUS-296 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

BUS-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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**

Despina Prapavessi, Dean  
Business Division  
Math Building, Room 267

**Possible career opportunities**

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

**Program-level student learning outcomes**

Program learning outcomes are subject to change. The most  
current list of program learning outcomes for each program  
is published on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

**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 appro-  
priate technology.

B. analyze existing documents by verifying the accuracy of  
information for a company and performing necessary  
reconciliation.

C. evaluate financial data in a business environment and ap- 
ply ethical business judgment for decision making.

This technical curriculum is designed to provide an oppor-  
tunity for accounting students to achieve an associate in sci-  
ence 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](http://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 require-  
ments 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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-145</td>
<td>Business Spreadsheet Applications</td>
<td>2</td>
</tr>
<tr>
<td>BUSAC-186</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUSAC-187</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUS-240</td>
<td>Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250</td>
<td>Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-295</td>
<td>Occupational Work Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>BUSAC-182</td>
<td>Computer Income Tax Return Preparation - Individuals</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSAC-185</td>
<td>QuickBooks Accounting for Business I</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSAC-188</td>
<td>QuickBooks Accounting for Business II</td>
<td>1.5</td>
</tr>
<tr>
<td>BUSAC-190</td>
<td>Payroll Accounting</td>
<td>1.5</td>
</tr>
<tr>
<td>plus at least 12 units from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUS-284</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-282</td>
<td>Intermediate Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-283</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-284</td>
<td>Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-285</td>
<td>Federal Income Taxes – Individuals</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-286</td>
<td>Governmental and Not-For-Profit Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-290</td>
<td>Corporate Financial Reporting and Financial Statement Analysis</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUS-209</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-240</td>
<td>Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BUS-250</td>
<td>Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-191</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-192</td>
<td>Entrepreneurship and Venture Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 28

**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 appro-  
priate 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 entities.
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.

**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.

The certificate program in bookkeeping is designed to provide basic business knowledge for obtaining entry-level employment in jobs requiring bookkeeping and accounting skills. Course content emphasizes small business applications for both a service and merchandising business and includes a solid foundation in bookkeeping principles and the classifying and double-entry recording of financial transactions and preparation of the income statement and balance sheet.

Students are required to obtain a “C” grade or higher in all required courses. 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.

**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.
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:           units
BUS-145  Business Spreadsheet Applications .................. 2
BUSAC-186  Financial Accounting .................................. 4
BUSAC-187  Managerial Accounting ................................. 4

plus at least 3 units from:
BUS-240  Business Statistics ........................................ 3
BUS-250  Business Communications I .............................. 3
BUS-295  Occupational Work Experience
          Education in BUS ........................................... 1-4
BUSAC-182  Computer Income Tax Preparation -
            Individuals ................................................ 1.5
BUSAC-185  QuickBooks Accounting for Business I ............ 1.5
BUSAC-188  QuickBooks Accounting for Business II .......... 1.5
BUSAC-190  Payroll Accounting ....................................... 1.5

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-186 “business major” transfer course. Credit by examination option available. The laboratory (lab) hours for this course may be offered as face to face lab or online lab. See schedule of classes for specific requirements.

A beginning accounting course that involves a practical approach emphasizing small business applications. This course covers the accounting cycle for a sole proprietorship. Includes journals and ledgers; financial statements; adjusting, correcting, and closing entries; bank reconciliation; payroll; 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, Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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
1.5 units  SC
- 18 hours lecture/27 hours laboratory per term
- Recommended: BUSAC-185 and eligibility for ENGL-122 or equivalents
- Note: Course may be repeated when software program changes. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply toward the 60 units required for the degree. 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 employer 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 covers payroll accounting functions. Topics include how to calculate wages, determine required employer and employee tax deductions, process payroll, and file required reports. Employment legislation and tax laws that affect payroll will also be covered. CSU

BUSAC-282 Intermediate Accounting I
3 units  SC
- 54 hours lecture per term
- Prerequisite: BUSAC-186 or equivalent
- Recommended: BUSAC-187 or equivalent

This upper-level financial accounting course reviews and builds on the foundation material presented in Financial Accounting. Financial accounting reporting issues in association with financial statement preparation and interpretation will also be covered. 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-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 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 per term
- Recommended: BUSAC-186 and eligibility for ENGL-122 or equivalents

This course explores the federal tax system. The Internal Revenue Code, regulations, rulings and court cases will be analyzed and applied. 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 included. CSU
BUSAC-286 Governmental and Not-For-Profit Accounting
3 units  SC
• 54 hours lecture per term
• Prerequisite: BUSAC-186 or equivalent
• Recommended: BUSAC-187 or equivalent
This course presents a study of accounting practices used in governmental units and not-for-profit organizations. Basic characteristics of fund accounting, functions of governmental accounting, budgetary process, financial reporting objectives and issues of reporting and disclosure will also be covered. 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 MANAGEMENT – BUSMG

BUSMG-120 Introduction to Management Studies
3 units  SC
• 54 hours lecture per term
• Recommended: BUS-109 or equivalent; eligibility for ENGL-122 or equivalent
This course is designed as an introduction to the skills and applications used in modern management practice. Topics may include foundation of management principles, planning, organizing, staffing, directing, controlling, legal, ethical, and social responsibilities of management. CSU

BUSMG-121 Practices and Concepts of Supervision
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course provides a real world approach to management practices and concepts. Each of the management functions - planning, organizing, influencing, and controlling - will be explained from the standpoint of how each function interrelates in the management process. Student participation includes a variety of management exercises and case study discussions. CSU

BUSMG-131 Managing Diversity in the Workplace
3 units  LR
• 54 hours lecture per term
• Recommended: BUS-109 and eligibility for ENGL-122 or equivalents
This course explores issues relating to the management of workplace diversity - individual, group, and cultural differences. How to recognize, understand, and adapt to these differences in order to create cohesive and productive work units will also be covered in this course. 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-160 Managing Conflict and Workplace Relationships  
.5 unit  SC  
• 9 hours lecture per term  
This course will explore methods to resolve conflict as well as strategies to manage conflict that cannot be resolved. Effective communication techniques will be emphasized. CSU

BUSMG-161 Leading Groups and Teams  
.5 unit  SC  
• 9 hours lecture per term  
This course will review research on small group and team interactions, and offer practical tools to better manage intrateam relationships, team projects and team effectiveness. Emphasis is placed on helping teams navigate organizational hazards, so they can focus on productive outcomes. CSU

BUSMG-165 Managing Stress  
.5 unit  SC  
• 9 hours lecture per term  
This course will examine the nature of stress and offer students strategies to recognize, adapt, and buffer stressors. CSU

BUSMG-166 Time Management  
.5 unit  SC  
• 9 hours lecture per term  
This course will address setting goals and priorities, leveraging resources, monitoring progress, and taking responsibility for outcome in order to maximize the effective use of time. CSU

BUSMG-167 Writing and Presenting a Business Plan  
.5 unit  SC  
• 9 hours lecture per term  
In this course students will explore their proposed business, core competencies, competitors, and customers through designing a business plan. Survival tactics will be presented to increase the chances of success in fluctuating business environments. CSU

BUSMG-168 Customer Service  
.5 unit  SC  
• 9 hours lecture per term  
This course presents the competencies needed to develop a joint purpose, show compassion, and be generous and trustworthy with customers, co-workers, and external stakeholders. The relationship of customer service skills to career success will be examined. CSU

BUSMG-170 Effective Oral Presentations  
.5 unit  SC  
• 9 hours lecture per term  
This course will examine how to analyze an audience, identify intent, and make the most of messages. Students will craft content, design visual aids, and refine nonverbal delivery. CSU

BUSMG-171 Listening and Responding in the Workplace  
.5 unit  SC  
• 9 hours lecture per term  
This course provides students with an understanding of how listening skills are part of effective business communication. Active listening techniques will be studied as a strategy to better discern communicated messages. CSU

BUSMG-172 Persuasion in Work Settings  
.5 unit  SC  
• 9 hours lecture per term  
In this course effective persuasive techniques will be presented, including how to make a reasonable request, tie facts to benefits, overcome resistance, and accept compromise. CSU

BUSMG-173 Intercultural Communication in the Workplace  
.5 unit  SC  
• 9 hours lecture per term  
This course will present individual and cultural factors that affect communication as well as the mores that shape the values, experiences and behavior of others in the workplace. Techniques to prepare students to effectively interact with someone who approaches life from a different world view will be discussed. CSU
BUSMG-174 Business Ethics  
.5 units SC  
• 9 hours lecture per term  
The course introduces the theory and practice of ethical decision making in the workplace. Topics include ethical theories, ethical dilemma resolution, social responsibility, ethics of whistle-blowing, and ethics and technology. CSU

BUSMG-175 Records Management  
.5 units SC  
• 9 hours lecture per term  
This course introduces the practical applications of alphabetic, numeric, geographic, and subject filing systems and procedures. Topics include paper and electronic records management, safety, security, and disaster recovery. CSU

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

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

BUSMG-226 Group Behavior and Leadership  
3 units LR  
• 54 hours lecture per term  
• Recommended: BUS-109 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

BUSINESS MARKETING - BUSMK

Despina Prapavessi, Dean  
Business Division  
Math Building, Room 267

Certificate of achievement  
Business Marketing - see BUS

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.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

**BUSINESS REAL ESTATE – RE**

Despina Prapavessi, Dean
Business Division
Math Building, Room 267

**Certificate of achievement**
Real estate - See BUS

**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
- Note: Applies toward CA Board of Real Estate continuing education and licensing.

This course provides an introduction to the real estate profession. 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 CA Board of Real Estate continuing education and licensing.

This course will provide an overview of 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

This is a basic course in real estate valuation with emphasis on residential property. Topics will include definitions and concepts, principles of valuation, and the appraisal process. CSU
RE-163  
**Real Estate Practice**  
3 units  
- 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

RE-164  
**Real Estate Finance**  
3 units  
- 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 include construction, investment, and creative financing. CSU

RE-165  
**Real Estate Economics**  
3 units  
- 54 hours lecture per term  
- Recommended: RE-160 or valid CA real estate license or equivalent  
- Note: Applies toward CA Board of Real Estate continuing education and licensing

This course is an overview of economic concepts and theories as they apply to the functioning of real estate markets. Special attention to the role of government and other economic sectors in the observed value and returns on residential and commercial real estate will be observed. CSU

RE-166  
**Escrow Procedures**  
3 units  
- 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 Board of Real Estate continuing education and licensing

This course is an overview of the procedures required to complete a valid escrow in order to close a real estate transaction. Technical skills, legal aspects, ethical restrictions, interfacing with financing and real estate agents will be emphasized. Students are introduced to the procedures and practices from the perspective of both the escrow/title insurance company and the real estate licensee. CSU

RE-167  
**Real Estate Property Management**  
3 units  
- 54 hours lecture per term  
- Recommended: RE-160 and eligibility for ENGL-122 or equivalents

This course focuses primarily on managing residential and apartment properties. It also contains information on commercial and business properties. Relevant topics include: acquisition, financing, financial reporting, valuation, maintenance, taxes, insurance, furnishings, and tenant relations. CSU

RE-201  
**Advanced Real Estate Studies**  
.3-4 units  
- 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 DEVELOPMENT– CARER

See also Counseling - COUNS

Beth Hauscarriague, Dean  
Counseling Division  
Student Services Center, Room 203

### Possible career opportunities

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

**CARER-100 College and Career Readiness I**  
1.5 units  
- 27 hours lecture per term  
- Note: Credit by examination option available

This course introduces career exploration and is designed to assist students in making career and post-secondary decisions. Topics will include self-exploration, career and life planning, job search skills, and decision-making strategies. CSU

**CARER-101 College and Career Readiness II**  
1.5 units  
- 27 hours lecture per term  
- Note: Credit by examination option available

This course introduces college readiness and success skills. In addition, students will explore post-secondary education and career options, budget management, and job search basics. CSU
CARER-110 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, UC (credit limits may apply to UC - see counselor)

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
In this course, students will utilize self-assessment inventories to identify individual interests, values, skills and personality types as they relate to college/career and major options. Career development software and related technologies to develop skills to enhance the career exploration process will be utilized. 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
- 54 hours lecture/54 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. C-ID CHEM 100, CSU, UC (credit limits may apply to UC - see counselor)

CHEM-107 Integrated Inorganic, Organic, and Biological Chemistry
5 units SC
- 72 hours lecture/54 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 course does not fulfill the prerequisite to CHEM-120.
This course is an intensive survey of the fundamentals of chemistry, which explores and applies the topics of inorganic and organic chemistry to biochemistry. This course satisfies the requirements of nursing and other health-care programs that require one term of chemistry. CSU
Chemistry

CHEM-108  Introductory Chemistry  
4 units  SC  
- 54 hours lecture/54 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. 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  
- 54 hours lecture/54 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  
- 54 hours lecture/108 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 120SP or equivalent  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course presents an introduction to the fundamentals of chemistry. Atomic theory, chemical reactions, bonding, structure, stoichiometry, gases, solutions, redox, thermodynamics, equilibrium, and acid-base chemistry will be covered. C-ID CHEM 110, CHEM-120+121=C-ID CHEM 120S, CSU, UC

CHEM-121  General College Chemistry II  
5 units  LR  
- 54 hours lecture/108 hours laboratory per term  
- Prerequisite: CHEM-120 or equivalent  
This course is a continuation of CHEM-120. Buffers, titration curves, solubility products, thermodynamics, electrochemistry, kinetics, molecular orbital theory, coordination complexes, nuclear chemistry, organic chemistry, spectroscopy, quantitative experiments, and qualitative analysis will be addressed. CHEM-120+121=C-ID CHEM 120S, CSU, UC

CHEM-226  Organic Chemistry I  
5 units  LR  
- 54 hours lecture/108 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, conformations, reaction mechanisms, and the nomenclature, physical properties, and reactions of various classes of organic compounds (alkanes, alkenes, alkynes, aldehydes, ketones, carboxylic acids and their derivatives, and amines). The nature and reactions of multifunctional compounds, and the structure and reactions of biochemical molecules will be also discussed. Laboratory work includes hands-on spectroscopic techniques (NMR, IR), qualitative organic analysis, more advanced projects involving synthesis, and a literature research project using university-level chemical literature resources. CHEM-226 + CHEM-227 = C-ID CHEM 160S, CSU, UC

CHEM-227  Organic Chemistry II  
5 units  LR  
- 54 hours lecture/108 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 will be covered. C-ID CHEM 150, CHEM-226+227=C-ID CHEM 160S, CSU, UC

CHEM-298  Independent Study  
.5-3 units  SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office is required  
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

Toni Fannin, Interim Dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

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

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in arts degree
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.

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.

major requirements:  units

CHIN-120 First Term Chinese........................................... 5
CHIN-121 Second Term Chinese....................................... 5
CHIN-220 Third Term Chinese......................................... 5
CHIN-221 Fourth Term Chinese........................................ 5

total minimum required units 20

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.

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. Students may not take a credit/no credit option for required courses and each course used to meet a certificate requirement must be completed with a “C” grade or higher.

complete at least 15 units from:  units

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  SC
   • 90 hours lecture per term
   • Note: This course is equivalent to two years of high school study.

This beginning Chinese course emphasizes the development of language skills for listening, speaking, reading, and writing. Pronunciation drills, sentence pattern analysis, and character reading and writing will be introduced. Aspects of Chinese culture will be discussed. CSU, UC

CHIN-121  Second Term Mandarin Chinese
5 units  SC
   • 90 hours lecture per term
   • Prerequisite: CHIN-120 or two years of high school study or equivalent
   • Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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 per term
   • Prerequisite: CHIN-121 or three years of high school study or equivalent
   • Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

Students will learn to 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 of the Chinese written systems to develop their knowledge and ability. CSU, UC

CHIN-221  Fourth Term Mandarin Chinese
5 units  SC
   • 90 hours lecture per term
   • Prerequisite: CHIN-220 or four years of high school study or equivalent
   • Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

Students will be able 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 is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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 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

COMMUNICATION STUDIES – COMM

Toni Fannin, Interim Dean
Applied and Fine Arts Division
Business and Foreign Language, Room 204

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.
### 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.

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. 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/arbiter.

The associate in arts in communication studies 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 a 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.

### Certificate of achievement in 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.

To earn a certificate of achievement in communication studies, students must complete three core courses supplemented by seven 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.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM-120 Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>COMM-121 Persuasion and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>COMM-128 Interpersonal Communication</td>
<td>3</td>
</tr>
</tbody>
</table>
Communication studies

plus at least 3 units from:
COMM-123 Argumentation and Debate ........................................ 3
COMM-124 Voice and Diction .................................................... 3
COMM-125 Intercultural Communication ................................. 3
COMM-130 Small Group Communication ............................... 3
COMM-148 Performance of Literature ...................................... 3
COMM-155 Topics in Communication Studies ......................... 0.3-4
COMM-163 Forensics - Speech and Debate ......................... 1.5-4
COMM-180 Introduction to Communication Theory ................. 3
COMM-298 Independent Study .............................................. 0.5-3

total minimum required units 12

COMM-120 Public Speaking
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
In this course, students will 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 covered 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
This course presents an introduction to the principles of reasoning and their application to the analysis and evaluation of political and marketplace communication. The integration of critical thinking principles with techniques of effective written and spoken argument will be emphasized. Topics will include 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. C-ID COMM 190, 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
This course presents 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. Students will participate in graded debates in class. 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
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-125 Intercultural Communication
3 units SC
• 54 hours lecture per term
This course is an introduction to intercultural communication in domestic and/or global contexts. The course studies the influence of cultures, languages, and social patterns on how members of groups relate among themselves and with members of different ethnic and cultural groups. It teaches theory and knowledge of effective communication within and between cultures. Appreciation and comparison of communication of diverse groups within the larger context of culture in the United States is an important part of the course. C-ID COMM 150, CSU, UC

COMM-128 Interpersonal Communication
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
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. Psychological, social, cultural, and linguistic factors which affect human interaction are emphasized. Attention will also 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
• Recommended: Eligibility for ENGL-122 or equivalent
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
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
In this class, students will learn current concepts and problems related to the area of communication studies being focused on. 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
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. C-ID COMM 160B, CSU, UC

COMM-180  Introduction to Communication Theory
3 units SC
• 54 hours lecture per term
This course is a survey of the discipline of communication studies with emphasis on multiple epistemological, theoretical, and methodological issues relevant to the systematic inquiry and pursuit of knowledge about human communication. Students will explore the basic history, assumptions, principles, processes, variables, methods, and specializations of human communication as an academic field of study. C-ID COMM 180, CSU, UC

COMM-298  Independent Study
.5-3 units SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.
Students will conduct additional research, a special project, or learning activities in a specific discipline/subject area. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. (This course is not intended to replace an existing course.) 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.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

COMPUTER INFORMATION SYSTEMS – CIS

Mike Holtzclaw, Senior Dean
San Ramon Campus Division
San Ramon Campus

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

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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 web sites.
F. integrate elements such as graphics, animation and streaming media on web sites.
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.

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.

Students are limited to one associate in science degree regardless of the number of specializations completed. Multiple certificates may be awarded.

### 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.

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

plus at least 2 units from:

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

### 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.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-107 Introduction to Web Databases</td>
<td>2</td>
</tr>
<tr>
<td>CIS-115 Microsoft Word - Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-116 Microsoft Excel - Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-117 Microsoft Access - Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-119 Microsoft Outlook - Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA)</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total minimum required units:** 12

---

### Core courses units subtotal: 12

Choose one of the following four technical specialization areas:

#### database management - required courses:

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-107 Introduction to Web Databases</td>
<td>2</td>
</tr>
<tr>
<td>CIS-117 Microsoft Access - Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-160 Introduction to MySQL</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total minimum required units:** 12

#### project management - required courses:

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-180 Introduction to Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CIS-181 Project Management Fundamentals/PMP/PMP Preparatory</td>
<td>3</td>
</tr>
</tbody>
</table>

#### project management - recommended electives:

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-182 Project Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>CIS-185 Project Management Tools</td>
<td>2</td>
</tr>
</tbody>
</table>

#### web graphics - required courses:

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-130 Adobe Photoshop Elements</td>
<td>2</td>
</tr>
<tr>
<td>CIS-132 Adobe Premiere Elements - Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-133 Developing Video Content for the Web</td>
<td>2</td>
</tr>
</tbody>
</table>

#### web technology - required courses:

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-105 Introduction to Web Design</td>
<td>2</td>
</tr>
<tr>
<td>CIS-106 Adobe Dreamweaver - Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-107 Introduction to Web Databases</td>
<td>2</td>
</tr>
</tbody>
</table>

#### web technology - recommended electives:

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-108 Introduction to WordPress</td>
<td>2</td>
</tr>
<tr>
<td>CIS-117 Microsoft Access - Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>CIS-120 iPhone and iPad App Development for Beginners</td>
<td>2</td>
</tr>
<tr>
<td>CIS-160 Introduction to MySQL</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total minimum required units:** 18
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.

required courses:  
CIS-115 Microsoft Word - Comprehensive .......................... 2
CIS-116 Microsoft Excel - Comprehensive .......................... 2
CIS-118 Microsoft PowerPoint - Comprehensive ............... 2
CIS-180 Introduction to Project Management ...................... 3
CIS-181 Project Management Fundamentals/PMI PMP Preparation .................. 3

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

plus at least 4 units from:
CIS-117 Microsoft Access - Comprehensive .................... 2
CIS-119 Microsoft Outlook - Comprehensive ................... 2
COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA) .................. 2

required courses:  
CIS-118 Microsoft PowerPoint - Comprehensive ............... 2
CIS-119 Microsoft Outlook - Comprehensive ................... 2
COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA) .................. 2

project management - recommended electives:
CIS-182 Project Risk Management .................................. 3
CIS-185 Project Management Tools .................................. 2

Certificate of achievement
Computer information systems - web technology

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

required courses:  
CIS-105 Introduction to Web Design ................................ 2
CIS-106 Adobe Dreamweaver - Comprehensive ................... 2
CIS-107 Introduction to Web Databases ............................. 2
CIS-115 Microsoft Word - Comprehensive ....................... 2
CIS-116 Microsoft Excel - Comprehensive ......................... 2
CIS-118 Microsoft PowerPoint - Comprehensive ............... 2

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

plus at least 4 units from:
CIS-117 Microsoft Access - Comprehensive .................... 2
CIS-119 Microsoft Outlook - Comprehensive ................... 2
COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA) .................. 2

required courses:  
CIS-108 Introduction to WordPress ................................. 2
CIS-117 Microsoft Access - Comprehensive .................... 2
CIS-120 iPhone and iPad App Development for Beginners .... 2
CIS-160 Introduction to MySQL ...................................... 2

web technology - recommended electives:
CIS-108 Introduction to WordPress ................................. 2
CIS-117 Microsoft Access - Comprehensive .................... 2
CIS-120 iPhone and iPad App Development for Beginners .... 2
CIS-160 Introduction to MySQL ...................................... 2

Certificate of accomplishment
Computer information systems - database management

Students completing the program will be able to...
A. demonstrate basic graphical user interface operations in a computer environment.
B. apply database syntax, properties, operators, and functions.

required courses:  
CIS-107 Introduction to Web Databases ............................. 2
CIS-117 Microsoft Access - Comprehensive .................... 2
CIS-160 Introduction to MySQL ...................................... 2

total minimum required units 6
Computer information systems

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.

required courses: units
CIS-180 Introduction to Project Management.................. 3
CIS-181 Project Management Fundamentals/PMI PMP Preparation.......................... 3
total minimum required units 6

project management - recommended electives:
CIS-182 Project Risk Management.................................. 3
CIS-185 Project Management Tools................................ 2

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.

required courses: units
CIS-130 Adobe Photoshop Elements.............................. 2
CIS-132 Adobe Premiere Elements - Comprehensive............................... 2
CIS-133 Developing Video Content for the Web............. 2
total minimum required units 6

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.

required courses: Units
CIS-105 Introduction to Web Design.............................. 2
CIS-106 Adobe Dreamweaver - Comprehensive............. 2
CIS-107 Introduction to Web Databases......................... 2
total minimum required units 6

web technology - recommended electives:
CIS-108 Introduction to WordPress............................ 2
CIS-117 Microsoft Access - Comprehensive.................. 2
CIS-120 iPhone and iPad App Development for Beginners........................................... 2
CIS-160 Introduction to MySQL............................... 2

CIS-100 Microsoft Windows - Comprehensive
2 units SC
• 36 hours lecture/18 hours laboratory per term
• Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
This course teaches the functions of Microsoft Windows Operating System (OS). It prepares students to use the various local and network functions of the current Windows OS. No previous computer experience is required. CSU

CIS-101 Apple Mac Operating System
2 units SC
• 36 hours lecture/18 hours laboratory per term
• Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
This course teaches the functions of the Apple Mac Operating System, including the graphical user interface, file and folder management, system preferences, and networking. No previous computer experience is required. CSU

CIS-105 Introduction to Web Design
2 units SC
• 36 hours lecture/18 hours laboratory per term
• Recommended: CIS-100 or CIS-101 or equivalent
• Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
This course introduces students to the web development cycle. This process is used to create, organize, and maintain web sites that are easy to use and understand. Emphasis is placed on navigation, organization, presentation, and maintenance of websites. No previous web design experience is required. CSU

CIS-106 Adobe Dreamweaver - Comprehensive
2 units SC
• 36 hours lecture/18 hours laboratory per term
• Recommended: CIS-100 or CIS-101 or equivalent
• Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
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  Introduction to Web Databases
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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course presents the fundamentals of database-driven webpage development. Topics will include basic database configuration, the use of server-side tools to connect to a database, and the display and manipulation of database content over the web. CSU

CIS-108  Introduction to WordPress
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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course introduces students to WordPress. This easy-to-use software is used to create, organize, and maintain websites. Emphasis is placed on installation, configuration, navigation, organization, presentation, and maintenance of websites. No previous web design experience is required. CSU

CIS-115  Microsoft Word - Comprehensive
2 units  SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course is for students who want to learn the comprehensive functions of Microsoft Word, a powerful word processing program which is part of the Microsoft Office Suite. This course prepares students for Microsoft certification testing but is also useful for students who want a deeper understanding of the program. No previous experience with this software is required. CSU

CIS-116  Microsoft Excel - Comprehensive
2 units  SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course is for students who want to learn the comprehensive functions of Microsoft Excel, a powerful spreadsheet program which is part of the Microsoft Office Suite. This course prepares students for Microsoft certification testing but is also useful for students who want a deeper understanding of the program. No previous experience with this software is required. CSU

CIS-117  Microsoft Access - Comprehensive
2 units  SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course is for students who want to learn the comprehensive functions of Microsoft Access, a powerful database program which is part of the Microsoft Office Suite. This course prepares students for Microsoft certification testing but is also useful for students who want a deeper understanding of the program. No previous experience with this software is required. CSU

CIS-118  Microsoft PowerPoint - Comprehensive
2 units  SC
- 36 hours lecture/18 hours laboratory per term
- Recommended: CIS-100 or CIS-101 or equivalent
- Note: Credit by examination option available. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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-120  iPhone and iPad App Development for Beginners
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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course introduces students to application (app) development for iPhone and iPad devices. Essentials of iPhone and iPad app development including tools, frameworks, and concepts are covered. Hands-on exercises will be used to reinforce theory. No previous app development experience is required. Students will learn the essentials of iPhone and iPad app development: the tools, frameworks, and concepts. Hands-on exercises will be part of this course. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course helps students to develop proficiency in Adobe Photoshop Elements; it covers acquiring, organizing, fixing, enhancing and sharing images. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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-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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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-170  Networking for Non-IT Professionals
2 units  SC
- 36 hours lecture/18 hours laboratory per term
- Note: Credit by examination option available. No previous networking experience is required. Students interested in professional training in computer networking should see the Computer Network Technology (CNT) programs in this catalog.

This course presents the basics of networking and introduces the core networking topologies, implementation options and commonly used network devices, such as Network Interface Cards (NICs), hubs, switches, and routers. Emphasis is placed on networking theory and implementation specifically designed for small office and home networking environments. 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-182  Project Risk Management
3 units  SC
- 54 hours lecture per term
- Recommended: CIS-180 or equivalent

This course presents an introduction to the risks associated with the management of projects. The skills needed to manage risks associated with projects, deliver projects based on a solid plan and mitigate any risk factors to those projects, will be examined. CSU

CIS-185  Project Management Tools
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.

This course introduces students to software tools used in project management such as, MS Visio and MS Project. Students will create, save and publish, flow charts, diagrams and task lists. In addition, students will set up and assign project resources, track progress on tasks, organize and format project details, and publish project information. CSU

Computer Network Technology – CNT
Despina Prapavessi, Dean
Math and Computer Sciences Division
Math Building, Room 267

Possible career opportunities
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.

The job titles of people employed in computer networking include: systems administrator, network administrator, network engineer, database administrator, LAN specialist and network designer.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree
Information and communication technology
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.
This two-year associate in science degree program is intended to prepare the student for jobs in business and government as introductory positions such as network control specialist, computer system specialists, or specialist network control, entry-level help desk analyst, computer technician, to name a few. A graduate of this program will be able to sit for the Cisco Certified Network Associate (CCNA) exam, the CompTia A+ exam, the CompTia Net+ exam and other industry recognized exams depending on course selection. A graduate will have the required skills to install and configure local area networks that carry data, voice, and video communications, install, operate and maintain network services, routers, switches, and other network devices, resolve network communication problems, support and troubleshoot Personal Computers (PCs), work with a team and demonstrate desirable customer service and communication skills. NOTE: exact skills will depend on course selection.

DVC information and communication technology students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU 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 information and communication technology, students must complete each course used to meet a major requirement with a "C" grade or higher and complete general education requirements as listed in the catalog. Degree requirements can be completed by attending classes in the day, the evening, or both. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

major requirements:

- CNT-103 Voice, Video and Network Cabling..............2
- CNT-104 IT Essentials (A+)..................................4
- CNT-106 Introduction to Networks.........................3
- COMSC-101 Computer Literacy................................4
- COMSC-110 Introduction to Programming....................4

plus at least 6 units from:

- BUS-250 Business Communications I .....................3
- CNT-114 Microsoft Windows Operating System
  Essentials/Administration..................................3
- CNT-120 Routing and Switching Essentials...............3
- CNT-140 Introduction to Information Systems
  Security......................................................3
- CNT-148 Introduction to Cybersecurity:
  Ethical Hacking............................................3
- CNT-149 Digital Forensics Fundamentals..................3
- COMSC-121 Database Administration........................4

plus at least 3 units from:

- BUS-240 Business Statistics................................3
- MATH-142 Elementary Statistics with Probability........4
- MATH-181 Finite Mathematics................................3
- MATH-182 Calculus for Management, Life Science and
  Social Science.............................................4
- MATH-192 Analytic Geometry and Calculus I..............5

total minimum required units 26

Associate in science degree
Server and 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.

The associate in science degree in server and system administration prepares students to enter the workforce as a server and/or system administrator.

Server and system administrators are responsible to manage an organization's servers and desktop and mobile equipment. They ensure that email and data storage networks work properly. They also make sure that employees' workstations are working efficiently and stay connected to the central computer network. Some administrators manage telecommunications networks. In some cases, administrators help network architects design and analyze network models. They also participate in decisions about buying future hardware or software to upgrade their organization's network. Some administrators provide technical support to computer users, and they also may supervise computer support technicians who help solve users' problems.

Graduates are prepared and eligible to sit for various industry certification exams.

DVC server and system administration 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 server and system administration, students must complete each course used to meet a major requirement with a "C" grade or higher and complete all general education requirements listed in the catalog. Degree requirements can be completed by attending classes in the day, the evening, or both. Certain courses may satisfy both a major and a graduation requirement; however the units are only counted once.

major requirements:

- BUS-250 Business Communications I .....................3
- CNT-104 IT Essentials (A+)..................................4
- CNT-106 Introduction to Networks.........................3
- CNT-114 Microsoft Windows Operating System
  Essentials/Administration..................................3
- CNT-117 Implementing Microsoft Windows Directory
  Services......................................................3
- COMSC-101 Computer Literacy................................4
Certificate of achievement
Information and communication technology
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.

This certificate of achievement program is intended to prepare the student for jobs in business and government as introductory positions such as network control specialist, computer system specialists, or specialist network control. To complete the program, students must demonstrate a basic understanding of physical science.

This program prepares students for a variety of entry-level positions in IT network security and cybersecurity. This program builds on the foundation obtained after completing the Network technology fundamentals certificate of achievement. A student completing this program can apply for jobs such as Computer Network Support Specialist, Computer Network Defense Analysis, Computer Network Defense Infrastructure Support, or Network Security Analyst; to name a few. To earn a certificate of achievement, students must complete all courses listed for the program with a "C" grade or higher. Certificate requirements can be completed by attending classes in the day, evening, online, or a combination of those.

Certificate of achievement
Network cybersecurity
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.

This program prepares students for a variety of entry-level positions in IT network security and cybersecurity. This program builds on the foundation obtained after completing the Network technology fundamentals certificate of achievement. A student completing this program can apply for jobs such as Computer Network Support Specialist, Computer Network Defense Analysis, Computer Network Defense Infrastructure Support, network Services, Penetration Tester, Systems Security Analyst; to name a few. To earn a certificate of achievement, students must complete all courses listed for the program with a "C" grade or higher. Certificate requirements can be completed by attending classes in the day, evening, online, or a combination of those.
Certificate of achievement

Network technology fundamentals

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.

This program prepares students for a variety of entry level positions in IT networking and the beginning foundation for a student wanting to pursue a career in cyber defense, network forensics, network security and eventually cyber security. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses: units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT-103</td>
<td>Voice, Video and Network Cabling</td>
<td>2</td>
</tr>
<tr>
<td>CNT-104</td>
<td>IT Essentials (A+)</td>
<td>3</td>
</tr>
<tr>
<td>CNT-106</td>
<td>Introduction to Networks</td>
<td>3</td>
</tr>
<tr>
<td>CNT-114</td>
<td>Microsoft Windows Operating System Essentials/Administration</td>
<td>3</td>
</tr>
<tr>
<td>CNT-120</td>
<td>Routing and Switching Essentials</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-101</td>
<td>Computer Literacy</td>
<td>4</td>
</tr>
</tbody>
</table>

total minimum required units                     19

Certificate of achievement

Server and 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.

The certificate of achievement in server and system administration prepares students to enter the workforce as a server and/or system administrator.

Server and system administrators are responsible to manage an organization's servers and desktop and mobile equipment. They ensure that email and data storage networks work properly. They also make sure that employees’ workstations are working efficiently and stay connected to the central computer network. Some administrators manage telecommunications networks.

In some cases, administrators help network architects design and analyze network models. They also participate in decisions about buying future hardware or software to upgrade their organization's network. Some administrators provide technical support to computer users, and they also may supervise computer support technicians who help solve users' problems.

Certificate completers are prepared and eligible to sit for various industry certification exams.

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

required courses: units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-250</td>
<td>Business Communications I</td>
<td>3</td>
</tr>
<tr>
<td>CNT-104</td>
<td>IT Essentials (A+)</td>
<td>4</td>
</tr>
<tr>
<td>CNT-106</td>
<td>Introduction to Networks</td>
<td>3</td>
</tr>
<tr>
<td>CNT-114</td>
<td>Implementing Microsoft Windows Operating System Essentials/Administration</td>
<td>3</td>
</tr>
<tr>
<td>CNT-117</td>
<td>Implementing Microsoft Windows Directory Services</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-101</td>
<td>Computer Literacy</td>
<td>4</td>
</tr>
<tr>
<td>plus at least 6 units from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNT-116</td>
<td>Implementing a Microsoft Windows</td>
<td>3</td>
</tr>
<tr>
<td>CNT-119</td>
<td>Network Infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>CNT-125</td>
<td>Introduction to Virtualization Technology</td>
<td>3</td>
</tr>
<tr>
<td>CNT-138</td>
<td>Implementing and Managing Microsoft Exchange Server</td>
<td>3</td>
</tr>
<tr>
<td>CNT-148</td>
<td>Introduction to Cybersecurity: Ethical Hacking</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units                     26

Certificate of accomplishment

Microsoft Windows systems 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.

The certificate of accomplishment in Microsoft Windows systems administration prepares students for a career in information technology through an in-depth study of networking with Microsoft products.

To earn a certificate of accomplishment, students must complete each course used to meet a certificate requirements with a “C” grade or higher.
### Computer Network Technology

#### Required Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT-114</td>
<td>Microsoft Windows Operating System Essentials/Administration</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CNT-116</td>
<td>Implementing Windows Server Enterprise</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CNT-117</td>
<td>Implementing Microsoft Windows Directory Services</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CNT-118</td>
<td>Implementing a Microsoft Windows Network Infrastructure</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNT-138</td>
<td>Implementing and Managing Microsoft Exchange Server</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CNT-148</td>
<td>Introduction to Cybersecurity: Ethical Hacking</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Total Minimum Required Units:** 15

---

**CNT-103 Voice, Video and Network Cabling**  
2 units LR  
- 27 hours lecture/27 hours laboratory per term  
This course presents the practical aspects of design, installation, testing, and troubleshooting cable carrying voice, data, video, and wireless signals. Successful completion of this course makes a student eligible to sit for the Fiber Optics Association (FOA) certification examination. CSU

**CNT-104 IT Essentials (A+)**  
4 units SC  
- 54 hours lecture/54 hours laboratory per term  
- Recommended: COMSC-101 or equivalent  
- Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will apply towards a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.  
This course provides an introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level IT professionals. The fundamentals of computer hardware and software as well as advanced concepts such as security, networking, and the responsibilities of an IT professional will be introduced. Preparation for CompTIA’s A+ certification exam is provided. CSU

**CNT-106 Introduction to Networks**  
3 units SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: COMSC-101 or equivalent  
- Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will apply towards a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.  
- Formerly CNT-105  
This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The course uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Students build simple LAN topologies by applying basic principles of cabling; performing basic configurations of network devices, including routers and switches; and implementing IP addressing schemes. This course is preparation for the CompTIA Network+, Cisco Certified Entry-Level Network Technician (CCENT) and Cisco Certified Network Associate (CCNA) certification exams. CSU

**CNT-114 Microsoft Windows Operating System Essentials/Administration**  
3 units SC  
- 45 hours lecture/27 hours laboratory per term  
- Recommended: CNT-106 or equivalent; COMSC-101 or equivalent  
This course is an introduction to Microsoft Windows server operating system and network support. Topics include user accounts, groups and group scopes, permissions, security, Active Directory terminology, optimizing Internet Protocol (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. Only the first course completed will apply towards a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.  
This course introduces students to the installation and configuration of Microsoft Windows Professional on stand-alone computers and on client computers connected to a workgroup or domain. The skills and knowledge necessary to install and configure Windows Server, to create files, print, and Terminal Servers will be covered. Students will also administer an organizational unit within a single domain structure. CSU
Computer network technology

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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

Students will learn to install, configure, and administer Microsoft Windows Active Directory directory services. The course also focuses on implementing Group Policy and understanding the Group Policy tasks required to centrally manage users and computers. Students will use Group Policies to configure and manage the user desktop environment, to configure and manage software, and implement and manage security settings. Students will install and manage Windows Domains and Domain Controllers through Active Directory. CSU

CNT-118  Implementing a Microsoft Windows Network Infrastructure
3 units   LR
- 45 hours lecture/27 hours laboratory per term
- Recommended: CNT-116 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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-120  Routing and Switching Essentials
3 units   LR
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: CNT-106 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
- Formerly CNT-161

This course presents the architecture, components, and operations of routers and switches in a small network. Students will configure routers and switches for basic functionality. Students will configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. This course is preparation for the Cisco Certified Entry-Level Network Technician (CCENT) and Cisco Certified Network Associate (CCNA) certification exams. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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-140  Introduction to Information Systems Security
4 units   SC
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: CNT-106 or equivalent
- Recommended: CNT-120 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course provides an introduction to the fundamental principles and topics of information technology security and risk management at the organizational level. Hardware, software, processes, communications, applications, and policies and procedures with respect to organizational cybersecurity and risk management are addressed. Preparation for the CompTIA Security+ certification exams is provided. CSU
CNT-146  Cisco Certified Network Associate (CCNA) Security
2 units  SC
• 27 hours lecture/27 hours laboratory per term
• Recommended: CNT-140 or equivalent
• Note: Students may petition to repeat this course when software, hardware or certification requirements change. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course presents an in-depth study of network security principles as well as the tools and configurations required to secure a network focused specifically on preparation for the CCNA-Security certification exam. CSU

CNT-148  Introduction to Cybersecurity: Ethical Hacking
3 units  LR
• 36 hours lecture/54 hours laboratory per term
• Recommended: CNT-114 and CNT-146 or equivalents
• Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

Students will analyze computers and networks for vulnerabilities and to preserve information for forensic investigation. Laws pertaining to computer and network forensic investigation will be presented and students will complete 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-149  Digital Forensics Fundamentals
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Prerequisite: CNT-140 or equivalent
• Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course is an introduction to the methods used to properly conduct a computer forensics investigation beginning with a discussion of ethics, while mapping to the objectives of the International Association of Computer Investigative Specialists (IACIS) certification. Topics covered include an overview of computer forensics as a profession; the computer investigation process; understanding operating systems boot processes and disk structures; data acquisition and analysis; technical writing; and a review of familiar computer forensics tools. 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

COMPUTER SCIENCE – COMSC

Despina Prapavessi, Dean
Math and Computer Science Division
Math Building, Room 267

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 that 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-101)
2. Computer science transfer students planning to major in computer science or computer engineering at a four-year school (COMSC-110, 165, 200, 210, 255, 260)
3. Information systems (programming) professionals who are seeking to update their skills, (COMSC-120, 121, 171, 172, 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 require more than two years of college study.

Besides offering courses designed to meet lower-division requirements for a major in computer science, there is also a wide variety of courses covering current popular topics and new software development tools and languages. Such courses provide a path for working professionals to upgrade their skill-set and keep abreast with current technology.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.
Computer science

Associate in science degree
Computer science

Students completing the program will be able to...
A. create computer programming solutions using either the C++ or Java programming language.
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 util 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.

The associate in science in computer science is designed as a two-year curricular pathway that offers students a broad general education while integrating an in-depth study of computer science. Students will be prepared to assume entry-level positions in business and industry. Many of the courses are also applicable toward advanced levels of study. Students who intend to transfer to a four-year program in computer science should consult with a counselor regarding other mathematics and science requirements. To earn a degree, students must complete each course used to meet a major requirement with a “C” grade or higher, and complete all general education requirements as listed in the catalog. Certain courses may satisfy both major and other general education requirements; however the units are only counted once.

major requirements:
COMSC-110 Introduction to Programming...........4
COMSC-165 Advanced Programming with C and C++.......4
COMSC-210 Program Design and Data Structures.........4
COMSC-260 Assembly Language Programming/
Computer Organization..................................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

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.

This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses: 12 units
COMSC-110 Introduction to Programming..................4
COMSC-255 Programming with Java........................4
COMSC-256 Advanced Java Programming..................4

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.

This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses: 12 units
COMSC-110 Introduction to Programming..................4
COMSC-165 Advanced Programming with C and C++.......4
COMSC-260 Assembly Language Programming/
Computer Organization..................................4

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.

This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses: 12 units
COMSC-110 Introduction to Programming..................4
COMSC-165 Advanced Programming with C and C++.......4
COMSC-260 Assembly Language Programming/
Computer Organization..................................4
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.

This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses: units
COMSC-110 Introduction to Programming ................. 4
COMSC-255 Programming with Java ....................... 4
COMSC-257 Mobile and Enterprise Java Programming .... 4

total minimum required units 12

Certificate of achievement

Computer science -
Program design

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 and express in “big oh”.

This program prepares students for a variety of programming positions and is especially suitable for students who have four-year degrees. To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher.

required courses: units
COMSC-110 Introduction to Programming ................. 4
COMSC-165 Advanced Programming with C and C++ .... 4
COMSC-210 Program Design and Data Structures .......... 4

total minimum required units 12

Certificate of achievement

Computer user support

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.

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 and ability to recommend personal productivity solutions to management. Support and installation of microcomputers and software, write instructions for using applications, and provide training on new systems.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a “C” grade or higher. Certificate requirements may only be completed by attending a combination of day and evening classes.

required courses: units
CNT-114 Microsoft Windows Operating System Essentials/Administration .................... 3
COMSC-110 Introduction to Programming .................. 4
COMSC-171 Introduction to UNIX and Linux ............... 2
COMSC-172 UNIX and Linux Administration ............... 2

plus at least 3 units from:
CNT-114 Microsoft Windows Operating System Essentials/Administration .................... 3
COMSC-110 Introduction to Programming .................. 4
COMSC-171 Introduction to UNIX and Linux ............... 2
COMSC-172 UNIX and Linux Administration ............... 2

total minimum required units 12

COMSC-101 Computer Literacy
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Formerly COMSC-100 and COMSC-100L combined

This introductory course in computer literacy covers the basics of computer hardware, software, and networking. Topics covered include local and cloud-based file management, productivity software for word processing, spreadsheets, databases, presentations, and home networks. An introduction to computer programming is presented. C-ID COMP 112, CSU, UC

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-101 or equivalent
- Note: 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. C-ID COMP 112, CSU, UC
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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
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
• Prerequisite: COMSC-100L or equivalent
• Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
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-150 Topics in Computer Science
.3-.4 units SC
• Variable hours
• Note: May be repeated twice when software is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
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
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. C-ID COMP 122, 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. This course covers scripting and the shell, access control, controlling processes, booting and shutting down, permissions, filesystems, utility programs, editors, usage of network services, storage, AWK scripting, and X Window graphics. CSU, UC

COMSC-172 UNIX and Linux Administration
2 units SC
• 27 hours lecture/27 hours laboratory per term
• Recommended: COMSC-171 or equivalent
This course prepares the student to install, configure, and maintain a UNIX or Linux system. Topics include installation, booting, user management, hardware configuration, backup, package management, Transmission Control Protocol/Internet Protocol (TCP/IP) configuration, Dynamic Host Control Protocol (DHCP) servers configuration, Domain Name Server (DNS) server configuration, file server configuration, web server configuration, routing, packet filtering, and security. Course content will apply to all UNIX and Linux flavors. CSU

COMSC-200 Object Oriented Programming C++
4 units SC
• 54 hours lecture/54 hours laboratory per term
• Prerequisite: COMSC-165 or equivalent
This course provides detailed coverage of the concepts and syntax of the C++ Language. Topics include 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  
This course presents techniques relevant to program design and selection of data structures for larger programs. Topics include design techniques, effective use of recursion, algorithmic efficiency and O-notation, linked lists, binary trees, B-trees, graphs, sorting and searching techniques. Extensive programming of a variety of data structures is practiced.  
C-ID COMP 132, 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 covers 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  
This course covers 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 descriptor tables, virtual memory, cache memory, and dynamic address translation. C-ID COMP 142, CSU, UC

COMSC-275  Introduction to Web Programming Using PHP and JavaScript  
4 units  SC  
- 54 hours lecture/54 hours laboratory per term  
- Recommended: COMSC-110 or equivalent  
This is an introductory course that presents the basic concepts and applications of web programming. The course uses the JavaScript on the client side and PHP (Hypertext Preprocessor) on the server side and introduces the PHP language and covers the basics of the JavaScript language. HTML (Hyper Text Markup Language) and CSS (Cascading Style Sheets) are also reviewed. CSU

COMSC-276  Intermediate Web Programming Using PHP and MySQL  
4 units  SC  
- 54 hours lecture/54 hours laboratory per term  
- Recommended: COMSC-275 or equivalent  
This course presents the basic concepts and applications of server side web programming. PHP (Hypertext Preprocessor) is used as the server side programming language and MySQL as the database language. PHP language constructs are used to interface with the database. CSU

COMSC-277  Advanced Web Programming Using PHP  
4 units  SC  
- 54 hours lecture/54 hours laboratory per term  
- Recommended: COMSC-275 or equivalent  
This is an advanced web programming course that presents advanced concepts and application of both client and server side programming. The JavaScript language as the client side and PHP (Hypertext Preprocessor) as the server side programming language and MySQL as the database will be used. CSU
Construction

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

Possible career opportunities
Students completing a certificate in construction are qualified for positions in middle management in the building and construction inspection field, and in supervision for the construction industry.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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

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 major requirements with a "C" grade or higher and complete general education requirements as listed in the catalog. A student is eligible for graduation with an associate in science degree after the satisfactory completion of one of three areas of specialization, general education requirements and degree-applicable elective coursework for a total of 60 units. Degree requirements can be completed by attending classes in the day, the evening, or both. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer. DVC construction students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU 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
major requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-114</td>
<td>Blueprint Reading</td>
<td>3</td>
</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:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Structural</td>
<td></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></td>
</tr>
<tr>
<td>CONST-273</td>
<td>Construction Management</td>
<td></td>
</tr>
</tbody>
</table>

total minimum required units 33

Construction and supervision and superintendency specialization
major requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-101</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>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>4</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></td>
</tr>
<tr>
<td>CONST-276</td>
<td>Legal Aspects of the Construction Industry</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-110</td>
<td>Occupational Safety</td>
<td>2</td>
</tr>
<tr>
<td>CONST-136</td>
<td>Construction Processes: Commercial</td>
<td>4</td>
</tr>
<tr>
<td>CONST-181</td>
<td>Building Code Interpretation:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Structural</td>
<td>3</td>
</tr>
<tr>
<td>CONST-295</td>
<td>Occupational Work Experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education in CONST</td>
<td>1-4</td>
</tr>
</tbody>
</table>

total minimum required units 34
**Construction**

**Construction management specialization**

<table>
<thead>
<tr>
<th>Major Requirements</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-101 Computer Literacy</td>
<td>4</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>
<tr>
<td><strong>Total Minimum Required Units</strong></td>
<td><strong>38</strong></td>
</tr>
</tbody>
</table>

**Associate in science degree**

**Pre-apprenticeship**

Students completing the program will be able to...

A. interpret blueprints and specifications.
B. apply construction terminology.
C. use currently available basic personal protective equipment and be able to select appropriate equipment for a given environment.
D. identify the most common sources of occupational injury and death.
E. apply principles of job site safety.
F. practice professional behavior on the construction site.
G. demonstrate a clear understanding of many trades, interactions, interdependencies, and how the basic construction process flows from one trade to another.

This program prepares students for entry-level jobs in the building trades and/or entry into apprenticeship programs. Program content includes introduction to construction processes, occupational health and safety principles, and blueprint reading. In addition, the program provides contextualized math and English, physical education, a survey of trades, and college and workplace success.

Upon completion of the program students will be able to directly enter the Northern California Laborers’ union, enter the Carpenters Training Committee for Northern California pre-apprenticeship program, or apply to a variety of apprenticeship programs, government agencies, and private-sector employers.

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. Students are advised that if they have previously completed equivalent or higher level English and/or math courses, these may be substituted for the degree requirements. Students are advised that entry into apprenticeship programs can be highly competitive and that many trades require documentation of at least one year of high school or one term of college algebra. Completion of higher levels of English and mathematics than are required by the degree are highly recommended.

General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer. DVC construction students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU GE).

**Certificate of achievement**

**Construction and building inspection**

Students completing the program will be able to...

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

This program is designed to prepare students for a career in building or construction inspection, and it is also valuable for those already employed in the field who wish to upgrade their skills.

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

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.

Certificate of achievement
Pre-apprenticeship

Students completing the program will be able to...
A. interpret blueprints and specifications.
B. apply construction terminology.
C. use currently available basic personal protective equipment and be able to select appropriate equipment for a given environment.
D. identify the most common sources of occupational injury and death.
E. apply principles of job site safety.
F. practice professional behavior on the construction site.
G. demonstrate a clear understanding of many trades, interactions, interdependencies, and how the basic construction process flows from one trade to another.
This program prepares students for entry-level jobs in the building trades and/or entry into apprenticeship programs. Program content includes introduction to construction processes, occupational health and safety principles, and blueprint reading. In addition, the program provides contextualized math and English, physical education, a survey of trades, and college and workplace success.

Upon completion of the program students will be able to directly enter the Northern California Laborers’ union, enter the Carpenters Training Committee for Northern California pre-apprenticeship program, or apply to a variety of apprenticeship programs, government agencies, and private-sector employers.

The certificate of achievement requires completion of 21. The certificate of achievement requires completion of 20 units of study and certain courses also meet requirements of other construction degrees and certificates. Students must complete each course used to meet a certificate requirement with a “C” grade or higher. Students are advised that entry into apprenticeship programs can be highly competitive and that many trades require documentation of at least one year of high school or one term of college algebra. Completion of higher levels of English and mathematics than are required by the certificate are highly recommended. Students will enroll in CARER-140, CONST-105, CONST-135, CONST-215, and KNACT-120 as a cohort and complete these courses in one term.

**Certificate of accomplishment**

**Pre-apprenticeship**

Students completing the program will be able to...

A. interpret blueprints and specifications.

B. apply construction terminology.

C. use currently available basic personal protective equipment and be able to select appropriate equipment for a given environment.

D. identify the most common sources of occupational injury and death.

E. apply principles of job site safety.

F. practice professional behavior on the construction site.

G. demonstrate a clear understanding of many trades, interactions, interdependencies, and how the basic construction process flows from one trade to another.

This program prepares students for entry-level jobs in the building trades and/or entry into apprenticeship programs. Certain courses also meet requirements of other construction degrees and certificates. Students must complete each course with a “C” grade or higher.

**required courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-110</td>
<td>2</td>
</tr>
<tr>
<td>CONST-114</td>
<td>3</td>
</tr>
<tr>
<td>CONST-135</td>
<td>4</td>
</tr>
<tr>
<td>CONST-140</td>
<td>1.5</td>
</tr>
<tr>
<td>CONST-215</td>
<td>2</td>
</tr>
<tr>
<td>KNACT-120</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL-096</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-097</td>
<td>5</td>
</tr>
<tr>
<td>ENGL-098</td>
<td>3</td>
</tr>
</tbody>
</table>

**required courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-090</td>
<td>5</td>
</tr>
<tr>
<td>MATH-092</td>
<td>4</td>
</tr>
<tr>
<td>MATH-120</td>
<td>5</td>
</tr>
<tr>
<td>MATH-121</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units**

20

* Higher-level math and English may be substituted.
Construction

CONST-101 Exploring Construction, Architecture, Manufacturing, and Engineering
1 unit  P/NP
- 18 hours lecture/22 hours laboratory per term
- Note: Field trips required.
This course provides an overview of employment trends, work attitudes, values, materials, processes, and career opportunities in construction, architecture, manufacturing, and engineering. Students will explore these topics through lecture and hands-on experience with high-tech equipment and processes, guest lectures, and field trips to industrial sites. CSU

CONST-105 Survey of the Trades
1.5 units  SC
- 18 hours lecture/36 hours laboratory per term
- Note: This course is part of the career advancement academy construction trades program.
The course presents a survey of career opportunities and requirements of the skilled trades as well as basic theoretical and practical skills common to all construction trades. CSU

CONST-110 Occupational Safety
2 units  SC
- 36 hours lecture/18 hours laboratory per term
- Note: Students meeting all course requirements will be eligible for a 30 hour OSHA Construction Safety Card. Students may petition to repeat when regulatory or industry standards change. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
This course covers the principles of health and safety in construction. Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) regulations and how they are applied to construction will be covered. CSU

CONST-114 Blueprint Reading
3 units  SC
- 54 hours lecture per term.
This course introduces the interpretation and development of blueprints for the building industry. CSU

CONST-116 Plane Surveying
4 units  SC
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: MATH-121 or equivalent
- Note: Same as ENGIN-140
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

CONST-124 Construction Details and Specifications
3 units  SC
- 54 hours lecture per term
Advanced study of construction detailing and specifications for building systems from foundations to roofs, including windows and doors, thermal and moisture protection, stairs and elevators and metal fabrications for wood frame, reinforced concrete, structural steel, and heavy timber buildings. Interpretation and sketching of details as well as an introduction to the general conditions for the construction contract. Techniques required to produce construction drawings and specifications conforming to current building codes and standards, including using manual drawing techniques and computer aided drafting. CSU

CONST-135 Construction Processes: Residential
4 units  SC
- 54 hours lecture/54 hours laboratory per term
- Note: Credit by examination option available.
This course is an introduction to basic processes of the construction industry. Students will study light wood-frame construction and code requirements in residential construction. The areas of focus include quantity analysis, work activity sequencing and scheduling. CSU

CONST-136 Construction Processes: Commercial
4 units  SC
- 54 hours lecture/54 hours laboratory per term
This course is an overview of the processes of heavy construction including review of the working plans/drawings, construction sites, layout, substructures, superstructures made of concrete, steel, masonry, and wood. CSU

CONST-144 Materials of Construction
3 units  SC
- 54 hours lecture per term
This course introduces the performance characteristics of construction materials. Testing concepts and procedures, basic properties of metals, concrete, timber, masonry, and roofing materials with an emphasis on construction applications will also be covered. CSU

CONST-150 Topics in Construction
-3-4 units  SC
- Variable hours
A supplemental course in construction designed to provide a study of current concepts and problems in construction. Specific topics to be announced in the schedule of classes. CSU

CONST-170 Fundamentals of Building Inspection
3 units  SC
- 54 hours lecture per term
This course is focused on basic construction inspection procedures and the inspectors legal responsibilities. Topics to be covered include inspecting structures, occupancy types, safety, and proper record keeping. CSU
CONST-180  California Building Codes for Disability Access
3 units  SC
- 54 hours lecture per term
This course provides an overview of building codes as they relate to disability access. Federal and State statutes, regulations, and case law associated with disability will also be covered. CSU

CONST-181  Building Code Interpretation: Non-Structural
3 units  SC
- 54 hours lecture per term
This course provides an overview of the legal requirements associated with building inspection. Nonstructural plan check review, and inspection procedures for commercial and industrial buildings will also be covered. CSU

CONST-182  Building Code Interpretation: Structural
3 units  SC
- 54 hours lecture per term
- Recommended: MATH-090 or MATH-090SP or MATH-090E or one year of high school algebra or equivalent
This course acquaints the student with legal requirements associated with building inspection. The development of code item checklists and structural plan reviews will also be covered. CSU

CONST-183  Title 24: Energy Conservation Codes
3 units  SC
- 54 hours lecture per term
This course presents an overview of Title 24 energy conservation and energy compliance codes. The focus of the course is on building a plan inspection and construction field inspection. Energy projects, streamlining energy compliance forms review, case studies, and reviewing plan checking and building inspection procedures will also be covered. CSU

CONST-181  Plumbing Code Interpretation
3 units  SC
- 54 hours lecture per term
- Note: Students may petition to repeat when code changes. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
This course covers the interpretation and application of codes and standards as they apply to construction of plumbing systems. CSU

CONST-192  Mechanical Code Interpretation
3 units  SC
- 54 hours lecture per term
This course acquaints students with legal requirements associated with building inspections. The California Mechanical Code and other standards as they apply to heating, ventilation, and refrigeration will also be discussed. CSU

CONST-215  Construction Job Site Training
2 units  SC
- 9 hours lecture/81 hours laboratory per term
- Note: Job site experiences are scheduled off-campus. Students must provide transportation to and from job sites.
This course provides students with real job site experience in the construction trades. Students will participate as individuals and/or in group projects with organizations such as Habitat for Humanity and other community organizations. CSU

CONST-244  Estimating: Residential
3 units  SC
- 54 hours lecture per term
- Recommended: CONST-114 or CONST-135 or equivalent
This course will present the procedures for estimating materials, labor costs, time management, and bidding strategies for residential construction projects. CSU

CONST-245  Estimating: Commercial
3 units  SC
- 54 hours lecture per term
- Recommended: CONST-114 and CONST-136 or equivalents
This course will present the procedures for estimating materials, labor costs, time management, and bidding strategies for commercial construction projects. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
This course covers the interpretation of the National Electrical Code (NEC) for general requirements, wiring and protection, wiring methods and materials (articles 90-398). Safety installation practices will be presented.
### 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This course covers the interpretation of the National Electrical Code (NEC) for equipment for general use, special occupancies and special equipment (articles 400-830). Safety installation practices will be presented.

### CONST-273 Construction Management
3 units SC
- 54 hours lecture per term

This course presents an introduction to administrative procedures, contracts, plans and specifications, schedules, diaries, inspections, report writing, and other forms of communication in the construction field. The different roles in construction management will also be discussed. CSU

### CONST-276 Legal Aspects of the Construction Industry
3 units SC
- 54 hours lecture per term

This course provides a summary of the legal implications of the duties and responsibilities of a construction supervisor, superintendent, and contractor. The emphasis is on the practical aspects of legal theories, codes, and cases that are applied to the construction industry. Attention will also be given to contracts and their interpretations. CSU

### CONST-295 Occupational Work Experience
Education in CONST
1-4 units SC
- May be repeated three times
- Variable hours
- Note: In order to enroll in CONST-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

CONST-295 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. Five hours work per week or seventy-five hours work per term is equal to one unit. Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

### CONST-298 Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

See work experience - WRKX

### COUNSELING – COUNS

Beth Hausscarriague, Dean
Counseling Division
Student Services Center, Room 203

Possible career opportunities

Diablo Valley College’s counseling courses are designed to assist students in identifying educational and career goals, and enhancing their success through instruction in career and educational planning and student success strategies.

### COUNS-075 Topics in College Readiness
.3-4 units P/NP
- Non degree applicable
- Variable hours

A supplemental course which provides a variety of topics for students preparing for college-level work. Specific topics will be announced in the schedule of classes.
COUNS-095 Educational Planning

.3 unit P/NP
- Non degree applicable
- 6 hours lecture per term
- Limitation on enrollment: Students must complete the online orientation and math and English assessments prior to enrolling in this course.

This course provides an introduction to educational goal setting and course selection. Students will develop a plan to succeed in achieving their educational goal. Topics will include identification of educational and career goals, academic assessment, counseling and advising services.

COUNS-096 Educational Planning for Student-Athletes

.3 unit P/NP
- Non degree applicable
- 6 hours lecture per term
- Limitation on enrollment: Students must complete the online orientation and math and English assessments prior to enrolling in this course.

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-097 Educational Planning for DSS Students

.3 unit P/NP
- Non degree applicable
- 6 hours lecture per term
- Note: Submit disability documentation to the DSS office in SSC-248 prior to registering for this course. Completion of English and mathematics assessment four days prior to this course will facilitate appropriate course selection.

This course provides an introduction to college for students with disabilities using course content tailored to meet the unique needs of this population. It will provide students in Disability Support Services (DSS) with a concrete plan for enrolling and succeeding in college. Topics include: an overview of DSS services and accommodations at Diablo Valley College (DVC), an explanation of the differences between high school and college, an overview of general information about certificate, associate degree and transfer pathways, and how to build a student educational plan.

COUNS-100 New Student Success Strategies

1 unit SC
- 18 hours lecture per term

This course introduces new students to information, resources and skills necessary for college success. Topics will include educational opportunities, campus resources, study skills and strategies. The class also provides instruction in educational planning to reach certificate, degree and transfer goals. CSU

COUNS-120 Student Success

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

This course presents skills and strategies to succeed as a college student. Topics such as motivation and attitudes, time management, decision-making processes, goal-setting, critical thinking skills, study skills and interpersonal communication will be explored. Students will evaluate their own skills and behaviors in relation to these topics and learn strategies to make meaningful choices about their education, career and personal goals. CSU, UC (credit limits may apply to UC - see counselor)

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

Despina Prapavessi, 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, bakery assistant, bakery entrepreneur, and bakery chef at grocery food chains, cafes, restaurants, bakeries, hospitals, resorts, child care facilities, cafeterias, food preparation centers, and catering facilities.

The restaurant management program prepares students to enter the restaurant field as a manager-trainee in a food service establishment. Career options include: restaurant owner/operator, hotel banquet manager, dining room manager, purchasing specialist, catering manager, and food editor. Some career options may require more than two years of college study.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree
Hospitality studies - Baking and pastry
Students completing the program will be able to...
A. identify equipment and utensils used in baking and discuss proper use and care.
B. demonstrate an understanding of the properties and functions of various ingredients, and demonstrate proper scaling and measurement techniques.
C. evaluate quality standards in baking and pastry products in written and oral form.

Associate in science degree
Hospitality studies - Culinary arts
Students completing the program will be able to...
A. demonstrate an understanding of the criteria for 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.

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, American Culinary Federation (ACF) accredited 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:

The DVC Culinary Program has been successfully preparing students for professional careers for the past 40 years.

Baking and pastry:
DVC has been placing students in small and large bakeries, specialty pastry shops, catering and dessert preparation in restaurants. Diablo Valley College’s baking and pastry program offers an in-depth, hands-on learning curriculum where students gain both knowledge and experience through the hotel and restaurant management program’s technical facilities. In addition to training at the DVC facilities, students gain experience working outside the college through a required internship program. DVC’s associate degree in hospitality studies with a specialization in baking and pastry is designed primarily for those students who desire to complete a two-year degree. General Education Option 1 (DVC General Education) is appropriate for students who do not intend to transfer. Students who are interested in pursuing a management-focused program in hospitality should see a counselor and consider the General Education Requirements Options 2 or 3.
Culinary arts:
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:
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 60-seat restaurant that is open to the public. In addition to training at the DVC facilities, students gain experience working outside the college through a required internship program. DVC's associate degree in hospitality studies with a specialization in restaurant management is geared primarily towards DVC's culinary students desiring some additional management coursework. Students who are interested in pursuing a management-focused program in hospitality should expect to complete a four-year degree program at a university. These students should see a counselor and consider the General Education Requirements Options 2 or 3.

Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file in the Culinary Department Office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. To earn an associate in science degree, students must complete each course used to meet a certificate requirement with a "C" grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the degree.

Students are limited to one associate in science degree regardless of the number of specializations completed. Multiple certificates may be awarded.

major requirements:
CULN-105 Introduction to the Kitchen ...................................... 0.5
CULN-110 Orientation to Hospitality ........................................ 3
CULN-115 Culinary Mathematics ............................................. 1.5
CULN-120 Fundamentals of Cuisine ....................................... 5
CULN-153 Safety and Sanitation ............................................. 2
CULN-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-224 Catering Business and Operations ...................... 2

plus at least 2 units from one of the following courses:
CULN-295 Occupational Work Experience Education in CULN ........................................ 2-4
CULN-296 Internship in Occupational Work Experience Education in CULN ........................................ 2-4
CULN-298 Independent Study ............................................. 2-3
CULN-299 Student Instructional Assistant ............................. 2-3

plus at least 1 unit from:
CULN-230A Culinary Competition I ......................................... 0.5
CULN-230B Culinary Competition II ....................................... 0.5
CULN-235A On-Campus Catering I ....................................... 0.5-1
CULN-235B On-Campus Catering II ....................................... 0.5-1

plus at least 1.5 units from:
CULN-240A On-Campus Catering I ....................................... 0.5-1
CULN-240B On-Campus Catering II ....................................... 0.5-1
CULN-240C On-Campus Catering III ..................................... 0.5-1

Choose one of the following three specialization areas:

baking and pastry

required courses:

CULN-181 Fundamental Techniques of Baking and Pastry ......................... 6.5
CULN-281 Advanced Techniques of Baking and Pastry............. 6.5

plus at least 2 units from:
CULN-129 Introduction to Urban Farming:
Farm-to-Table .......................................................... 1
CULN-186 Sustainable Hospitality - Energy, Water and Waste ................. 1
CULN-210 Artisan Bread ..................................................... 1
CULN-212 Candies, Chocolates and Truffles ................................ 1
CULN-213 Seasonal Spring Desserts ...................................... 1
CULN-214 Seasonal Fall Desserts ......................................... 1
CULN-215 Decorative Confectionery Showpieces .................... 1

Culinary arts

required courses:
CULN-127 Garde Manager .................................................. 2
CULN-154 Menu Development and Planning .......................... 2
CULN-167 Restaurant Operations in the Dining Room ........... 3
CULN-175 Meat, Poultry and Fish Fabrication ....................... 2
CULN-220 Advanced Cuisine .............................................. 5

plus at least 1.5 units from:
CULN-161 Baking for Culinary Students .............................. 1.5
CULN-181 Fundamental Techniques of Baking and Pastry ................. 6.5

plus at least 2 units from:
CULN-129 Introduction to Urban Farming:
Farm-to-Table .......................................................... 1
CULN-160 Fundamentals of Beverage, Wine and Spirits .......... 3
CULN-186 Sustainable Hospitality - Energy, Water and Waste ................. 1

total minimum required units-
baking and pastry 41.3

culinary arts

required courses:
CULN-127 Garde Manager .................................................. 2
CULN-154 Menu Development and Planning .......................... 2
CULN-167 Restaurant Operations in the Dining Room ........... 3
CULN-175 Meat, Poultry and Fish Fabrication ....................... 2
CULN-220 Advanced Cuisine .............................................. 5

plus at least 1.5 units from:
CULN-161 Baking for Culinary Students .............................. 1.5
CULN-181 Fundamental Techniques of Baking and Pastry ................. 6.5

plus at least 2 units from:
CULN-129 Introduction to Urban Farming:
Farm-to-Table .......................................................... 1
CULN-160 Fundamentals of Beverage, Wine and Spirits .......... 3
CULN-186 Sustainable Hospitality - Energy, Water and Waste ................. 1

total minimum required units-
culinary arts 43.8
Culinary arts

restaurant management

required courses:  units
CULN-193 Inventory and Ordering Systems Laboratory ... 0.3
CULN-195 Supervisory Management in Food Service ... 3
CULN-224 Catering Business and Operations ... 2
CULN-281 Advanced Techniques of Backing and Pastry ... 6.5

plus at least 2 units from:
CULN-129 Introduction to Urban Farming: Farm-to-Table ... 1
CULN-186 Sustainable Hospitality - Energy, Water and Waste ... 1
CULN-210 Artisan Bread ... 1
CULN-212 Candies, chocolates and truffles ... 1
CULN-213 Seasonal Spring Desserts ... 1
CULN-214 Seasonal Fall Desserts ... 1
CULN-215 Decorative Confectionary Showpieces ... 1

plus at least 1.5 units from:
CULN-195 On-Campus Catering I ... 0.5
CULN-235B On-Campus Catering II ... 0.5

plus at least 2 units from one of the following courses:
CULN-295 Occupational Work Experience Education in CULN ... 2-4
CULN-296 Internship in Occupational Work Experience Education in CULN ... 2-4
CULN-298 Independent Study ... 2-3
CULN-299 Student Instructional Assistant ... 2-3

Certificate of achievement

Baking and pastry

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

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:  units
CULN-105 Introduction to the Kitchen ... 0.5
CULN-115 Culinary Mathematics ... 1.5
CULN-130 Fundamentals of Cuisine ... 5
CULN-153 Safety and Sanitation ... 2
CULN-181 Fundamental Techniques of Baking and Pastry ... 6.5
CULN-185 Nutritional Guidelines in Food Preparation ... 2
CULN-192 Purchasing Operations and Systems Laboratory ... 2.5

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
G. demonstrate the ability to work as an effective member of a production team.
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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CULN-105</td>
<td>Introduction to the Kitchen</td>
<td>0.5</td>
</tr>
<tr>
<td>CULN-110</td>
<td>Orientation to Hospitality</td>
<td>3</td>
</tr>
<tr>
<td>CULN-115</td>
<td>Culinary Mathematics</td>
<td>1.5</td>
</tr>
<tr>
<td>CULN-120</td>
<td>Fundamentals of Cuisine</td>
<td>5</td>
</tr>
<tr>
<td>CULN-127</td>
<td>Gaarde Manger</td>
<td>2</td>
</tr>
<tr>
<td>CULN-132</td>
<td>Safety and Sanitation</td>
<td>3</td>
</tr>
<tr>
<td>CULN-154</td>
<td>Menu Development and Planning</td>
<td>2</td>
</tr>
<tr>
<td>CULN-156</td>
<td>Restaurant Operations in the Dining Room</td>
<td>3</td>
</tr>
<tr>
<td>CULN-157</td>
<td>Meat, Poultry and Fish Fabrication</td>
<td>2</td>
</tr>
<tr>
<td>CULN-185</td>
<td>Nutritional Guidelines in Food Preparation</td>
<td>2</td>
</tr>
<tr>
<td>CULN-192</td>
<td>Purchasing Operations and Systems Laboratory</td>
<td>2.5</td>
</tr>
<tr>
<td>CULN-193</td>
<td>Inventory and Ordering Systems Laboratory</td>
<td>0.5</td>
</tr>
<tr>
<td>CULN-195</td>
<td>Supervisory Management in Food Service</td>
<td>3</td>
</tr>
<tr>
<td>CULN-220</td>
<td>Advanced Cuisine</td>
<td>5</td>
</tr>
<tr>
<td>CULN-224</td>
<td>Catering Business and Operations</td>
<td>2</td>
</tr>
</tbody>
</table>

**Plus at least 1.5 units from:**

- CULN-161 Baking for Culinary Students: 1.5 units
- CULN-181 Fundamental Techniques of Baking and Pastry: 6.5 units

**Plus at least 2 units from:**

- CULN-129 Introduction to Urban Farming: 1 unit
- CULN-160 Fundamentals of Beverage, Wine and Spirits: 3 units
- CULN-166 Sustainable Hospitality - Energy, Water and Waste: 1 unit

**Plus at least 1 unit from:**

- CULN-230A Culinary Competition I: 0.5 unit
- CULN-230B Culinary Competition II: 0.5 unit
- CULN-235A On-Campus Catering I: 0.5 unit
- CULN-235B On-Campus Catering II: 0.5 unit

**Plus at least 1.5 units from:**

- CULN-240A On-Campus Catering I: 0.5 unit
- CULN-240B On-Campus Catering II: 0.5 unit
- CULN-240C On-Campus Catering III: 0.5 unit

Plus at least 2 units from one of the following courses:

- CULN-295 Occupational Work Experience: 2-4 units
- CULN-296 Education in CULN: 2-4 units
- CULN-298 Independent Study: 2-3 units
- CULN-299 Student Instructional Assistant: 2-3 units

**Total Minimum Required Units:** 43.8

### Certificate of Achievement: Restaurant Management

Students completing the program will be able to...

A. explain factors that determine quality food.
B. explain and list both the advantages and disadvantages comparing full service to buffet service.
C. plan, organize, setup and serve special events for 100-150 guests.
D. calculate cost and apply procedures in order to run a cost effective food service establishment.

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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSAC-181</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CULN-105</td>
<td>Introduction to the Kitchen</td>
<td>0.5</td>
</tr>
<tr>
<td>CULN-110</td>
<td>Orientation to Hospitality</td>
<td>3</td>
</tr>
<tr>
<td>CULN-115</td>
<td>Culinary Mathematics</td>
<td>1.5</td>
</tr>
<tr>
<td>CULN-120</td>
<td>Fundamentals of Cuisine</td>
<td>5</td>
</tr>
<tr>
<td>CULN-132</td>
<td>Safety and Sanitation</td>
<td>3</td>
</tr>
<tr>
<td>CULN-153</td>
<td>Fundamentals of Beverage, Wine and Spirits</td>
<td>2</td>
</tr>
<tr>
<td>CULN-154</td>
<td>Menu Development and Planning</td>
<td>2</td>
</tr>
<tr>
<td>CULN-160</td>
<td>Fundamentals of Beverage, Wine and Spirits</td>
<td>3</td>
</tr>
<tr>
<td>CULN-166</td>
<td>Sustainable Hospitality - Energy, Water and Waste</td>
<td>1 unit</td>
</tr>
<tr>
<td>CULN-167</td>
<td>Restaurant Operations in the Dining Room</td>
<td>3</td>
</tr>
<tr>
<td>CULN-175</td>
<td>Catering Business and Operations</td>
<td>2</td>
</tr>
<tr>
<td>CULN-230A</td>
<td>Culinary Competition I</td>
<td>0.5</td>
</tr>
<tr>
<td>CULN-230B</td>
<td>Culinary Competition II</td>
<td>0.5</td>
</tr>
<tr>
<td>CULN-235A</td>
<td>On-Campus Catering I</td>
<td>0.5-1</td>
</tr>
<tr>
<td>CULN-235B</td>
<td>On-Campus Catering II</td>
<td>0.5-1</td>
</tr>
<tr>
<td>CULN-240A</td>
<td>On-Campus Catering I</td>
<td>0.5-1</td>
</tr>
<tr>
<td>CULN-240B</td>
<td>On-Campus Catering II</td>
<td>0.5-1</td>
</tr>
<tr>
<td>CULN-240C</td>
<td>On-Campus Catering III</td>
<td>0.5-1</td>
</tr>
<tr>
<td>CULN-295</td>
<td>Occupational Work Experience</td>
<td>2-4</td>
</tr>
<tr>
<td>CULN-296</td>
<td>Education in CULN</td>
<td>2-4</td>
</tr>
<tr>
<td>CULN-298</td>
<td>Independent Study</td>
<td>2-3</td>
</tr>
<tr>
<td>CULN-299</td>
<td>Student Instructional Assistant</td>
<td>2-3</td>
</tr>
</tbody>
</table>

**Total Minimum Required Units:** 43.8
Culinary arts

plus at least 1.5 units from:
CULN-181 Baking for Culinary Students ........................................ 1.5
CULN-181 Fundamental Techniques of Baking and Pastry .......................... 6.5

plus at least 1 unit from:
CULN-230A Culinary Competition I ........................................ 0.5
CULN-230B Culinary Competition II ........................................ 0.5
CULN-235A Off-Campus Catering I ........................................ 0.5
CULN-235B Off-Campus Catering II ........................................ 0.5

plus at least 1.5 units from:
CULN-240A On-Campus Catering I ........................................ 0.5-1
CULN-240B On-Campus Catering II ........................................ 0.5-1
CULN-240C On-Campus Catering III ........................................ 0.5-1

plus at least 2 units from one of the following courses:
CULN-295 Education in CULN ........................................ 2-4
CULN-296 Internship in Occupational Work ........................................ 2-4
CULN-298 Independent Study ........................................ 2-3
CULN-299 Student Instructional Assistant ........................................ 2-3

total minimum required units 43.3

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.

CULN-105 Introduction to the Kitchen
1 unit SC
- 27 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. Credit by examination option available.

This course introduces students to the requirements of the culinary arts program with an emphasis on hygiene, safety, and kitchen equipment knowledge. It is specifically designed for students with no familiarity with standard culinary protocols. CSU

CULN-110 Orientation to Hospitality
8 units SC
- 54 hours lecture per term
- Note: Credit by examination option available.

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

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-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.

This course focuses on the practical development of fundamental student skills in knife, tool and culinary equipment handling and introduces basic food preparation per American Culinary Federation (ACF) standards. Students will develop a working knowledge of laws and regulations relating to food safety, personal safety, and maintain proper sanitation in the kitchen. The emphasis is on professional skills required by quantity food service. CSU
CULN-123  Sauc es of the World
1 unit LR
- 9 hours lecture/27 hours laboratory per term
- Prerequisite: CULN-105 and CULN-153 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. See instructor at the first class meeting.

This course introduces the preparation of mother sauces, stocks, soups, classical sauces, contemporary sauces, accompaniments, and the pairing of sauces with a variety of foods. 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 with an emphasis on decorated platters and other preparations appropriate for buffet service. CSU

CULN-129  Introduction to Urban Farming: Farm-to-Table
1 unit SC
- 9 hours lecture/27 hours laboratory per term
- Note: Class meets off-campus at Rodger Ranch Urban Farm in Pleasant Hill.

This course introduces students growing food for restaurants and useful for anyone who wants to grow their own food. Topics include soil preparation, planting, and organic gardening and farming techniques. Nutrition, menu planning, as well as organic and sustainable practices are also covered. CSU

CULN-153  Safety and Sanitation
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 presents the basic principles of safety and sanitation and their application in food service operations. Effective personal hygiene habits and food handling practices for the protection of consumers are reinforced. This course must be taken before or concurrently with the first culinary laboratory course (CULN-120 or CULN-151). 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

This course provides a comprehensive study of beverage service operations and control. Topics include basic production, types of beer, wine, and spirits, merchandising, and regulations concerning service of alcoholic and non-alcoholic beverages, including coffee and tea. CSU

CULN-161  Baking for Culinary Students
1.5 units SC
- 9 hours lecture/54 hours laboratory per term
- Prerequisite: CULN-105 or equivalent and CULN-153 (may be taken concurrently) 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 provides an applied and theoretical study of basic principles of commercial baking as practiced in hotels, restaurants, and retail bakeries. CSU
CULN-167 Restaurant Operations in the Dining Room
3 units SC
• 162 hours laboratory per term
• Co-requisite: CULN-153 (may be taken previously) or equivalent
• Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the culinary office by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting.

This course provides students with practical experience in the fundamentals of dining room service, including rules and styles of service, various forms of food service, and basic dining room management and planning. CSU

CULN-175 Meat, Poultry and Fish Fabrication
2 units SC
• 36 hours lecture per term
• Note: Culinary and food service students must have a current record of satisfactory TB screening on file with the culinary offices by the beginning of classes.

This course provides students with a comprehensive overview of the meat identification process, including cutting, buying and ordering procedures, nutrition data, food safety and storage, and USDA grading standards. CSU

CULN-181 Fundamental Techniques of Baking and Pastry
6.5 units SC
• 36 hours lecture/243 hours laboratory per term
• Prerequisite: CULN-105 and CULN-153 (may be taken concurrently) or equivalents
• 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.
• Formerly CULN-180 and CULN-150R

This course presents both practical and theoretical study of fundamental principles of commercial baked goods and pastry production. Students will have extensive hands-on experience in baking techniques to produce commercial quality products in quantity. CSU

CULN-185 Nutritional Guidelines in Food Preparation
2 units SC
• 36 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

This course provides an introduction to food composition, dietary guidelines, recipe modification, food cooking and storage techniques for nutrient retention. Contemporary nutritional issues will be addressed. CSU

CULN-186 Sustainable Hospitality-Energy, Water and Waste
1 unit SC
• 18 hours lecture per term

This course presents current information on energy efficiency, water efficiency, and waste to ensure efficient, environmentally sustainable operations in food service. Students will practice decision-making regarding these issues based on science and economics to optimize sustainability and profitability. CSU

CULN-192 Purchasing Operations and Systems Laboratory
2.5 units SC
• 135 hours laboratory per term
• Co-requisite: CULN-193 (may be taken previously) and CULN-192 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 presents current practices in foodservice purchasing, receiving, storage, issuance, and documentation. This course is appropriate for entry level students and presents product identification and evaluation, as well as the organization of a professional foodservice operation. 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

This course focuses on the application of management principles of supervision to specific business contexts within the food service industry. CSU
CULN-210  Artisan Bread
1 unit  SC
• 9 hours lecture/27 hours laboratory per term
• Prerequisite: CULN-105 and CULN-153 or equivalents
• Recommended: CULN-161 or CULN-181 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 is designed to expose students to the theory and techniques used in the baking of artisan breads, including but not limited to: baguettes, sourdoughs, whole wheat, multigrain, rye, pan and egg breads. CSU

CULN-211  Principles of Food, Beverage, and Cost Controls
3 units  SC
• 54 hours lecture per term

This course prepares students to apply cost control measures in restaurant and beverage management. Key principles and concepts are presented and cost control strategies are presented for each phase of beverage and food service operations. CSU

CULN-212  Candies, Chocolates and Truffles
1 unit  SC
• 9 hours lecture/27 hours laboratory per term
• Prerequisite: CULN-105 and CULN-153 or equivalents
• Recommended: CULN-161 or CULN-181 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 skill development in the production of a variety of candies and chocolates specific to the confectionery industry. Topics include brittle, toffees, meringues, truffles, and bonbons. CSU

CULN-213  Seasonal Spring Desserts
1 unit  SC
• 9 hours lecture/27 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 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 presents a practical study of basic pastries, their components, and desserts specific to the spring season as appropriate for hotels, restaurants, wholesale and retail bakeries/pastry shops. CSU

CULN-214  Seasonal Fall Desserts
1 unit  SC
• 9 hours lecture/27 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 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 presents a practical study of basic pastries, their components, and desserts specific to the fall season as appropriate for hotels, restaurants, wholesale and retail bakeries/pastry shops. CSU

CULN-215  Decorative Confectionery Showpieces
1 unit  SC
• 9 hours lecture/27 hours laboratory per term
• Recommended: CULN-181 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 presents theory and production techniques of advanced confectionery showpieces including: chocolate, marzipan, sugar, Isomalt, pastillage, and royal icing. 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 presents the history and geographical distribution of wine production. The pairing of wines with food will be emphasized. 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 and a California Food Handlers Certificate 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 skills developed in the fundamentals of cuisine course (CULN-120), 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. Students will develop basic supervisor and kitchen management skills. CSU
Culinary arts

CULN-224 Catering Business and Operations
2 units  SC
• 36 hours lecture per term
This course provides an introduction to operating a catering business. Topics discussed will include effective client relations, event planning, pricing and cost controls, legal issues, and equipment requirements. Menu planning for a variety of events such as banquets, and plated events will also be covered. 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.
This course presents an introduction to cuisines from around the world using cultural, social and historical frameworks. Emphasis will be on cultural contrast that reflects the ethnic culinology of at least three non-European countries. The importance of ethnic cuisine in today's multicultural society and its significance and influence on North American culture will also be discussed. CSU

CULN-230A Culinary Competition I
.5 unit  SC
• 27 hours laboratory by arrangement per term
• Prerequisite: CULN-120 (may be taken concurrently) 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 is an introduction to the skills required to participate in a variety of culinary competitions. Possible categories include hot and cold foods, buffet platters, desserts, decorated cakes, confectionery showpieces, and ice carvings. CSU

CULN-230B Culinary Competition II
.5 unit  SC
• 27 hours laboratory by arrangement per term
• Prerequisite: CULN-230A 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 is an advanced application of skills required to participate in a variety of culinary competitions. Possible categories include hot and cold foods, buffet platters, desserts, decorated cakes, confectionery showpieces, and ice carvings. CSU

CULN-235A Off-Campus Catering I
.5-1 unit  SC
• Variable hours
• Prerequisite: CULN-105 and CULN-153 or equivalents
• Recommended: 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.
This course is an introduction to fundamental catering applications. Students will cater various types of off-campus events such as breakfast, lunch, and dinner buffets and plated events, and hors d’oeuvres. CSU

CULN-235B Off-Campus Catering II
.5-1 unit  SC
• Variable hours
• Prerequisite: CULN-235A 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 intermediate off-campus catering course includes skill development in specific catering preset, setup, service and breakdown techniques. Students participate as group leaders at catering events. Students will cater various types of off-campus events such as breakfast, lunch, and dinner buffets and plated events, and hors d’oeuvres. CSU

CULN-240A On-Campus Catering I
.5-1 unit  P/NP
• Variable hours
• Prerequisite: CULN-105 and CULN-153 or equivalents
• Recommended: 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.
This course is an introduction to fundamental catering applications. Students will cater various types of on-campus events such as breakfast, lunch, and dinner buffets and plated events, coffee breaks, and hors d’oeuvres. CSU
CULN-240B  On-Campus Catering II
.5-1 unit  P/NP
• Variable hours
• Prerequisite: CULN-240A 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 intermediate on-campus catering course includes skill development in specific catering preset, setup, service and breakdown techniques. Students participate as group leaders at catering events. This course is an introduction to fundamental catering applications. Students will cater various types of on-campus events such as breakfast, lunch, and dinner buffets and plated events, coffee breaks, and hors d’oeuvres. CSU

CULN-240C  On-Campus Catering III
.5-1 unit  P/NP
• Variable hours
• Prerequisite: CULN-240B 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 advanced on-campus catering course emphasizes skill development in effective client relations and event planning. Topics include comprehensive equipment requirements, setup plans, staff management, and service and breakdown techniques. CSU

CULN-281  Advanced Techniques of Baking and Pastry
6.5 units  SC
• 36 hours lecture/243 hours laboratory per term
• Prerequisite: CULN-181 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.
• Formerly CULN-280 and CULN-150T

This course presents advanced theory and techniques in baking and pastry techniques. Students will practice advanced skills to produce a variety of commercial quality goods typical for hotels, restaurants, and retail bakeries. CSU

CULN-295  Occupational Work Experience Education in CULN
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in CULN-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

CULN-295 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. Five hours work per week or seventy-five hours work per term is equal to one unit. Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

CULN-296  Internship in Occupational Work Experience Education in CULN
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in the CULN-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

CULN-296 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU
CULN-298 Independent Study
.5-3 units SC
• Variable hours
• Note: Culinary and food service students must have a current record of satisfactory tuberculosis (TB) screening on file with the Culinary offices by the beginning of classes. Students are required to supply their own equipment and uniforms depending on the class. See instructor at the first class meeting. Submission of acceptable educational contract to department and Instruction Office is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

DANCE – DANCE

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

Possible career opportunities
Students who receive a degree in dance can not only pursue a career as a professional dancer in commercial dances onstage and in film, but they may also seek careers as dance therapists, dance instructors, or choreographers. Degree recipients can apply their knowledge of dance in areas such as arts administration, studio management, arts grant writing, and dance notators for dance companies.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

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 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 insure that the requirements for transfer to the four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or General Education 3 (CSU 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.
**Dance**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANCE-212</td>
<td>Ballet I.</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-222</td>
<td>Jazz Dance I.</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-232</td>
<td>Modern Dance I.</td>
<td>1</td>
</tr>
<tr>
<td>plus at least 2 units from 2 different disciplines:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANCE-213</td>
<td>Ballet II.</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-223</td>
<td>Jazz Dance II.</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-233</td>
<td>Modern Dance II.</td>
<td>1</td>
</tr>
<tr>
<td>plus at least 2 units from 2 different disciplines:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANCE-214</td>
<td>Ballet III.</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-216</td>
<td>Pointe Technique</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-224</td>
<td>Jazz Dance III.</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-234</td>
<td>Modern Dance III.</td>
<td>1</td>
</tr>
<tr>
<td>KNDAN-105A*</td>
<td>Pilates Mat Work I</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-160A*</td>
<td>Tap Dance I.</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-160B*</td>
<td>Tap Dance II</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-162*</td>
<td>Broadway Dance</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-164A*</td>
<td>Ballroom/Social Dance I</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-166*</td>
<td>Swing Dance</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-168A*</td>
<td>Salsa and Latin Dance I</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-169A*</td>
<td>Argentine Tango</td>
<td>0.5</td>
</tr>
<tr>
<td>KNDAN-170A*</td>
<td>Beginning Hip-Hop and Urban Funk Dance</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-170B*</td>
<td>Intermediate Hip-Hop and Urban Funk Dance</td>
<td>0.5-2</td>
</tr>
<tr>
<td>*at least one unit required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>plus at least 2 additional units from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>any of the core technique courses not used above</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>total core technique requirements</strong></td>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>

**theory requirements**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANCE-201</td>
<td>Western Dance History: 20th Century to Present</td>
<td>3</td>
</tr>
<tr>
<td>DANCE-205</td>
<td>Music Theory for Dancers</td>
<td>2</td>
</tr>
<tr>
<td>DANCE-250</td>
<td>Dance Choreography</td>
<td>2</td>
</tr>
</tbody>
</table>

**performance requirements**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANCE-242</td>
<td>Repertory Dance Production I</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-243</td>
<td>Repertory Dance Production I - Tech Week</td>
<td>0.5</td>
</tr>
<tr>
<td>DANCE-244</td>
<td>Repertory Dance Production II</td>
<td>1</td>
</tr>
<tr>
<td>DANCE-245</td>
<td>Repertory Dance Production II - Tech Week</td>
<td>0.5</td>
</tr>
<tr>
<td>DANCE-246</td>
<td>Dance Production I</td>
<td>1.5</td>
</tr>
<tr>
<td>DANCE-247</td>
<td>Dance Production I - Tech Week</td>
<td>0.5</td>
</tr>
<tr>
<td>DANCE-248</td>
<td>Dance Production II</td>
<td>1.5</td>
</tr>
<tr>
<td>DANCE-249</td>
<td>Dance Production II - Tech Week</td>
<td>0.5</td>
</tr>
<tr>
<td>DANCE-256</td>
<td>Dance Production Choreography</td>
<td>1.5</td>
</tr>
<tr>
<td>DANCE-257</td>
<td>Dance Production Choreography - Tech Week</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**stagecraft requirements**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAMA-111</td>
<td>Introduction to Lighting Design</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-112</td>
<td>Introduction to Stage Makeup</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-113</td>
<td>Introduction to Costume Design</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-122</td>
<td>Basic Principles of Acting</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-200</td>
<td>Introduction to Technical Theater</td>
<td>3</td>
</tr>
</tbody>
</table>

**art/music/humanities requirements**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAMA-139</td>
<td>Introduction to Theater</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-142</td>
<td>Multicultural Perspectives in American Theater</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-150</td>
<td>Introduction to Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-162</td>
<td>Language, Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>HUMAN-105</td>
<td>Introduction to Humanities: Arts and Ideas</td>
<td>3</td>
</tr>
<tr>
<td>MUSIC-114</td>
<td>World Music</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 27

**Limitations on enrollment**

Effective fall term 2013, changes to the regulations that govern community college enrollments placed limitations on the number of courses that students may take in certain disciplines within the Contra Costa Community College District. The charts below indicate which Diablo Valley College (DVC) courses are assigned to groups of courses (“families”) for which limitations have been imposed. Certain courses within certain “families” may be repeated (see catalog description), however, students are limited to four enrollments within the family. Certain DVC courses are equivalent to courses at Los Medanos College and Contra Costa College. An enrollment in an equivalent course at one of those colleges will count toward the allowable four enrollments within the family.

NOTE: Diablo Valley College may offer experimental or topics courses. When appropriate, based on content, such courses will be assigned to a “family” and that enrollment will be counted as an experience within the “family”.

**Family: Ballet**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KNDAN-110A</td>
<td>Ballet Fundamentals I</td>
<td></td>
</tr>
<tr>
<td>KNDAN-110B</td>
<td>Ballet Fundamentals II</td>
<td></td>
</tr>
<tr>
<td>DANCE-212</td>
<td>Ballet I</td>
<td></td>
</tr>
<tr>
<td>DANCE-213</td>
<td>Ballet II</td>
<td></td>
</tr>
<tr>
<td>DANCE-214</td>
<td>Ballet III</td>
<td></td>
</tr>
<tr>
<td>DANCE-216</td>
<td>Pointe Technique</td>
<td></td>
</tr>
</tbody>
</table>

**Family: Jazz**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KNDAN-120A</td>
<td>Jazz Dance Fundamentals I</td>
<td></td>
</tr>
<tr>
<td>KNDAN-120B</td>
<td>Jazz Dance Fundamentals II</td>
<td></td>
</tr>
<tr>
<td>DANCE-222</td>
<td>Jazz Dance I</td>
<td></td>
</tr>
<tr>
<td>DANCE-223</td>
<td>Jazz Dance II</td>
<td></td>
</tr>
<tr>
<td>DANCE-224</td>
<td>Jazz Dance III</td>
<td></td>
</tr>
</tbody>
</table>

**Family: Modern**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KNDAN-130A</td>
<td>Modern Dance Fundamentals I</td>
<td></td>
</tr>
<tr>
<td>KNDAN-130B</td>
<td>Modern Dance Fundamentals II</td>
<td></td>
</tr>
<tr>
<td>DANCE-232</td>
<td>Modern Dance I</td>
<td></td>
</tr>
<tr>
<td>DANCE-233</td>
<td>Modern Dance II</td>
<td></td>
</tr>
<tr>
<td>DANCE-234</td>
<td>Modern Dance III</td>
<td></td>
</tr>
</tbody>
</table>

**Family: Ballroom Dance**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KNDAN-150A</td>
<td>Argentine Tango</td>
<td></td>
</tr>
<tr>
<td>KNDAN-164A</td>
<td>Ballroom/Social Dance I</td>
<td></td>
</tr>
<tr>
<td>KNDAN-166</td>
<td>Swing Dance</td>
<td></td>
</tr>
<tr>
<td>KNDAN-168A</td>
<td>Salsa and Latin Dance I</td>
<td></td>
</tr>
<tr>
<td>KNDAN-168B</td>
<td>Salsa and Latin Dance II</td>
<td></td>
</tr>
<tr>
<td>KNDAN-169A</td>
<td>Argentine Tango</td>
<td></td>
</tr>
</tbody>
</table>

DIABLO VALLEY COLLEGE  CATALOG 2017-2018  chapter four  PROGRAM/COURSE DESCRIPTIONS  173
Family: Tap
KNDAN-160A Tap Dance I
KNDAN-160B Tap Dance II

Family: Dance Production
DANCE-150A Dance Production II
DANCE-242 Repertory Dance Production I
DANCE-244 Repertory Dance Production II
DANCE-246 Dance Production I
DANCE-248 Dance Production II
DANCE-256 Dance Production Choreography

Family: Dance Performance
DANCE-150B Dance Production II - Tech Week
DANCE-243 Repertory Dance Production I – Tech Week
DANCE-245 Repertory Dance Production II – Tech Week
DANCE-247 Dance Production I - Tech Week
DANCE-249 Dance Production II - Tech Week
DANCE-257 Dance Production Choreography - Tech Week

Family: Dance Survey
KNDAN-100 Introduction to Dance
KNDAN-162 Broadway Dance

Family: Urban Dance
KNDAN-150B Beginning Hip-Hop and Urban Funk
KNDAN-150C Intermediate Hip-Hop and Urban Funk
KNDAN-170A Hip-Hop and Urban Funk Dance I
KNDAN-170B Hip-Hop and Urban Funk Dance II

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 presents 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
This is an introductory course in music and its relationship to dance and dancers. Compositional elements of music and their application to choreography and dance performance will be practiced. CSU, UC

DANCE-212 Ballet I
1 unit SC
• 54 hours laboratory per term
• Recommended: KNDAN-110A or equivalent
This is an intermediate course in ballet dance. The focus is on intermediate ballet barre, center adagio, allegro work, and across the floor combinations. The history of classical ballet works and their influence on the ballet dancer and current ballet styles will also be covered. CSU, UC

DANCE-213 Ballet II
1 unit SC
• 54 hours laboratory per term
• Prerequisite: DANCE-212 or equivalent
This is an advanced course in ballet dance. The focus is on advanced ballet barre, center adagio, allegro work, and across-the-floor combinations. Basic choreographic principles as they relate to ballet will also be presented. CSU, UC

DANCE-214 Ballet III
1 unit SC
• 54 hours laboratory per term
• Prerequisite: DANCE-213 or equivalent
This is an advanced/pre-professional course in ballet dance. The focus is on advanced ballet barre, center adagio, allegro work, and across-the-floor combinations at the pre-professional level. Classical ballet variations and basic pas de deux techniques as they relate to classical ballet will be practiced. CSU, UC

DANCE-216 Pointe Technique
1 unit SC
• 54 hours laboratory per term
• Prerequisite: DANCE-212 or KNDAN-110A or equivalent
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 they relate 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 will also be presented. CSU, UC
DANCE-222 Jazz Dance I
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: KNDAN-120 or equivalent
This is an intermediate course in jazz dance. The focus is on contemporary, lyrical, hip-hop and Broadway styles. The history of jazz dance on stage, movie, and videos and its influence on the jazz dancer and current jazz dance styles will also be covered. CSU, UC

DANCE-223 Jazz Dance II
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-222 or equivalent
This is an advanced course in jazz dance. The focus is on advanced jazz dance technique from contemporary, lyrical, hip-hop and Broadway styles. Choreographic principles as they relate to jazz dance will also be covered. CSU, UC

DANCE-224 Jazz Dance III
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-223 or equivalent
This is an advanced/pre-professional course in jazz dance. The focus is on advanced jazz dance technique from contemporary, lyrical, hip-hop and Broadway styles. Choreographic principles as they relate to jazz dance to enhance performance potential will also be covered. CSU, UC

DANCE-232 Modern Dance I
1 unit  SC  
- 54 hours laboratory per term  
- Recommended: KNDAN-130 or equivalent
This is an intermediate course in modern dance. The focus is on intermediate axial and locomotor movements, styles from early modern, post-modern, and contemporary modern innovators. The history of modern dance and its influence on the modern dancer and current modern dance styles will also be covered. CSU, UC

DANCE-233 Modern Dance II
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-232 or equivalent
This is an advanced course in modern dance. The focus is on advanced axial and locomotor movements and styles from early modern, post-modern, and contemporary modern innovators. Choreographic principles related to modern dance will also be covered. CSU, UC

DANCE-234 Modern Dance III
1 unit  SC  
- 54 hours laboratory per term  
- Prerequisite: DANCE-233 or equivalent
This is an advanced/pre-professional course in modern dance. The focus is on advanced performance level axial and locomotor movements and styles from early modern, post-modern, and contemporary modern innovators with an emphasis on pre-professional performance quality. Choreographic principles related to modern dance that enhance performance potential will also be covered. CSU, UC

DANCE-242 Repertory Dance Production I
1 unit  SC  
- 54 hours laboratory by arrangement per term  
- Co-requisite: DANCE-243 or equivalent
This course prepares students for a dance performance. The emphasis is on the mastery of faculty-choreographed compositions to be presented to a live audience in a professional theater space. CSU, UC

DANCE-243 Repertory Dance Production I - Tech Week
.5 unit  SC  
- 36 hours laboratory by arrangement per term  
- Co-requisite: DANCE-242 or equivalent
Students will participate in a dance performance of faculty-choreographed compositions for a live audience in a professional theater space. CSU, UC

DANCE-244 Repertory Dance Production II
1 unit  SC  
- 54 hours laboratory by arrangement per term  
- Prerequisite: DANCE-242 or equivalent  
- Co-requisite: DANCE-245 or equivalent
This course prepares the experienced dancer for a dance performance. The emphasis is on the mastery of intermediate level faculty-choreographed compositions to be presented to a live audience in a professional theater space. CSU, UC

DANCE-245 Repertory Dance Production II - Tech Week
.5 unit  SC  
- 36 hours laboratory by arrangement per term  
- Co-requisite: DANCE-244 or equivalent
This is a dance performance course for the experienced dance student. Students will participate in a dance performance of faculty-choreographed compositions for a live audience in a professional theater space. CSU, UC
DANCE-246 Dance Production I
1.5 units SC
• 72 hours laboratory per term
• Co-requisite: DANCE-247 or equivalent
This course prepares students for a dance performance. The emphasis is on the mastery of student-choreographed compositions to be presented to a live audience in a professional theater space. Students will also participate in the technical and business aspects of the production. CSU, UC

DANCE-247 Dance Production I - Tech Week
.5 unit SC
• 36 hours laboratory by arrangement per term
• Co-requisite: DANCE-246 or equivalent
Students will participate in a dance performance of student-choreographed compositions for a live audience in a professional theater space. CSU, UC

DANCE-248 Dance Production II
1.5 units SC
• 72 hours laboratory per term
• Prerequisite: DANCE-246 or equivalent
• Co-requisite: DANCE-249 or equivalent
This course prepares the experienced dance student for a dance performance. The emphasis is on the mastery of student-choreographed compositions to be presented to a live audience in a professional theater space. Students will also participate in the technical and business aspects of the production. CSU, UC

DANCE-249 Dance Production II - Tech Week
.5 unit SC
• 36 hours laboratory by arrangement per term
• Co-requisite: DANCE-248 or equivalent
This is a dance performance course focusing on the role of the choreographer in the presentation of an original dance composition presented to a live audience in a professional theater space. The emphasis is on staging techniques, incorporation of technical theater elements, and performance development. A final dance concert performance of the student's original choreography culminates the term's work. CSU, UC

DANCE-250 Dance Choreography
2 units SC
• 18 hours lecture/54 hours laboratory per term
• Formerly DANCE-240
This course provides an introduction to principles of choreography. Dance movement phrasing, spatial design and relationships, rhythm, theme and development, concert, solo and group work will be presented. Critical evaluation of choreographic dance components through analysis and presentation in the classroom will also be discussed. CSU, UC

DANCE-256 Dance Production Choreography
1.5 units SC
• 72 hours laboratory per term
• Prerequisite: DANCE-246 and DANCE-250 or equivalents
• Co-requisite: DANCE-257 or equivalent
This is a dance production class with an emphasis on experiential learning by choreographing, staging and rehearsing a student-choreographed dance production. It includes the application of choreographic theory and technique with emphasis on dance as a performing art and participation in the technical and business aspects of a student production. CSU, UC

DANCE-257 Dance Production Choreography - Tech Week
.5 unit SC
• 36 hours laboratory by arrangement per term
• Co-requisite: DANCE-256 or equivalent
This is a dance performance course focusing on the role of the choreographer in the presentation of an original dance composition presented to a live audience in a professional theater space. The emphasis is on staging techniques, incorporation of technical theater elements, and performance development. A final dance concert performance of the student's original choreography culminates the term's work. 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
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 Commission on Dental Accreditation of the American Dental Association and the United States Department of Education. This qualifies the student upon graduation to take state and national board examinations to become a licensed Registered Dental Assistant in California (RDA) and a Certified Dental Assistant (CDA). Other options for continuing education and licensing allow Registered Dental Assistant to specialize and become a Registered Dental Assistant in Extended Functions (RDAEF). Other career options include study to become a Registered Dental Hygienist (RDH) or a dentist (DDS or DMD).

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree

Dental assisting

Students completing the program will be able to...

A. students completing this program will be able to act as a member of the dental health team and apply professional, ethical and legal principles while functioning in the role of the Registered Dental Assistant (RDA).

B. students completing this program will be able to assume responsibility for prevention of disease transmission utilizing universal precautions in the work environment to protect those entrusted to their care.

C. students completing this program will be able to show competence in skills as described in the current California Dental Practice Act. Said professional should perform with a balance of professionalism and sensitivity characteristic of genuine compassionate care.

D. students completing this program will be able to exhibit knowledge necessary for successful completion of the California Registered Dental Assistant’s Examination and the National Certified Dental Assistant’s Examination.

E. students completing this program will be able to apply critical thinking and self-assessment skills to enhance learning, research, patient care, professional growth, and continued competency.

F. students completing this program will be able to integrate and apply health literacy and culturally competent communication skills to oral health care services, academic endeavors, community projects, and professional activities.

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.

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 10-month program is scheduled to begin each fall term in August and the dental assisting courses will be completed by the middle of May. The two terms include classroom instruction as well as clinical experience in the DVC dental clinic, local dental schools, 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 graduating from the program and applying to take the state license and national examinations.

Entrance into the Diablo Valley College (DVC) Dental Assisting Program is highly competitive with enrollment limited to 24 students. To be eligible for enrollment, applicants must have a high school diploma or its equivalent and enroll in DENTL-120 Orientation to the Dental Assisting Program, which is offered prior to enrollment for the fall term.

Prior to August 1, students who have successfully passed DENTL-120 and have been chosen to enroll in the program will be required to show: (1) proof of CPR (AHA/Health Care Provider/American Red Cross/Professional Rescuer) certification; (2) required immunizations/titer/s; (3) proof of negative two-step TB test; (4) results of a recent physical examination/screening; (5) results of a certified background check; and (6) results of a certified drug test. Reporting documents will be handed out during the orientation meeting.

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.

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.
For dental assisting program information contact the Coordinator of Dental Programs, Counseling Office, or DVC website.

**program prerequisite:**

DENTL-120 Orientation to the Dental Assisting Program ........................................... 0.3

Note: It is strongly recommended to complete the required general education courses* prior to entering the dental assisting program in the fall term.

**major requirements:**

COMM-121* Persuasion and Critical Thinking .................................................. 3
DENHY-124 Dental Radiography .................................................................................. 3
DENHY-290 Transitioning from Student to Dental Professional .................................. 1
DENTL-171 Oral Facial Anatomy and Body Systems ............................................. 3.5
DENTL-173 Dental Operative Procedures I ............................................................... 3
DENTL-174 Dental Materials and Laboratory Procedures ........................................... 3
DENTL-175 Infection Control and Theories of Dental Assisting ......................... 3
DENTL-180 Dental Office Management ..................................................................... 3
DENTL-181 Dental Emergencies, Pharmacology and Oral Pathology .................... 2
DENTL-182 Dental Radiography Laboratory .................................................................. 0.5
DENTL-183 Dental Operative Procedures II ................................................................. 5
DENTL-184 Clinical Experience ................................................................................ 7
ENGL-122* Freshman English: Composition and Reading ........................................... 3

**plus at least 3 units from:**

PSYCH-101* Introduction to Psychology .............................................................. 3
PSYCH-122* Psychology in Modern Life ................................................................ 3

**total minimum required units** ................................................................. 41.3

Note: DVC GE Areas IC, II and III must be satisfied to complete AS degree requirements.

**Certificate of achievement**

**Dental assisting**

Students completing the program will be able to...

A. students completing this program will be able to act as a member of the dental health team and apply professional, ethical and legal principles while functioning in the role of the Registered Dental Assistant (RDA).

B. students completing this program will be able to assume responsibility for prevention of disease transmission utilizing universal precautions in the work environment to protect those entrusted to their care.

C. students completing this program will be able to show competence in skills as described in the current California Dental Practice Act. Said professional should perform with a balance of professionalism and sensitivity characteristic of genuine compassionate care.

D. students completing this program will be able to exhibit knowledge necessary for successful completion of the California Registered Dental Assistant’s Examination and the National Certified Dental Assistant’s Examination.

E. students completing this program will be able to apply critical thinking and self-assessment skills to enhance learning, research, patient care, professional growth, and continued competency.

F. students completing this program will be able to integrate and apply health literacy and culturally competent communication skills to oral health care services, academic endeavors, community projects, and professional activities.

**program prerequisite:**

DENTL-120 Orientation to the Dental Assisting Program ........................................... 0.3

Note: It is strongly recommended to complete the required general education courses* prior to entering the dental assisting program in the fall term.

**required courses:**

DENHY-124 Dental Radiography .................................................................................. 3
DENHY-290 Transitioning from Student to Dental Professional .................................. 1
DENTL-171 Oral Facial Anatomy and Body Systems ............................................. 3.5
DENTL-173 Dental Operative Procedures I ............................................................... 3
DENTL-174 Dental Materials and Laboratory Procedures ........................................... 3
DENTL-175 Infection Control and Theories of Dental Assisting ......................... 3
DENTL-180 Dental Office Management ..................................................................... 3
DENTL-181 Dental Emergencies, Pharmacology and Oral Pathology .................... 2
DENTL-182 Dental Radiography Laboratory .................................................................. 0.5
DENTL-183 Dental Operative Procedures II ................................................................. 5
DENTL-184 Clinical Experience ................................................................................ 7
ENGL-122* Freshman English: Composition and Reading ........................................... 3

**plus at least 3 units from:**

PSYCH-101* Introduction to Psychology .............................................................. 3
PSYCH-122* Psychology in Modern Life ................................................................ 3

**plus at least 3 units from:**

COMM-120* Public Speaking ...................................................................................... 3
COMM-121* Persuasion and Critical Thinking .......................................................... 3
COMM-128* Interpersonal Communication .............................................................. 3

**total minimum required units** ................................................................. 41.3

---

**DENTL-110** Overview of the Dental Professions

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

This course provides an overview of the dental professions, with special emphasis on assisting, hygiene and dental technology concepts. Content is designed to be helpful to students considering applying to dental assisting, dental hygiene, or dental technology programs. CSU.
DENTL-120 Orientation to the Dental Assisting Program

.3 unit P/NP

- 6 hours lecture/3 hours laboratory per term
- Limitation on enrollment: Only students who submit a dental assisting application with evidence of a high school diploma or its equivalent will be allowed to register for this course. See the catalog or website for program information. Students who complete this course with a (P) grade (75%) will be eligible for selection for admission into the dental assisting program.
- Note: Students must submit an official high school diploma or equivalent if they are seeking to be a part of the program starting in August.

This course is designed for all students interested in enrolling into the dental assisting program. The orientation course will provide the student with detailed enrollment information and the health protocol standards for dental assisting students. Emphasis will be placed on laboratory asepsis, infection control and disease transmission. 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. An overview of dental terminology, introduction to clinical instrumentation skills and areas of planning and time management for the dental assisting student. 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 Anatomy and Body Systems

3.5 units LR

- 54 hours lecture/36 hours laboratory per term
- Prerequisite: DENTL-120 or equivalent
- Limitation on enrollment: Acceptance to the DVC Dental Assisting program, including current TB Clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certificate (Basic Life Support for Healthcare Provider with AED).
- Recommended: Eligibility for ENGL-122 or equivalent

This course introduces students to head and neck anatomy, general anatomy and body systems. Emphasis will be on the teeth, their supporting structures, and the respiratory and cardiovascular systems as they relate to monitoring patient sedation. CSU

DENTL-173 Dental Operative Procedures I

3 units LR

- 36 hours lecture/54 hours laboratory per term
- Prerequisite: DENTL-120 or equivalent
- Limitation on enrollment: Acceptance to the DVC Dental Assisting program, including current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certificate (Basic Life Support for Healthcare Provider with AED).
- Recommended: Eligibility for ENGL-122 or equivalent

Students will be introduced to the principles of chairside assisting. Emphasis is to be placed on operative procedures, which include chairside responsibilities, instrument identification, tray setups, four-handed techniques, and sequences of general dentistry procedures. Identification, care and maintenance of the operator and equipment will also be presented. CSU

DENTL-174 Dental Materials and Laboratory Procedures

3 units LR

- 36 hours lecture/54 hours laboratory per term
- Prerequisite: DENTL-120 or equivalent
- Limitation on enrollment: Acceptance to the DVC Dental Assisting program, including current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certificate (Basic Life Support for Healthcare Provider with AED).
- Recommended: Eligibility for ENGL-122 or equivalent

This course introduces students to the study, characteristics, safe manipulation, and use of dental materials, laboratory equipment and instruments in operative and restorative dentistry. Emphasis is placed on infection control, safety standards, and hazard control protocols. CSU

DENTL-175 Infection Control and Theories of Dental Assisting

3 units LR

- 36 hours lecture/54 hours laboratory per term
- Prerequisite: DENTL-120 or equivalent
- Limitation on enrollment: Acceptance into the DVC Dental Assisting program, including current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certificate (Basic Life Support for Healthcare Provider with AED).
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: This course meets the eligibility requirements for the certificate in Infection Control and the California Dental Practice Act required by the state for unlicensed Dental Assistants.

This course introduces the student to microbiology, infectious diseases, immunity and infection control in the dental office. Topics 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. CSU
### Dental Assisting

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Lecture/Laboratory</th>
<th>Prerequisites</th>
<th>Limitation on Enrollment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENTL-180</td>
<td>Dental Office Management</td>
<td>3</td>
<td>LR</td>
<td>- 54 hours lecture per term</td>
<td>- Prerequisite: DENTL-171 or equivalent</td>
<td>This course covers front office management duties in the dental profession. These duties include dental staff management and interaction, patient management, written communication, telecommunication, bookkeeping/financial transactions, dental office documents, dental insurance, appointment management systems, dental software, recall systems, inventory systems, and supply ordering. Dental jurisprudence, related ethical concerns, and HIPAA compliance are presented in this course. CSU</td>
</tr>
<tr>
<td>DENTL-181</td>
<td>Dental Emergencies, Pharmacology and Oral Pathology</td>
<td>2</td>
<td>LR</td>
<td>- 36 hours lecture per term</td>
<td>- Co-requisite: DENTL-175 or equivalent</td>
<td>This course prepares students to assist in the management of medical and dental emergencies, including review of legal and ethical responsibilities. Pathology of the hard and soft tissues of the oral cavity and function of pharmacology are also covered. CSU</td>
</tr>
<tr>
<td>DENTL-182</td>
<td>Dental Radiography Laboratory</td>
<td>.5</td>
<td>LR</td>
<td>- 27 hours laboratory per term</td>
<td>- Prerequisite: DENHY-124 or equivalent</td>
<td>This course emphasizes patient management, radiation safety and infection control procedures in accordance with Occupational and Safety and Health Administration (OSHA) and Center For Disease Control (CDC) guidelines and regulations from the California Dental Practice Act (DPA). The laboratory and clinical experiences will allow students to enhance the efficiency and quality of their radiographic techniques. Students will perform, evaluate, and interpret various types of intra-oral and extra-oral radiographs using advanced principles and practices of dental radiography with emphasis on technique and diagnostic quality of dental x-rays. CSU</td>
</tr>
<tr>
<td>DENTL-183</td>
<td>Dental Operative Procedures II</td>
<td>5</td>
<td>LR</td>
<td>- 54 hours lecture/108 hours laboratory per term</td>
<td>- Prerequisite: DENTL-173 or equivalent</td>
<td>This course presents instruction in assisting and instrumentation for the following dental specialties: orthodontics, endodontics, periodontics, pediatric dentistry, prosthodontics, oral maxillofacial surgery, and public health. The theory and practice of coronal polishing and dental sealants are included. Completion of a dental health community service project is required. CSU</td>
</tr>
<tr>
<td>DENTL-184</td>
<td>Clinical Experience</td>
<td>3</td>
<td>LR</td>
<td>- 27 hours lecture/300 hours laboratory per term</td>
<td>- Prerequisite: DENTL-174 or equivalent</td>
<td>This course offers students supervised clinical experience in an externship environment. Students will provide chairside dental assisting in general practice, specialty clinics, and dental schools. CSU</td>
</tr>
<tr>
<td>DENTL-299</td>
<td>Student Instruction Assistant</td>
<td>.5-3</td>
<td>SC</td>
<td>- Variable hours</td>
<td>- Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.</td>
<td>Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU</td>
</tr>
</tbody>
</table>
DENTAL HYGIENE – DENHY

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

Possible career opportunities
The Diablo Valley College (DVC) dental hygiene program prepares students to work as an essential member of the dental team. The dental hygiene program provides an excellent path for those interested in a variety of positions in the dental field. Working in a private dental office continues to be the primary place of employment for dental hygienists. For today’s dental hygiene professional, there are many other career pathways to explore including providing 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 dental education programs, a career in research, public advocacy, or as a sales representative for an oral healthcare company.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree
Dental hygiene

Students completing the program will be able to...
A. synthesize knowledge from all branches of learning to provide preventative, educational, collaborative, and therapeutic dental hygiene care for individuals and groups in a variety of settings.
B. develop a desire and ability to provide dental hygiene care applying the highest moral, ethical and legal principles 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 educator/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.

This is a two-year program of classroom instruction and clinical experience which prepares students to perform the educational, clinical, and laboratory responsibilities of a dental hygienist. The DVC dental hygiene program is accredited by the American Dental Association Commission on Dental Accreditation (CODA) and by the United States Department of Education and has also been approved by the Dental Hygiene Committee of California (DHCC). Skills include direct patient care, patient assessment, dental hygiene care planning, scaling, root planing, radiographs, preventative measures, sealants, local anesthetic administration, nitrous oxide sedation, and customized oral health education for individuals and groups. The program prepares students to take written and clinical licensing exams. The Dental Hygiene curriculum requires two consecutive academic years including summer. Entrance into the DVC Dental Hygiene program is highly competitive with enrollment limited to 20 students.

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 and the applicant must have an overall GPA of 3.0 or higher in these courses. Applications for acceptance to the dental hygiene program are generally accepted in January through mid-February for entrance during the following summer term.

Once accepted into the program students must successfully complete the orientation course DENHY-I01 and by August 1st must show: (1) proof of CPR (AHA/Health Care Provider/American Red Cross/Professional Rescuer) certification; (2) required immunizations/titers; (3) proof of negative two-step TB test; (4) results of a recent physical examination/screening; (5) results of a certified background check; and (6) results of a certified drug test. Reporting documents will be handed out during the orientation meeting.

Students who successfully complete the program earn an A.S. degree in Dental Hygiene. A.S. degree requirements include prerequisite courses, general education courses, and the required Dental Hygiene program requirements listed below. Students must achieve a “C” grade or higher in each of the degree conferring courses. Dental hygiene required courses are only available during the day. However, required general education courses are available in the day or evening. It is highly recommended that students complete the required general education course prior to beginning the program. For Dental Hygiene program information and an application packet, contact the Coordinator of Dental Programs, the Counseling office or the DVC website.

major requirements:

<table>
<thead>
<tr>
<th>program prerequisites or equivalents:</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>CHEM-109* Introductory Chemistry ......</td>
<td>4</td>
</tr>
<tr>
<td>ENGL-122 Freshman English: Composition and Reading ......................................</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI-160* Nutrition: Science and Applications ................................</td>
<td>3</td>
</tr>
</tbody>
</table>
Dental hygiene

plus at least 4 units from:
BIOSC-119* Fundamentals of Microbiology ................. 4
BIOSC-146* Principles of Microbiology .................... 5
*These courses must have been completed within the past seven years. An overall GPA of 3.0 or higher in these courses is required for program admission.

total minimum required units
- program prerequisites 28

program requirements:
DENHY-101 Dental Hygiene Orientation .......................... 0.5
DENHY-120 Introduction to Dental Hygiene: Theory, Process of Care and Practice ................................ 1
DENHY-121 Introduction to Comprehensive Clinical Dental Hygiene Care ............................................. 5
DENHY-122 Clinical Dental Hygiene .................................. 5
DENHY-123 Oral Health Care Education ......................... 2
DENHY-124 Dental Radiography .................................... 3
DENHY-125 Head and Neck Anatomy, Histology, and Embryology ......................................................... 4
DENHY-126 Dental Morphology ........................................ 2
DENHY-127 Infection Control: Theory, Practice and Communication ............................................................. 2
DENHY-128 Periodontics for the Dental Hygienist.............. 2
DENHY-129 Contemporary Dental Materials for the Dental Hygienist ......................................................... 1.5
DENHY-131 Expanded Functions for the Dental Hygienist.. 2
DENHY-132 Dental Hygiene Process of Care ........................ 1
DENHY-134 Evaluation of Scientific Research .................. 2
DENHY-135 Pharmacology for the Dental Hygienist......... 3
DENHY-136 Dental Hygiene Care of Patients with Special Needs ................................................................. 1
DENHY-219 Pathology .................................................. 2
DENHY-223 Ethics, Jurisprudence, and Practice Management ................................................................. 2
DENHY-225 Community Oral Health ............................... 1
DENHY-226 Community Oral Health Service Learning ...... 1.5
DENHY-227 Advanced Periodontics and Dental Hygiene Topics ................................................................. 2
DENHY-230 Advanced Clinical Dental Hygiene Care I ...... 6
DENHY-231 Advanced Clinical Dental Hygiene Care II ...... 6.5
DENHY-290 Transitioning from Student to Dental Professional ................................................................. 1

plus all units from:
COMM-121 Persuasion and Critical Thinking ..................... 3
MATH-120 Intermediate Algebra .................................... 5
SOCIO-120 Introduction to Sociology ............................... 3

plus at least 3 units from:
PSYCH-101 Introduction to Psychology ............................ 3
PSYCH-122 Psychology in Modern Life ............................ 3

The following courses are open only to those accepted into the dental hygiene program.

DENHY-101 Dental Hygiene Orientation .......................... 0.5
- 6 hours lecture/12 hours laboratory per term
- Limitation on enrollment: Provisional acceptance into the Diablo Valley College Dental Hygiene program (or as an alternate) is required for registration in this course.
- Note: Refer to the DVC catalog or Dental Hygiene Program website for information concerning program prerequisites and application process.

This course is designed to provide an overview of dental hygiene curriculum. Time and financial commitments necessary to be successful in the dental hygiene program will be emphasized. CSU

DENHY-120 Introduction to Dental Hygiene: Theory, Process of Care and Practice ........................................ 1
- 18 hours lecture per term
- Prerequisite: DENHY-101 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program includes current TB clearance, hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certificate (basic life support for healthcare provider with automated external defibrillators [AED])

This course provides an introduction to the evolving profession of dental hygiene and focuses on the conceptual framework for dental hygiene and the process of care for the promotion of oral health and wellness. Topics include the history of the dental hygiene profession, institutional accreditation and individual licensing, current dental health trends, health promotion strategies and electronic portfolio development. CSU

DENHY-121 Introduction to Comprehensive Clinical Dental Hygiene Care ..................................................... 5
- 54 hours lecture/108 hours laboratory per term
- Prerequisite: DENHY-101 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, Tetanus vaccination, malpractice insurance, and current CPR certificate (Basic Life Support for Healthcare Provider with Automated External Defibrillator [AED]). Certified background check and negative drug test required as a condition of enrollment in this course.

This course provides an introduction to the application of the dental hygiene process of care guided by the human needs conceptual model. The course includes clinical experiences focusing on assessment procedures related to comprehensive dental hygiene care. Instrumentation skill development with an emphasis on safety for the client as well as the clinician will also be addressed. CSU
DENHY-122  Clinical Dental Hygiene
5 units LR
- 45 hours lecture/144 hours laboratory per term
- Prerequisite: DENHY-121 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course provides an introduction to clinical dental hygiene practice. Instruction and experiences will emphasize client assessments, dental hygiene diagnosis, treatment planning implementation, and evaluation of dental hygiene care. Application of knowledge, critical thinking, and basic clinical skills acquired in previous dental hygiene courses will be emphasized. CSU

DENHY-123  Oral Health Care Education
2 units LR
- 36 hours lecture per term
- Prerequisite: DENHY-101 and NUTRI-160 or equivalents
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course provides an introduction to 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. CSU

DENHY-124  Dental Radiography
3 units LR
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: DENHY-101 or DENTL-100 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Assisting or Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course examines the fundamentals of dental radiography. Topics include history, principles, legal considerations, and radiation safety. Clinical applications include exposure techniques, film processing, mounting and interpreting dental radiographs and identifying errors in technique and their methods of correction. CSU

DENHY-125  Head and Neck Anatomy, Histology, and Embryology
4 units LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: DENHY-101, BIOSC-139 and BIOSC-140 or equivalents
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course provides an introduction to the structure and functions of the head and neck with special attention given to the oral cavity. General micro-anatomy of the tissue and the embryological development of the head and neck are covered. CSU

DENHY-126  Dental Morphology
2 units LR
- 36 hours lecture per term
- Prerequisite: DENHY-101 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course provides an introduction to the structures and forms of the human dentition. 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 and BIOSC-119 or BIOSC-146 or equivalents
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course provides an overview of the prevention of disease and disease transmission in the dental environment. This course will include infection control principles, protocols, Center For Disease Control (CDC) and Occupational Safety and Health Administration (OSHA) recommendations/regulations, and an introduction to effective communication techniques as related to infection control and 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
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course presents a structured study of the discipline of periodontics with a focus on the biological, behavioral and clinical aspects of the periodontal diseases. Topics include normal vs. diseased periodontal structures, etiology, risk factors, classification, and epidemiology. Students will apply periodontal assessment techniques leading to the development of appropriate strategies for planning preventative care, initial treatment and maintenance procedures for the periodontal diseases. Students are introduced to evidence-based decision making as they apply course content to simulated cases. 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
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course presents the fundamentals of dental materials. Basic science, behavior and manipulation of dental materials in a framework that enables adaptation to the rapidly evolving array of new dental materials and techniques in the professional arena will be covered. CSU

DENHY-131 Expanded Functions for the Dental Hygienist
2 units LR
- 18 hours lecture/54 hours laboratory per term
- Prerequisite: DENHY-127 or equivalent; CHEM-108 and CHEM-109 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course presents dental hygiene advanced clinical functions including clinical practice in administration of local anesthetics, topical anesthetic agents, nitrous oxide/oxygen analgesia and soft tissue curettage. CSU

DENHY-133 Behavioral Foundations and Communications Skills
1 unit LR
- 18 hours lecture per term
- Prerequisite: DENHY-101 or equivalent

This course introduces students to principles drawn from the behavioral sciences 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. Focus is on the modification of teaching, learning, and communication techniques appropriate for clients throughout the life span and development of abilities to interact with all members of our multicultural society. CSU

DENHY-134 Evaluation of Scientific Research
2 units LR
- 36 hours lecture per term
- Prerequisite: DENHY-120 and ENGL-122 or equivalents
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course is designed to familiarize the student with scientific research methodology and skills to critically review, evaluate and interpret scientific research and professional literature. CSU

DENHY-135 Pharmacology for the Dental Hygienist
3 units LR
- 54 hours lecture per term
- Prerequisite: DENHY-101 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course introduces the discipline of pharmacology. The focus is on categorizing drugs by therapeutic use and understanding the physiologic basis for drug action and interaction. Client case scenarios are introduced to allow students to apply course content to simulated clinical situations. CSU
DENHY-136  Dental Hygiene Care for Clients with Special Needs
1 unit LR
- 18 hours lecture per term
- Prerequisite: DENHY-101 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

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
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course is a supplemental class 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
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course provides an introduction to the principles of general and oral pathology. The focus is to gain skill in recognizing pathologic conditions and to develop an understanding of disease mechanisms, the diagnostic process, referral, and treatment options. CSU

DENHY-223  Ethics, Jurisprudence, and Practice Management
2 units LR
- 36 hours lecture per term
- Prerequisite: DENHY-120 or equivalent
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course examines jurisprudence, ethics, and practice management as those concepts relate to dental hygiene care and the dental profession. The importance of professional conduct, continuous quality improvement, self-assessment and peer evaluation are emphasized. Management and leadership skills essential for dental hygienists to participate in the practice management and administration of a dental hygiene practice will be covered. CSU

DENHY-225  Community Oral Health
1 unit LR
- 18 hours lecture per term
- Prerequisite: DENHY-120 or equivalent

This course is designed to focus on oral health promotion and disease prevention for a variety of populations with diverse oral health needs. It provides students with an introduction to the dental care delivery system and the significant social, political, cultural and economic forces directing the system. CSU

DENHY-226  Community Oral Health Service Learning
1.5 unit LR
- 18 hours lecture/27 hours laboratory by arrangement per term
- Prerequisite: DENHY-134 and DENHY-225 or equivalents
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).

This course provides an introduction to service-learning experiences related to the study of oral health promotion and disease prevention for groups of people. The process of community health program development including assessment, planning, implementation and evaluation will be emphasized. CSU
DENHY-227  Advanced Periodontics and Dental Hygiene Topics  
2 units  LR  
- 36 hours lecture per term  
- Prerequisite: DENHY-120 or equivalent  
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).  

This course presents advanced concepts of dental hygiene theory, comprehensive dental hygiene assessment, and treatment planning. Topics will include evidence-based decision making, powered instrumentation, dentinal hypersensitivity, periodontal pharmacology/chemotherapies to control disease activity, advanced instrumentation techniques and root morphology, sharpening skills, periodontal/restorative relationships, evolving technology for evaluation of oral lesions, and practice with comprehensive dental hygiene treatment planning. 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  
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).  

This course continues and expands development of dental hygiene skills in preventive therapy, oral prophylaxis, periodontal initial preparation, periodontal maintenance therapy, scaling and root debridement procedures, pain control and gingival curettage as well as adjunct therapeutic skills. Dental hygiene assessment (diagnostic) and dental hygiene care planning skills will continue to be developed leading to clinical competency. Techniques in the use and interpretation of radiographs, infection control and office procedures will be developed. 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  
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).  

This course is a continuation of the advanced clinical dental hygiene care course designed to lead toward the achievement of entry level clinical competence in preventive oral health care, oral prophylaxis, initial therapy and supportive periodontal therapy. Students will become entry level competent in scaling and debridement procedures, administration of local anesthetics and nitrous-oxide sedation, and gingival curettage as well as adjunct therapeutic skills such as the local placement of antimicrobial agents. 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. CSU  

DENHY-290  Transitioning from Student to Dental Professional  
1 unit  SC  
- 18 hours lecture per term  
- Prerequisite: DENHY-120 or DENTL-180 or equivalent  
- Limitation on enrollment: Acceptance to the Diablo Valley College Dental Assisting or Dental Hygiene program, including current TB Clearance, Hepatitis immunization and/or titer, tetanus vaccination, malpractice insurance, and current CPR certification (Basic Life Support for the Healthcare Provider with Automated External Defibrillator [AED]).  

This course will prepare students to transition into professional practice in dentistry. Marketing skills, resume and portfolio preparation, interviewing techniques, methods of compensation, malpractice insurance, and navigating licensure applications are emphasized. 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.
Drama

**DENHY-298 Independent Study**
- 0.5-3 units SC
- Variable hours
- **Note:** Submission of acceptable educational contract to department and Instruction Office is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

**DENHY-299 Student Instructional Assistant**
- 0.5-3 units SC
- Variable hours
- **Note:** Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.

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**

Toni Fannin, Interim Dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

**Possible career opportunities**

Most careers related to theatre require education beyond the associate degree; however, an understanding and mastery of technical theatre skills provides some preparation for work in local community and professional theatre. Possible career options include: set designer, model builder, makeup artist, lighting designer, stage manager, scenic artist, set builder, set carpenter, set painter, stage technician, sound technician, prop maker, and lighting operator.

**Program-level student learning outcomes**

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

**Associate in arts degree**

**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.

The program in technical theater prepares students for an entry-level career in community and professional theatre. 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 theatre at Diablo Valley College.

**major requirements:**

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

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>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>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>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>
</tr>
<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>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAMA-295</td>
<td>Occupational Work Experience Education in DRAMA</td>
<td>1-4</td>
</tr>
<tr>
<td>DRAMA-296</td>
<td>Internship in Occupational Work Experience in DRAMA</td>
<td>1-4</td>
</tr>
</tbody>
</table>
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 ...................... 3
ARTDM-149 Fundamentals of Digital Video .................... 3
ARTDM-160 3D Modeling and Animation I ..................... 3
DRAMA-113 Introduction to Costume Design .................. 3
DRAMA-130 Principles of Directing ............................ 3
DRAMA-230 Directing Projects .................................. 1-2
DRAMA-260* Technical Theater Practicum ................. 1-2
DRAMA-270* Stage Production .................................. 1-2
DRAMA-298 Independent Study .................................. 0.5-3
ENGTC-119 Introduction to Technical Drawing ............. 3
ENGTC-126 Computer Aided Design and Drafting - AutoCAD ................. 3
FTVE-120 Introduction to TV Studio Production ............. 3
FTVE-160 Introduction to Film Production .................... 3
MUSX-172 Introduction to Electronic Music and MIDI .... 3

**total minimum required units 28**

*Note: Students may apply either DRAMA-260 or DRAMA-270 to major requirements.*

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

Students completing the program will be able to...

A. demonstrate skill in performing or crewing a production.

B. analyze historical and contemporary theatrical literature.

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 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: 3 units**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAMA-122</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 9 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAMA-111</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-112</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-113</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-123</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-200</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units 18**

**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 basic skills required in the craft of theater.

C. demonstrate the ability to articulate the creative process of theatrical tasks.

**required courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAMA-111</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-112</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-200</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-201</td>
<td>1-2</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAMA-122</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-123</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-124</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-127</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units 28**
**DRAMA**

### Family: Acting

- **DRAMA-122** Basic Principles of Acting  
- **DRAMA-123** Intermediate Principles of Acting  
- **DRAMA-124** Basic Principles of Acting  
- **DRAMA-125** Advanced Styles in Scene Study: From Shakespeare to Shaw  
- **DRAMA-155SC** Stage Conflict  
- **DRAMA-155SH** Solving Shakespeare  
- **DRAMA-155XX** Advanced Acting Styles in Early Modern Theater

### Family: Audition

- **DRAMA-126** Audition and Preparation for the Camera  
- **DRAMA-127** Audition Techniques  
- **DRAMA-128** Auditioning and Preparation for the Camera II  
- **DRAMA-155KC** KOAC Theater Fest Competition

### Family: Directing

- **DRAMA-130** Principles of Directing  
- **DRAMA-230** Directing Projects  
- **DRAMA-155AC** Directing the One-Act  
- **DRAMA-155V** Devised Theater

### Family: Musical Theater

- **DRAMA-150** Children’s Theater  
- **DRAMA-170** Introduction to Musical Theater I  
- **DRAMA-171** Musical Theater II  
- **DRAMA-155VA** Acting in Musicals

### Family: Performance Acting

- **DRAMA-270** Stage Production

### Family: Performance - Musical Theater

- **DRAMA-275** Musical Theater Production

### Family: Production/Technical Theater

- **DRAMA-201** Technical Theater Laboratory  
- **DRAMA-202** Fundamentals of Stage Production - Technical Theater  
- **DRAMA-260** Technical Theater Practicum

---

### DRAMA-111 Introduction to Lighting Design

| Units: 3 | Type: SC  

This course will present the theory and techniques of stage lighting including the function of lighting equipment, the operation of basic dimmer systems, and the creation of lighting designs for selected scenes from plays. C-ID THTR 173, CSU, UC
DRAMA-112 Introduction to Stage Makeup  
3 units SC  
- 54 hours lecture per term  
This course presents the study the aesthetics, materials, and procedures of stage makeup. Corrective makeup, aging techniques, makeups which are in line with a play's given circumstances, character makeup applications, makeups which accurately depict historical eras and cultural demands, and abstract/linear makeup design projects will be covered. C-ID THTR 175, CSU, UC

DRAMA-113 Introduction to Costume Design  
3 units SC  
- 36 hours lecture/27 hours laboratory per term  
This course is an introduction to theatrical costume design. Topics include beginning construction theories, techniques, basic applications and practices. Various fabrics, basic patterning, wardrobe plotting, and historical styles will be covered. C-ID THTR 174, CSU, UC

DRAMA-114 Script Analysis  
3 units SC  
- 54 hours lecture per term  
This course explores the analysis of play scripts. Consideration is given to the historical and cultural context of various kinds of scripts, the bearing of technological change on the way script is understood, genre and form, narrative and plot analysis, linguistic analysis, interpreting stage directions, and identification of main themes. C-ID THTR 114, 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. C-ID THTR 151, 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-123 or equivalent  
Limitation on enrollment: Audition required; see schedule of classes for specific days and times.  
This course is a study of advanced acting with extensive focus on selected scenes from contemporary realism. The course covers an organic approach to acting based on the principles of Constantin Stanislavski. Special emphasis is placed on script analysis, personalization, and intensive listening and receptivity work with partners. CSU, UC

DRAMA-125 Advanced Styles in Scene Study: From Shakespeare to Shaw  
6 units SC  
- 108 hours lecture per term  
Prerequisite: DRAMA-124 or equivalent  
Limitation on enrollment: Audition required; see schedule of classes for specific days and times.  
This course applies the skills and techniques learned in DRAMA-124 to a range of different theatrical genres and styles. Students will analyze, prepare, and perform scenes from a wide variety of historical periods and genres, which may include: Classical, Restoration, Theater of the Absurd, and Early Modernism. This course will help the serious drama student prepare for a career in the competitive, professional theater. CSU, UC

DRAMA-126 Auditioning and Preparation for the Camera  
3 units SC  
- 54 hours lecture per term  
Recommended: DRAMA-123 or equivalent  
This course covers practical training and experience in working on camera for the actor. Close attention will be paid to adapting acting techniques that have special application to working 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-128 Auditioning and Preparation for the Camera II
3 units SC
- 54 hours lecture per term
- Prerequisite: DRAMA-126 or equivalent
- Recommended: DRAMA-123 or equivalent

This course will continue to build skills learned in DRAMA-126 with students learning more advanced techniques for auditioning for television and film. Students will use scripts from a variety of film and television styles, explore techniques such as: script analysis for camera work, continuity of takes, hitting a mark, finding and working in key light, and using various frame sizes such as long, medium, and close-up shots. This course will also examine the business side of the film and television industry with emphasis on auditioning, talent agents, casting directors, and demo reels. CSU

DRAMA-130 Principles of Directing
3 units SC
- 54 hours lecture per term
- Recommended: DRAMA-123 or equivalent; concurrent enrollment in DRAMA-230 or equivalent; eligibility for ENGL-122 or equivalent

This course covers the function of the stage director, the preparation of a play script from the first reading through casting, rehearsals, and performance. Emphasis will be placed on theory of directing as well as on its practical application for the stage. 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

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**

**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-171** Musical Theater II  
3 units  SC  
- 54 hours lecture per term  
- Prerequisite: DRAMA-170 or equivalent  
- Recommended: DRAMA-123 or equivalent  
This course is a study of advanced musical theater with extensive focus on selected scenes and songs from the musical theater genre. The course continues to develop skills and techniques learned in DRAMA-170, with emphasis on singing, acting, blocking, and choreographed dance movement. Students will analyze and prepare musical theater materials including ballads, up-tempo, duets, trios, and group songs, and will continue to introduce students to a body of musical theater literature, composers, lyricists, and librettists. 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  
This course provides a theoretical as well as a practical overview of the elements of technical theater. Safety precautions, stage management, stage design, scenery, lighting, sound, acting, make-up, and costuming are among the topics to be presented. The course will also cover possible job opportunities in technical 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 in 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 provides students the opportunity to practice skills learned in DRAMA-130. Students will prepare and direct 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. CSU, UC
DRAMA-260  Technical Theater Practicum
1-2 units  SC
• May be repeated three times
• Variable hours
• Limitation on enrollment: Interview with instructor and student director required. Specific days and times are announced in the Schedule of Classes.
• Recommended: DRAMA-200 and 201 or equivalent
• Note: This is an open-entry, open-exit course.
This course allows technical theater students to receive practical experience through participation in student-directed projects. CSU, UC

DRAMA-270  Stage Production
1-2 units  SC
• May be repeated three times
• Variable hours
• Limitation on enrollment: Audition required. Specific days and times are announced in the Schedule of Classes.
• Recommended: DRAMA-122 or equivalent
• Note: This is an open entry, open exit course.
After audition and evaluation the students participate in a full-length stage production, with emphasis on rehearsal, character development and collaborative production techniques. All projects will 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-295  Occupational Work Experience Education in DRAMA
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in DRAMA-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
DRAMA-295 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. Five hours work per week or forty-five hours work per term is equal to one unit (paid) or one unit for forty hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

DRAMA-296  Internship in Occupational Work Experience Education in DRAMA
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in the DRAMA-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
DRAMA-296 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. Five hours work per week or forty-five hours work per term is equal to one unit (paid) or one unit for forty hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

DRAMA-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

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-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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. apply the principles of anti-bias pedagogy.
H. apply observation and assessments to create appropriate environments.
I. apply positive guidance skills with young children.
J. apply constructivist theory and intentional teaching methodologies to teacher child interactions.

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.
**Associate in science in early childhood education for transfer**

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. apply the principles of anti-bias pedagogy.

H. apply observation and assessments to create appropriate environments.

I. apply positive guidance skills with young children.

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 and 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 a 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.

### Certificate of achievement

**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 the principles and ideals of the Early Childhood Education Profession.

D. assess how socializing agents and culture impact the lives of children and families.

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.
Early childhood education

required courses:  
ECE-123  Introduction to Curriculum in Early Childhood Education ..................................... 3  
ECE-124  Child Development and Psychology ................................................................. 3  
ECE-125  Principles and Practices of Early Childhood Education ....................................... 3  
ECE-130  Child, Family, and Community ......................................................................... 3  

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. apply the principles of anti-bias pedagogy.  
H. apply observation and assessments to create appropriate environments.  
I. apply positive guidance skills with young children.  
J. apply constructivist theory and intentional teaching methodologies to teacher child interactions.

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.

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. apply the principles of anti-bias pedagogy.  
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.  
K. apply constructivist theory and intentional teaching methodologies to teacher child interactions.

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.

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:  

<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 Education</td>
<td>3</td>
</tr>
<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 Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-126</td>
<td>Health, Safety, and Nutrition for the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ECE-128</td>
<td>Advanced Curriculum Development in ECE</td>
<td>3</td>
</tr>
<tr>
<td>ECE-130</td>
<td>Child, Family, and Community</td>
<td>3</td>
</tr>
<tr>
<td>ECE-144</td>
<td>Diversity in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-249</td>
<td>Observation and Assessment in the Classroom</td>
<td>4</td>
</tr>
<tr>
<td>ECE-250</td>
<td>Practicum in Early Childhood Education</td>
<td>4</td>
</tr>
<tr>
<td>ECE-253</td>
<td>Adult Supervision and Mentoring in Early Childhood Classrooms</td>
<td>2</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>
</tbody>
</table>

or one course from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-155</td>
<td>Ceramic Sculpture I</td>
<td>3</td>
</tr>
<tr>
<td>ART-160</td>
<td>Photography I</td>
<td>3</td>
</tr>
<tr>
<td>DRAMA-150</td>
<td>Children's Theater</td>
<td>3</td>
</tr>
<tr>
<td>KNDAN-100</td>
<td>Introduction to Dance</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-110A</td>
<td>Ballet Fundamentals I</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-130A</td>
<td>Modern Dance Fundamentals I</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNCAN-160A</td>
<td>Tap Dance I</td>
<td>0.5-2</td>
</tr>
<tr>
<td>MUSIC-101</td>
<td>Beginning Guitar</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-102</td>
<td>Intermediate Guitar</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-112</td>
<td>America's Music -- A Multicultural Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MUSCI-150</td>
<td>Beginning Piano I</td>
<td>1</td>
</tr>
<tr>
<td>MUSCI-151</td>
<td>Beginning Piano II</td>
<td>1</td>
</tr>
<tr>
<td>MUSCI-171</td>
<td>Jazz and Popular Solo Voice</td>
<td>1</td>
</tr>
</tbody>
</table>

science and math

<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-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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE-129</td>
<td>Dealing with Difficult and Aggressive Young Children</td>
<td>3</td>
</tr>
<tr>
<td>ECE-269</td>
<td>Children with Special Needs</td>
<td>3</td>
</tr>
<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>
<tr>
<td>SPEDU-101</td>
<td>Introduction to Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>SPEDU-102</td>
<td>Historical Perspectives of Disabilities and the Law</td>
<td>3</td>
</tr>
<tr>
<td>SPEDU-103</td>
<td>Classroom Strategies for the Special Education Paraeducator</td>
<td>3</td>
</tr>
</tbody>
</table>

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.
Early childhood education

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.
M. examine theory and methodology for effective supervision.

This certificate meets the education requirements for the site supervisor level of the Child Development Permit 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: 45 units
The same courses as required for the Early Childhood Education Teacher Certificate...

plus 8 units:
ECE-251 Administration I: Programs in Early Childhood Education................................................. 3
ECE-252 Administration II: Personnel and Leadership in ECE......................................................... 3
ECE-253 Adult Supervision and Mentoring in Early Childhood Classrooms .................................. 2

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. apply the principles of anti-bias pedagogy.
H. apply observation and assessments to create appropriate environments.
I. apply positive guidance skills with young children.
J. apply constructivist theory and intentional teaching methodologies to teacher child interactions.

This certificate meets the education requirements for the teacher level of the Child Development Permit 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: 45 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:
genral education courses.................................................................................................................. 16
(At least one course each from humanities, social science, science or math, and English)

total minimum required units 53
ECE-100 Essential Life Skills of Childhood
1-3 units P/NP
- Variable hours
- Note: One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six hours per week. Participation in the Developmental Children's Center Laboratory School or approved off-campus mentor site is required for laboratory hours. All students enrolled in laboratory must have a negative TB test and verified immunizations against pertussis, measles and influenza (waiver allowed for influenza).

This course explores essential life skills developed during childhood that make a lifelong difference in our ability to learn, communicate and cope with challenges. Drawing from research in child development and neuroscience, this course outlines practical ways people working with children can foster these skills in young children. CSU

ECE-101 Media and the Developing Child
1-3 units P/NP
- Variable hours
- Note: One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six hours per week. Participation in the Developmental Children's Center Laboratory School or approved off-campus mentor site is required for laboratory hours. All students enrolled in laboratory must have a negative TB test and verified immunizations against pertussis, measles and influenza (waiver allowed for influenza).

This class investigates popular media and implications for the developing child. Focus is on the impact of media on personality, cognition, social attributes and health. Strategies for assessing media and using it effectively will be explored. CSU

ECE-102 Childhood and Nature
1-3 units P/NP
- Variable hours
- Note: One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six hours per week. Participation in the Developmental Children's Center Laboratory School or approved off-campus mentor site is required for laboratory hours. All students enrolled in laboratory must have a negative TB test and verified immunizations against pertussis, measles and influenza (waiver allowed for influenza).

This course explores the vital role of children's ongoing experiences with nature as a basis for creativity, problem solving, critical thinking and physical and emotional well-being. It introduces multiple resources and practical hands-on activities that support child-nature connections. CSU

ECE-103 Brain Development in Childhood
1-3 units P/NP
- Variable hours
- Note: One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six hours per week. Participation in the Developmental Children's Center Laboratory School or approved off-campus mentor site is required for laboratory hours. All students enrolled in laboratory must have a negative TB test and verified immunizations against pertussis, measles and influenza (waiver allowed for influenza).

This class studies the neurological connections that form in a child's brain during pregnancy and early childhood and the long-term effects of environmental factors during these formative years. Topics range from the connections between the brain and emotional regulation to the complexity of language acquisition. CSU

ECE-104 Cultural Influences on the Developing Child
1-3 units P/NP
- Variable hours
- Note: One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six hours per week. Participation in the Developmental Children's Center Laboratory School or approved off-campus mentor site is required for laboratory hours. All students enrolled in laboratory must have a negative TB test and verified immunizations against pertussis, measles and influenza (waiver allowed for influenza).

This course explores personality development in young children within the context of culture. The interacting forces that shape personality are discussed. Focus is on the role of caregivers in supporting optimal social-emotional development in young children. CSU

ECE-105 Emotional Intelligence and the Developing Child
1-3 units P/NP
- Variable hours
- Note: One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six hours per week. Participation in the Developmental Children's Center Laboratory School or approved off-campus mentor site is required for laboratory hours. All students enrolled in laboratory must have a negative TB test and verified immunizations against pertussis, measles and influenza (waiver allowed for influenza).

This course explores the development of children's emotional intelligence. The interacting forces that shape emotional intelligence are discussed. Focus is on the role of caregivers in supporting optimal emotional intelligence development in young children. CSU
### ECE-106  Child Behavior: Is This Normal?

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Variable hours</td>
<td>- Note: One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six hours per week. Participation in the Developmental Children's Center Laboratory School or approved off-campus mentor site is required for laboratory hours. All students enrolled in laboratory must have a negative TB test and verified immunizations against pertussis, measles and influenza (waiver allowed for influenza). This course explores a broad range of behaviors in young children. Child development information, resources, and suggestions for addressing specific behavior issues will be presented. CSU</td>
</tr>
</tbody>
</table>

### ECE-123  Introduction to Curriculum in Early Childhood Education

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>LR</td>
<td>- 54 hours lecture per term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Prerequisite: ECE-124 or equivalent (may be taken concurrently)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Recommended: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Note: Meets the Department of Social Services licensing requirement for DSS III Program and Curriculum Development</td>
</tr>
</tbody>
</table>

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 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

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>SC</td>
<td>- 54 hours lecture per term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Recommended: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Note: Meets the State Department of Social Services licensing requirement for DSS I Child/Human Growth and Development</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>SC</td>
<td>- 54 hours lecture per term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Prerequisite: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>SC</td>
<td>- 54 hours lecture per term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Prerequisite: Eligibility for ENGL-122 or equivalent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Note: Meets the State Department of Social Services licensing requirement for DSS VII, Health and Safety</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Units</th>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>SC</td>
<td>- 54 hours lecture per term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Co-requisite: ECE 124 or equivalent (may be taken previously)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Recommended: ECE-123 and eligibility for ENGL-122 or equivalents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development</td>
</tr>
</tbody>
</table>

This advanced course will focus on new trends, approaches and techniques in early childhood education curriculum. Students will explore and practice various early childhood education curriculum approaches. CSU
ECE-129  Dealing with Difficult and Aggressive Young Children
3 units  SC
- 54 hours lecture per term
- Co-requisite: ECE-124 or equivalent (may be taken previously)
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Meets the State Department of Social Services licensing requirement for DSS III Program and Curriculum Development

This course is designed to examine the reasons for children’s difficult and aggressive behaviors. Strategies for prevention and intervention in the classroom and home will be studied. CSU

ECE-130  Child, Family, and Community
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Meets the State Department of Social Services licensing requirements for DSS II, Child, Family, and Community

An introduction to the issues involved in early childhood education related to the entire learning environment of a child with emphasis on the family and community. Examination of the impact of family systems and culture on children’s development will occur. Study of community and society as it impacts the family and the child with an introduction to community resources available to support contemporary family life. C-ID CDEV 110, CSU

ECE-144  Diversity in Early Childhood Education
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Meets the State Department of Social Services licensing requirements for DSS III, Program and Curriculum Development

This course examines biases regarding race, gender, culture, disability, class, and age in order to prepare students to work within diverse classrooms and communities. Through this examination students gain knowledge of experiences and perspectives other than their own, therefore, increasing tolerance, respect for, and interaction among people from diverse populations. C-ID ECE 230, CSU

ECE-150  Topics in Child Development
1-3 units  P/NP
- Variable hours
- Note: TB clearance required for any laboratory work. Participation in Developmental Children’s Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Required of parents whose children are enrolled in Developmental Children’s Center.

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

ECE-151  Topics in Cognitive Development
1-3 units  P/NP
- Variable hours
- Note: TB clearance required for any laboratory work. Participation in Developmental Children’s Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week.

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

ECE-152  Topics in Physical Development
1-3 units  P/NP
- Variable hours
- Note: TB clearance required for any laboratory work. Participation in Developmental Children’s Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week.

A supplemental course in physical development in the child through age six to provide a study of current concepts and problems in physical development and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-153  Topics in the Role of Play in Development
1-3 units  P/NP
- Variable hours
- Note: TB clearance required for any laboratory work. Participation in Developmental Children’s Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week.

A supplemental course in the role of play in development to provide a study of current concepts and problems in play development and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-154  Topics in Personality Development
1-3 units  P/NP
- Variable hours
- Note: TB clearance required for any laboratory work. Participation in Developmental Children’s Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units. One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week.

A supplemental course in personality development to provide a study of current concepts and problems in personality development and related subdivisions. Specific topics will be announced in the schedule of classes. CSU
ECE-155  Topics in Child Behavior
1-3 units  P/NP
  • Variable hours
  • Note: TB clearance required for any laboratory work.
  Participation in Developmental Children’s Center Laboratory School or approved off-campus mentor site from 3 to 6 hours per week is required for 2 or 3 units.
  One unit: lecture only. Two units: lecture plus three laboratory hours per week. Three units: lecture plus six laboratory hours per week.
A supplemental course in child behavior to provide a study of current concepts and problems in behavior and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-220  Programs for the School Age Child
3 units  SC
  • 54 hours lecture per term
  • Recommended: Eligibility for ENGL-122 or equivalent
This course is an overview of the developmental tasks and needs of the child between the ages of six and twelve covering fundamentals of planning, implementing, and evaluating programs for the school-aged child. Special consideration will be given to working with schools, community, and parents. CSU

ECE-230  Developmentally Appropriate Practice for Infants and Toddlers
3 units  SC
  • 54 hours lecture per term
  • Recommended: ECE-124 and eligibility for ENGL-122 or equivalents
  • Note: Meets the State Department of Social Services licensing requirement for DSS IV, Infant Care and Development
This course applies current theory and research to the care and education of infants and toddlers in group settings. It examines 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. CSU

ECE-231  Infant and Toddler Development
3 units  SC
  • 54 hours lecture per term
  • Recommended: ECE-124, ECE-230 and eligibility for ENGL-122 or equivalents
This course studies the physical, cognitive, linguistic, social, and emotional development and growth of infants and toddlers. Students will apply current research and developmental theory to infant and toddler behavior. Emphasis is placed on the role of the family and relationships. CSU

ECE-237  Current Topics in Early Childhood Education
.5-3 units  SC
  • Variable hours
  • Recommended: Eligibility for ENGL-122 or equivalent
  • Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development, if taken for 3 units, and the course is a curriculum course
A supplemental course in child development to provide a study of current concepts and problems in the major theories of child development including their philosophical bases, their techniques and their materials and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

ECE-240  Language and Literacy for the Young Child
3 units  SC
  • 54 hours lecture per term
  • Recommended: Eligibility for ENGL-122 or equivalent
This course is an introduction to young children’s literature, emergent literacy and the development of speech and language during infancy and early childhood. Students will explore teaching techniques which promote language, literacy and literature for the young child. Approaches to reading books, storytelling, story writing, etc. will be introduced and practiced. CSU

ECE-241  Science and Mathematics for Early Childhood Education
3 units  SC
  • 54 hours lecture per term
  • Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development
This course explores how science, mathematics, the physical and the natural world are integrated into early childhood education curricula. Students will create science and math experiences, select appropriate materials, and learn specific scientific and mathematical techniques for working with young children. The course focuses on tapping into children’s natural curiosity by utilizing observation, reasoning skills, inquiry and hands-on, playful experiences. CSU

ECE-242  Music for the Young Child
1 unit  SC
  • 18 hours lecture per term
  • Recommended: Eligibility for ENGL-122 or equivalent
  • Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development
This course is an exploration of media and techniques that enable the teacher to plan, conduct, and evaluate music and movement activities for the young child. Experiences in the integration of music, movement, and language as related to conceptual and sensory motor development are covered. CSU
ECE-243  Creative Art for the Young Child  
1 unit  SC  
- 18 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development  

A study of the developmental stages of children's artistic expression. Includes an exploration of creative art activities along with developing and implementing a creative arts curriculum for the young child. CSU

ECE-244  Circle Time Activities  
1 unit  SC  
- 18 hours lecture per term  

This course is designed to present the value of circle or group time for young children. Written materials, demonstrations, lecture and discussions, and sharing of student experiences are utilized to teach practical and theoretical application of songs, stories, games, finger plays and other circle time activities. CSU

ECE-249  Observation and Assessment in the Classroom  
4 units  SC  
- 54 hours lecture/54 hours laboratory by arrangement per term  
- Prerequisite: ECE-124 or equivalent  
- Co-requisite: ECE-125 or equivalent (may be taken previously)  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: TB clearance required for students to participate in laboratory work at DVC Children's Center or approved mentor site. Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development.

This course focuses on the appropriate use of assessment and observation strategies to document development, growth, play and learning in early childhood education settings. Students will utilize practical classroom experiences to apply a variety of observation methodologies including, child portfolios, recording strategies, rating systems, and multiple assessment tools. Within the context of the DVC Children's Center or an approved mentor site, students will explore the connections between developmental theory and practical usage of reflective observation. C-ID ECE 200, CSU

ECE-250  Practicum in Early Childhood Education  
4 units  SC  
- 36 hours lecture/108 hours laboratory by arrangement per term  
- Prerequisite: ECE-123, ECE-124, ECE-125 and ECE-249 or equivalents  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: Required TB clearance for students participating in laboratory work. Meets the State Department of Social Services licensing requirement for DSS III, Program and Curriculum Development.

A supervised practicum study of developmentally appropriate early childhood teaching competencies. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors, and build a comprehensive understanding of children and families. Child centered, play-oriented approaches to teaching, learning, and assessment, and knowledge of curriculum content areas will be emphasized. Student teachers design, implement and evaluate learning activities and environments. Focus is on reflective teaching and developing in-depth curriculum projects based on on-going observations of children. C-ID ECE 210, CSU

ECE-251  Administration I: Programs in Early Childhood Education  
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

This course presents an introduction to the administration of early childhood programs (ECE). Topics include program types, budget, management, regulations, laws, development and implementation of policies and procedures. Administrative tools, philosophies, and techniques needed to organize, open, and operate an early care and education program will be examined. CSU

ECE-252  Administration II: Personnel and Leadership in ECE  
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 provides an overview of effective strategies for personnel management and leadership in early care and education settings. Focus is on the human relations aspects of successful administration. Topics include legal and ethical responsibilities, supervision techniques, professional development, and reflective practices for a diverse and inclusive early care and education program. 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  Children with Special Needs
3 units  SC
• 54 hours lecture per term
• Recommended: ECE-124 and eligibility for ENGL-122 or equivalents
This course provides an introduction to the variations in development of children with special needs, as well as the resulting impact on families, and will focus on the years between birth through aged eight. An overview of historical and societal influences, laws relating to children with special needs, and the identification and referral process will also be discussed. CSU

ECE-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in arts in economics for transfer
Students completing the program will be able to...
A. apply economic theories and economic reasoning to real life situations.
B. use analytical techniques to measure economic conditions related to the individual, business firms, industries, and economic systems.
C. explain the role that households, business organizations, governments, and the international sector, play in free markets, command economies, and mixed economies.
D. evaluate the objectives, limitations, and mechanics of regulation, taxation, tariffs, quotas, and monetary and fiscal policies.
E. use quantitative methodology to measure economic outcomes.

The associate in arts in economics 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-Breadth pattern (CSU GE-Breadth); 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 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 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.

<table>
<thead>
<tr>
<th>major requirements:</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON-220 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-221 Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>BUS-240 Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH-142 Elementary Statistics with Probability</td>
<td>4</td>
</tr>
<tr>
<td>plus at least 4 units from:</td>
<td></td>
</tr>
<tr>
<td>MATH-182 Calculus for Management, Life Science and Social Science I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-192 Analytic Geometry and Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>BUS-294 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUSAC-186 Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUSAC-187 Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>MATH-181 Finite Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH-193 Analytic Geometry and Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>plus at least 3 units from any course above not already used or:</td>
<td></td>
</tr>
<tr>
<td>ECON-101 Economics of Public Issues</td>
<td>3</td>
</tr>
<tr>
<td>ECON-200 Introduction to Economics</td>
<td>3</td>
</tr>
<tr>
<td>MATH-194 Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH-292 Analytic Geometry and Calculus III</td>
<td>5</td>
</tr>
</tbody>
</table>

| total minimum required units | 19 |

---

**ECON-200 Introduction to Economics**

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

This course is a survey of the basic principles of economics, including both microeconomics and macroeconomics. Concepts such as market supply and demand, market structures, resource markets, business cycles, fiscal policy, the Federal Reserve System, and international trade are introduced. 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

This course provides an introduction 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 applies macroeconomic theories to current economic issues. C-ID ECON 202, 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. C-ID ECON 201, CSU, UC

---

**ECON-101 Economics of Public Issues**

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

This course examines economic aspects of selected current public issues such as price controls, crime, education, poverty, pollution, international trade, and taxes. It will analyze 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-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 is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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 a baccalaureate degree at a minimum.

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.

Associate in arts in elementary teacher education for transfer
Students completing this program will be able to...
A. analyze models and methods of effective teaching, especially in relation to the needs of a diverse student body.
B. examine the physical, cognitive/language, social-emotional milestones in school age children.
C. understand and analyze how concepts of mathematics, English and language arts, social studies, visual and performing arts and sciences apply to teaching at an elementary level.

The associate in arts in elementary teacher education for transfer is an interdisciplinary program which meets state guidelines in order to prepare students to begin their path toward becoming elementary school teachers. Students majoring in elementary teacher education develop critical thinking, problem solving, and written and verbal communication skills. As elementary teacher education majors, students have learning opportunities that are relevant to many types of careers working with children and parents including special education, elementary education, and social work. This major provides early field work experience working with children in an elementary school.

The associate in arts in elementary teacher 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. The associate in arts in elementary teacher education for transfer is consistent with the mission of the community college to assist students in achieving a seamless transfer to the CSU system.

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.
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 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>
<th>Course</th>
<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>COMM-120</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-120</td>
<td>Introduction to Teaching in Elementary Schools</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-122</td>
<td>Freshman English: Composition and Reading</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-123</td>
<td>Critical Thinking: Composition and Literature</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-135</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOL-130</td>
<td>Earth Science</td>
<td>4</td>
</tr>
<tr>
<td>HIST-120</td>
<td>History of the United States before 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-180</td>
<td>World History to 1500</td>
<td>3</td>
</tr>
<tr>
<td>MATH-125</td>
<td>Mathematical Concepts for Elementary School Teachers</td>
<td>3</td>
</tr>
<tr>
<td>POLSC-121</td>
<td>Introduction to United States Government</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>at least 4 units from:</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM-106</td>
<td>Chemistry for Non-Science Majors</td>
</tr>
<tr>
<td></td>
<td>CHEM-108</td>
<td>Introductory Chemistry</td>
</tr>
<tr>
<td></td>
<td>at least 3 units from:</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>COMM-121</td>
<td>Persuasion and Critical Thinking</td>
</tr>
<tr>
<td></td>
<td>ENGL-126</td>
<td>Critical Thinking: The Shaping of Meaning in Language</td>
</tr>
<tr>
<td></td>
<td>HIST-122</td>
<td>Critical Reasoning in History</td>
</tr>
<tr>
<td></td>
<td>PHILO-130</td>
<td>Logic and Critical Thinking</td>
</tr>
<tr>
<td></td>
<td>PSYCH-145</td>
<td>Critical Thinking in Psychology</td>
</tr>
<tr>
<td></td>
<td>SOCIO-122</td>
<td>Critical Thinking About Social and Cultural Issues</td>
</tr>
<tr>
<td></td>
<td>plus at least 3 units from:</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DANCE-201</td>
<td>Western Culture Dance History: 20th Century to Present</td>
</tr>
<tr>
<td></td>
<td>DRAMA-139</td>
<td>Introduction to Theater</td>
</tr>
<tr>
<td></td>
<td>MUSIC-110</td>
<td>Music Appreciation</td>
</tr>
</tbody>
</table>

**Total Minimum Required Units:** 52

---

### EDUC-120 Introduction to Teaching in Elementary Schools

3 units LR
- 36 hours lecture/54 hours laboratory by arrangement per term
- Limitation on enrollment: Current TB clearance and background check required. A fee for service will be charged for the background check. See the schedule of classes for specific information.
- Recommended: ENGL-122 or equivalent
- Note: Credit by examination option available

This course introduces students to the concepts and issues related to teaching diverse learners in today’s contemporary schools, pre-kindergarten through grade twelve. Topics include teaching as a profession and career, historical and philosophical foundations of the United States’ education system, contemporary educational issues, California’s content standards and frameworks and teacher performance standards. In addition to lecture, this course requires structured fieldwork in public school elementary classrooms that represent California’s diverse student population, and includes cooperation with at least one carefully selected and campus-approved certificated classroom teacher. C-ID EDUC 200, CSU, UC

---

### 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-level Student Learning Outcomes**

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).
Electrical/electronics technology

Associate in science degree
Electrical/electronics technology

Students completing the program will be able to...
A. identify common electrical circuit components and their use.
B. solve AC and DC Circuits for Voltage, Current, Resistance, Power, and other parameters.
C. operate and understand common laboratory instruments used in the analysis, construction, and troubleshooting of AC and DC circuits.
D. apply specific sections of the national electrical code to electrical systems.

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, 130, 220, 230, 266, 267, 271, ELTRN-210 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.

**required courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-266</td>
<td>Electrical Codes: Articles 90-398.................3</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-120</td>
<td>Direct Current Circuits..........................4</td>
</tr>
<tr>
<td>ELTRN-120</td>
<td>Direct Current Circuits..........................4</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-121</td>
<td>Alternating Current Circuits....................4</td>
</tr>
<tr>
<td>ELTRN-121</td>
<td>Alternating Current Circuits....................4</td>
</tr>
</tbody>
</table>

plus at least 12 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-130</td>
<td>Motors and Motor Controllers....................4</td>
</tr>
<tr>
<td>ELECT-220</td>
<td>Circuit Diagnosis and Analysis: Troubleshooting ........................................2</td>
</tr>
<tr>
<td>ELECT-230</td>
<td>Electro-Mechanical Equipment.....................2</td>
</tr>
<tr>
<td>ELECT-271</td>
<td>Programmable Logic Controllers..................4</td>
</tr>
<tr>
<td>ELTRN-210</td>
<td>Linear Circuits..................................4</td>
</tr>
</tbody>
</table>

plus at least 3 units from any course not used above, or:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT-103</td>
<td>Voice, Video and Network Cabling...............2</td>
</tr>
<tr>
<td>CONST-110</td>
<td>Occupational Safety................................2</td>
</tr>
<tr>
<td>ELECT-267</td>
<td>Electrical Codes: Articles 400-830..............3</td>
</tr>
<tr>
<td>ELTRN-107</td>
<td>Introduction to Robotics........................2</td>
</tr>
<tr>
<td>ELTRN-116</td>
<td>Electronics I....................................3</td>
</tr>
</tbody>
</table>

**total minimum required units** 26

Certificate of achievement
Electrical/electronics technology

Students completing the program will be able to...
A. identify common electrical circuit components and their use.
B. solve AC and DC Circuits for Voltage, Current, Resistance, Power, and other parameters.
C. operate and understand common laboratory instruments used in the analysis, construction, and troubleshooting of AC and DC circuits.
D. apply specific sections of the national electrical code to electrical systems.

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, 130, 220, 230, 266, 267, 271, ELTRN-210 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:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-266</td>
<td>Electrical Codes: Articles 90-398.................3</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-120</td>
<td>Direct Current Circuits..........................4</td>
</tr>
<tr>
<td>ELTRN-120</td>
<td>Direct Current Circuits..........................4</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-121</td>
<td>Alternating Current Circuits....................4</td>
</tr>
<tr>
<td>ELTRN-121</td>
<td>Alternating Current Circuits....................4</td>
</tr>
</tbody>
</table>

plus at least 12 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-130</td>
<td>Motors and Motor Controllers....................4</td>
</tr>
<tr>
<td>ELECT-220</td>
<td>Circuit Diagnosis and Analysis: Troubleshooting ........................................2</td>
</tr>
<tr>
<td>ELECT-230</td>
<td>Electro-Mechanical Equipment.....................2</td>
</tr>
<tr>
<td>ELECT-271</td>
<td>Programmable Logic Controllers..................4</td>
</tr>
<tr>
<td>ELTRN-210</td>
<td>Linear Circuits..................................4</td>
</tr>
</tbody>
</table>

plus at least 3 units from any course not used above, or:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT-103</td>
<td>Voice, Video and Network Cabling...............2</td>
</tr>
<tr>
<td>CONST-110</td>
<td>Occupational Safety................................2</td>
</tr>
<tr>
<td>ELECT-267</td>
<td>Electrical Codes: Articles 400-830..............3</td>
</tr>
<tr>
<td>ELTRN-107</td>
<td>Introduction to Robotics........................2</td>
</tr>
<tr>
<td>ELTRN-116</td>
<td>Electronics I....................................3</td>
</tr>
</tbody>
</table>

**total minimum required units** 26
Certificate of accomplishment
Electrical/electronics technology

Students completing the program will be able to...

A. identify common electrical circuit components and their use.
B. solve AC and DC Circuits for Voltage, Current, Resistance, Power, and other parameters.
C. operate and demonstrate understanding of common laboratory instruments used in the analysis, construction, and troubleshooting of AC and DC circuits.
D. apply specific sections of the national electrical code to electrical systems.

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.

required courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-266</td>
<td>Electrical Codes: Articles 90-398</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-120</td>
<td>Direct Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELTRN-120</td>
<td>Direct Current Circuits</td>
<td>4</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-121</td>
<td>Alternating Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELTRN-121</td>
<td>Alternating Current Circuits</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total minimum required units**: 11

---

**ELECT-110 Introduction to Electricity**
2 units SC

- 27 hours lecture/27 hours laboratory per term
- Recommended: MATH-090 or MATH-090E or MATH-090SP or equivalent
- Note: This course is not a requirement for the electronics/electricity sequence.

This is an introductory course in electrical concepts, components, systems, and equipment. Ohm’s and Kirchoff’s laws are used to calculate and measure resistance, voltage, amperage, and power in circuits. AC components, such as coils, transformers, capacitors, and motors are also covered. Students will build and measure circuits and everyday electrical devices using both digital and analog equipment. Emphasis is placed on practical aspects of circuits and components. CSU

**ELECT-120 Direct Current Circuits**
4 units LR

- 54 hours lecture/54 hours laboratory per term
- Note: This course is approved by the Division of Apprenticeship Standards in the electrician trainee program.

This course introduces scientific principles and hands-on applications of direct current (DC) electricity, focusing on measurement and diagnosis of series, parallel, and combination circuits. These fundamental knowledge and skills are necessary for those planning careers and/or further study in electronics, electricity, or related fields, such as heating, ventilation, and air conditioning (HVAC), building systems, industrial maintenance, electrical/electronics (EE) technology, and energy systems. CSU

**ELECT-121 Alternating Current Circuits**
4 units LR

- 54 hours lecture/54 hours laboratory per term
- Recommended: ELECT-120 or equivalent
- Note: This course is approved by the Division of Apprenticeship Standards in the electrician trainee program.

This course is an in-depth study of the theory and application of alternating current (AC) including series, parallel, and combination resistive/inductive (RL), resistive/capacitive (RC), and resistive/inductive/capacitive (RLC) circuits. CSU

**ELECT-130 Motors and Motor Controllers**
4 units SC

- 54 hours lecture/54 hours laboratory per term
- Recommended: ELECT-120 or equivalent

This course introduces the function, operation and characteristics of various types of direct current, alternating current, single phase and three phase motors. The course will explore the basic principles and practices of electric motor control including electro-mechanical and solid state digital devices, ladder logic, standard circuits, starters, transformers, relays, timers, and other devices. 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-220  Circuit Diagnosis and Analysis: Troubleshooting
2 units  SC
• 27 hours lecture/27 hours laboratory per term
• Prerequisite: ELECT-120 and ELECT-121 or equivalents
This course presents troubleshooting of electro-mechanical systems and sub-systems for various machines and equipment used in residences, commercial buildings, and industrial complexes. Emphasis is placed on developing skill in reading and understanding diagrams in conjunction with proper troubleshooting procedures. Several types of diagrams will be examined during this course including Block, Pictorial, One-line, Wiring, Pictorial, Terminal, Schematic, Esterline, and more. CSU

ELECT-230  Electro-Mechanical Equipment
2 units  SC
• 27 hours lecture/27 hours laboratory per term
• Prerequisite: ELECT-120 and ELECT-121 or equivalents
This course presents the identification, installation, operation, and maintenance of residential/commercial/industrial systems and components. The focus is on electrical components and systems, which are related to interface devices such as mechanical, hydraulic, and pneumatic systems and their controllers. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
This course covers the interpretation of the National Electrical Code (NEC) for general requirements, wiring and protection, wiring methods and materials (articles 90-398). Safety installation practices will be presented.

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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
This course covers the interpretation of the National Electrical Code (NEC) for equipment for general use, special occupancies and special equipment (articles 400-830). Safety installation practices will be presented.

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-107  Introduction to Robotics
2 units  SC
• 27 hours lecture/27 hours laboratory per term
• Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree. Credit by examination option available.
This course introduces the science and technology involved in robotic systems. Beyond basic science, topics include input and output devices and programmable controllers and programming coding. Working independently or in teams, students will design and build circuits and kinematic structures that sense and interact with their environment. Using simple programming languages, students will work with a variety of microprocessors, including Arduino, Parallax, VEX, Lego, and others. This course prepares students for more advanced studies in robotics and related technologies, such as those used in building controls systems and industrial applications. CSU

ELTRN-116  Electronics I
3 units  SC
• 45 hours lecture/27 hours laboratory per term
• Note: Credit by examination option available.
This course is an overview of electronic circuit fundamentals and devices. Students will construct, analyze, verify, and troubleshoot common electronic circuits using appropriate techniques and test equipment. CSU
ELTRN-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, including use of software to simulate electrical circuits. CSU

ELTRN-121  Alternating Current 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-210  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
• Formerly ELTRN-102B
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-299  Student Instructional Assistant
.5-3 units   SC
• Variable hours
• Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.
Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

ENERGY SYSTEMS – ENSYS
Tish Young, Dean
Physical Sciences and Engineering Division
Physical Sciences Building, Room 263

Possible career opportunities
An area of increasing job opportunities is in the various fields of alternate or renewable energy. This includes areas related to solar photovoltaics, solar water heating, wind energy systems, biodiesel and biofuels, biomass, fuel cells and related hydrogen energy devices and other small technologies. Most of the jobs in these areas are involved with the installation, design or maintenance of these systems. Most of these areas require skills in electricity, science, and math.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree
Energy systems
Students completing the program will be able to...
A. identify, measure, and analyze the major energy uses in typical businesses operations, focusing beyond the building and into processes.
B. demonstrate the electrical and energy systems skills to successfully interact with builders, architects, engineers, and constructors and advise on building and systems energy use.
C. design medium complexity solar photovoltaic or other energy system for medium size commercial buildings and processes.

This program provides students with a broad view of energy and energy systems and specific skills for those planning on entering the field designing, installing, servicing/repairing and maintaining renewable/sustainable energy systems. This includes wind energy, biodiesel and biofuels, biomass, fuel cells, hydrogen, and other technologies.

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.

major requirements: units
ENSYS-120  Introduction to Energy Systems .................. 3
ENSYS-125  Building Envelope and Systems .................. 3
ENSYS-130  Photovoltaic Systems Design and Installation ........................................... 2
ENSYS-230  Advanced Photovoltaic Systems .................. 2
Energy systems

plus at least 4 units from:
ELECT-120  Direct Current Circuits ........................................ 4
ELTRN-120  Direct Current Circuits ........................................ 4

plus at least 12 units from:
ARCHI-207  Environmental Control Systems .......................... 3
CONST-110  Occupational Safety ......................................... 2
CONST-183  Title 24: Energy Conservation Codes .................. 3
ELECT-121  Alternating Current Circuits .............................. 4
ELECT-266  Electrical Codes: Articles 90-398 ......................... 4
ELECT-267  Electrical Codes: Articles 400-830 ....................... 3
ENSYS-260  Solar Photovoltaic and Thermal Installation
            Techniques ...................................................... 2

total minimum required units 26

Certificate of accomplishment

Energy systems

Students completing the program will be able to...

A. identify, measure, and analyze the major energy uses in typical businesses operations, focusing beyond the building and into processes.

B. demonstrate the electrical and energy systems skills to successfully interact with builders, architects, engineers, and contractors and advise on building and systems energy use.

C. design medium complexity solar photovoltaic or other energy system for medium size commercial buildings and processes.

This program provides students with a broad view of energy systems, and specific entry-level skills for those planning on entering the field of installing, servicing/repairing and maintaining renewable/sustainable energy systems with a focus on photovoltaic systems. Technologies include wind energy, biodiesel and biofuels, biomass, fuel cells, hydrogen, and other technologies.

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.

required courses:  

- ENSYS-120  Introduction to Energy Systems ...................... 3
- ENSYS-125  Building Envelope and Systems ...................... 3
- ENSYS-130  Photovoltaic Systems Design and Installation ... 2
- ENSYS-230  Advanced Photovoltaic Systems .................... 2

plus at least 4 units from:
ELECT-120  Direct Current Circuits ........................................ 4
ELTRN-120  Direct Current Circuits ........................................ 4

total minimum required units 14

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

plus at least 12 units from:
ARCHI-207  Environmental Control Systems .......................... 3
CONST-110  Occupational Safety ......................................... 2
CONST-183  Title 24: Energy Conservation Codes .................. 3
ELECT-121  Alternating Current Circuits .............................. 4
ELECT-266  Electrical Codes: Articles 90-398 ......................... 3
ELECT-267  Electrical Codes: Articles 400-830 ....................... 3
ENSYS-260  Solar Photovoltaic and Thermal Installation
            Techniques ...................................................... 2

total minimum required units 26
### ENSYS-125 Building Envelope and Systems
3 units SC
- 45 hours lecture/27 hours laboratory per term
- Recommended: ENSYS-120 or equivalent and MATH-090 or MATH-090E or MATH-090SP or equivalent

This course provides an introduction to buildings and building systems, including the envelope and major electromechanical equipment used in the building. Students will gain knowledge of and experience with various strategies and tools used to measure and analyze building energy use such as infrared thermography, duct and envelope leak testers, light and sound meters, energy analysis programs. Mitigation strategies to save energy and improve occupancy health are emphasized. 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-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 and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

### ENSYS-230 Advanced Photovoltaic Systems
2 units LR
- 27 hours lecture/27 hours laboratory per term
- Recommended: ENSYS-130 and ELECT-122 or equivalents

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

---

### 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.

**Program-level student learning outcomes**
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).
**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. 

E. Students completing this program will be able to analyze the internal forces and moments in statically determinate structures.

The associate in science degree in civil engineering (ASCE) is offered to prepare students to transfer to a four-year institution in the civil engineering major.

The graduates of this program will be able to apply the basic principles of civil engineering to a variety of technical projects related to the design, construction, managing and sustaining of a wide range of developments such as structural systems, buildings, highways, waterways, lifelines, and infrastructures.

The DVC ASCE degree is intended for transfer. Degree requirements at four-year programs differ from institution to institution, so students wishing to transfer to a particular four-year program must consult with a counselor regarding specific major requirements of a particular university program. Additionally, students are advised that other courses in math, physics and chemistry may be required and that engineering courses have science and math prerequisites. It is recommended that the students contact the counseling office for advisement regarding appropriate sequencing.

Finally, the ASCE is a high-unit major; students are advised to meet with a counselor to determine appropriate general education courses to complete their degree requirements.

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

**major requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>ENGIN-110</td>
<td>Introduction to Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-120</td>
<td>Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-230*</td>
<td>Introduction to Circuits and Devices</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-240*</td>
<td>Properties of Engineering Materials</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-255*</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>MATH-192*</td>
<td>Analytic Geometry and Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-193*</td>
<td>Analytic Geometry and Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-292*</td>
<td>Analytic Geometry and Calculus III</td>
<td>5</td>
</tr>
<tr>
<td>MATH-294*</td>
<td>Differential Equations</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-130*</td>
<td>Physics for Engineers and Scientists A: Mechanics and Wave Motion</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230*</td>
<td>Physics for Engineers and Scientists B: Heat and Electro-magnetism</td>
<td>4</td>
</tr>
</tbody>
</table>

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

**Associate in science degree**  
**Electrical engineering and computer engineering**

Students completing the program will be able to...

A. apply analysis tools and computer tools in problem solving.

B. identify interdisciplinary aspects of engineering projects.

C. apply software engineering principles and procedures.

D. do computer algorithm development using C and C+ techniques.

E. understand the operation and control of electrical measuring equipment.

F. use computer programming skills to develop software for automation, decision making and control of equipment.

G. develop test software for evaluation of digital circuits.

H. analyze the operation of small scale digital and analog circuits.

I. design simple operational amplifier circuits.

J. demonstrate knowledge of magnetism and its applications in the design of transformers and actuators.

K. assemble and test digital and analog circuits from circuit diagrams.

The associate degree program in electrical engineering and computer engineering (EECE) prepares the students for a career in the EECE field or to transfer to a four-year degree program. Graduates entering the workforce will be able to perform the tasks typically expected of an assistant engineer. Students who intend to transfer are advised to select general education Option 2 (IGETC) or Option 3 (CSU 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:**  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-120* General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>COMSC-165* Advanced Programming with C and C++</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-210* Program Design and Data</td>
<td></td>
</tr>
<tr>
<td>ENGIN-110 Introduction to Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-230* Introduction to Circuits and Devices</td>
<td>4</td>
</tr>
<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>MATH-294* Differential Equations</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-130* Physics for Engineers and Scientists A: Mechanics and Wave Motion</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230* Physics for Engineers and Scientists B: Heat and Electro-Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-231* Physics for Engineers and Scientists C: Optics and Modern Physics</td>
<td>4</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGIN-120 Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-121 Engineering Drawing/Descriptive Geometry</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-135 Programming for Scientists and Engineers</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-136* Computer Programming for Engineers Using MATLAB</td>
<td>4</td>
</tr>
<tr>
<td>ENGTC-126 Computer Aided Design and Drafting - Auto CAD</td>
<td>3</td>
</tr>
<tr>
<td>MATH-194* Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH-195* Discrete Mathematics</td>
<td>4</td>
</tr>
</tbody>
</table>

**total minimum required units** 55

*Certain courses required for this degree have prerequisite coursework that could add additional units.

**Associate in science degree**  
**Mechanical 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.

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 student contact the counseling office for advisement regarding appropriate sequencing.

Finally, the ASME is a high-unit major; students are advised to meet with a counselor to determine appropriate general education courses to complete their degree requirements.

To earn an ASME degree students must complete each required course for the major with a "C" grade or higher and complete all the requirements as listed in the catalog. Major requirements may be taken only on a “for grade” basis. Certain courses may satisfy both major and general education requirements; however the units are only counted once.

**major requirements:**  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-120* General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>ENGIN-110 Introduction to Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-120 Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-230* Introduction to Circuits and Devices</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-240* Properties of Engineering Materials</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-255* Statics</td>
<td>3</td>
</tr>
<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>MATH-294* Differential Equations</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-130* Physics for Engineers and Scientists A: Mechanics and Wave Motion</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230* Physics for Engineers and Scientists B: Heat and Electro-magnetism</td>
<td>4</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGIN-135 Programming for Scientists and Engineers</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-136* Computer Programming for Engineers Using MATLAB</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-257* Statics and Strength of Materials</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 53

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

**ENGIN-110 Introduction to Engineering**

3 units  SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Credit by examination option available.

This course is an 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-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 auxiliaries, 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-130 Energy, Society, and the Environment**

3 units  SC
- 54 hours lecture 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 interrelationships between technology and the social sciences. Specifically, the course will investigate the societal factors that impact technology (historical, political, economic, ethical and environmental), and the ways in which technology affects society (language, art, music, psychology and sociology). This course is appropriate for students in both technical and non-technical majors. CSU, UC

**ENGIN-135 Programming for Scientists and Engineers**

4 units  LR
- 54 hours lecture/54 hours laboratory per term
- Recommended: MATH-192 and eligibility for ENGL-122 or equivalents

This course provides an introduction to programming in C/ C++ for engineers and scientists. Topics include flowcharts, algorithm design principles, algebraic operations, decision making, loops, records, data structures, file input output operations and linked lists. Students will also learn the programming principles of numerical methods in science and engineering. CSU, UC

**ENGIN-136 Computer Programming for Engineers Using MATLAB**

4 units  LR
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: MATH-192 or equivalent
- Recommended: MATH-193 or equivalent (may be taken concurrently)

The 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. C-ID ENGIN 220, CSU, UC

**ENGIN-140 Plane Surveying**

4 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-210  Thermodynamics
  3 units  LR
  •  54 hours lecture/18 hours laboratory per term
  •  Prerequisite: CHEM-120 and PHYS-230 or equivalents
This course introduces the fundamentals of energy storage,
thermophysical properties of liquids and gases, and the
basic principles of thermodynamics. The course focuses on
application of the concepts to various areas of engineering
related to energy conversion and air conditioning. The use
of computing tools that facilitate problem solving, design
analysis, and parametric studies in thermodynamics will be
integrated throughout the course. CSU, UC

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 analy-
sis, transient and steady state response of circuits, digital cir-
cuits, solid state devices, magnetism and magnetic circuits.
CSU, UC

ENGIN-240  Properties of Engineering Materials
  4 units  LR
  •  54 hours lecture/72 hours laboratory per term
  •  Prerequisite: CHEM-120 and PHYS-130 or equivalents
This course is a study of properties of engineering materi-
als 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 rela-
tion between microstructure and the mechanical properties
of metals, concrete, polymers, and ceramics, and the electrical
properties of semiconducting materials. C-ID ENGR 140B,
CSU, UC

ENGIN-255  Statics
  3 units  LR
  •  54 hours lecture 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 dis-
tributed 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 determi-
nation 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 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 mate-
rials, 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 meth-
ods are also discussed. CSU, UC

ENGIN-298  Independent Study
  .5-3 units  SC
  •  Variable hours
  •  Note: Submission of acceptable educational contract to
department and Instruction Office is required.
This course is designed for advanced students who wish
to conduct additional research, a special project, or learning
activities in a specific discipline/subject area and is not
intended to replace an existing course. The student and
instructor develop a written contract that includes objec-
tives to be achieved, activities and procedures to accomplish
the study project, and the means by which the supervising
instructor may assess accomplishment. 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 instruc-
tors by setting up laboratory or demonstration apparatus.
Students may not assist in course sections in which they are
currently enrolled. CSU
ENGINEERING TECHNOLOGY - ENGTC

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

Possible career opportunities
Career options in engineering technology include civil engineering technicians, surveying and mapping technicians (cartography), architectural and civil drafters, and mechanical engineering technicians. Engineering technicians may work as computer-aided design drafters, engineering aides, land surveyors, field assistants, planning technicians and technical sales people.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree
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.

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

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-119</td>
<td>Introduction to Technical Drawing</td>
</tr>
<tr>
<td>ENGTC-119</td>
<td>Introduction to Technical Drawing</td>
</tr>
</tbody>
</table>


plus at least 3 units from:

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


plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-226</td>
<td>Computer Aided Drafting Design, Advanced Concepts - AutoCAD</td>
</tr>
<tr>
<td>ENGTC-226</td>
<td>Computer Aided Drafting Design, Advanced Concepts - AutoCAD</td>
</tr>
</tbody>
</table>


plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-124</td>
<td>Thinking and Communicating Geospatially</td>
</tr>
<tr>
<td>GEOG-129</td>
<td>Field Data Acquisition and Management</td>
</tr>
</tbody>
</table>


plus at least 6 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-135</td>
<td>Digital Tools for Design</td>
</tr>
<tr>
<td>ARCHI-136</td>
<td>Digital Tools for Architecture</td>
</tr>
<tr>
<td>CONST-116</td>
<td>Plane Surveying</td>
</tr>
<tr>
<td>ENGIN-140</td>
<td>Plane Surveying</td>
</tr>
<tr>
<td>ENGTC-123</td>
<td>Principles of Civil Drafting</td>
</tr>
<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information Systems (GIS)</td>
</tr>
<tr>
<td>GEOG-126</td>
<td>Advanced Geographic Information Systems...</td>
</tr>
<tr>
<td>GEOG-160</td>
<td>Introduction to Remote Sensing</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Map Design and Visualization</td>
</tr>
</tbody>
</table>

total minimum required units 30
Associate in science degree
Industrial and manufacturing engineering technology

Students completing the program will be able to...
A. read the drawing for an object and visualize the geometry.
B. choose the correct manufacturing method for the object.
C. manufacture an object from a given drawing using machine tools.
D. use algebra, spreadsheets and measurement data to produce QC statistics.
E. verify that products meet the design criteria.
F. design and prototype mechanical parts under the supervision of engineers.
G. use computer integrated manufacturing (CIM) and computer numerical control (CNC) software for automation of manufacturing.

The associate of science degree in industrial and manufacturing engineering technology is offered to prepare students with the required skills to enter the workforce as manufacturing technicians. The program emphasizes traditional and modern machining techniques along with additional concepts in technical drawing and geometric dimensioning and tolerancing.

Students completing this program will learn the skills to become a manufacturing technician working with traditional machinery, such as lathes, mills, saws and drill presses as well as precision measuring devices. Students will also gain skills in the use of modern 3-D printing and Computer Aided Manufacturing (CAM) equipment for computer controlled manufacturing. Graduates of the program may work as quality control technicians, pursue jobs in research and development, rapid prototyping and fabrication, and be able to design mechanical parts working in consultation with engineers.

The DVC industrial and manufacturing engineering technology 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>
</tr>
</thead>
<tbody>
<tr>
<td>ENGIN-120</td>
<td>Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC-111*</td>
<td>Mathematics for Technicians</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC-160</td>
<td>Introduction to Industrial and Manufacturing Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC-162</td>
<td>Geometric Dimensioning and Tolerancing</td>
<td>1</td>
</tr>
<tr>
<td>ENGTC-165</td>
<td>Manufacturing Processes:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material Machining I</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC-166</td>
<td>Manufacturing Processes:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material Machining II</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC-168</td>
<td>Introduction to Computer Numerical Control</td>
<td>3</td>
</tr>
</tbody>
</table>

*ENGIN 111 satisfies DVC GE math requirement

---

**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.

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 terms. This program is offered as a collaborative program with Los Medanos College in Pittsburg 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, Los Medanos 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).

**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>ARCHI-137</td>
<td>Digital Fabrication and Prototyping</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC -126</td>
<td>Computer Aided Design and Drafting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>AutoCAD</td>
<td></td>
</tr>
<tr>
<td>ENGTC -129</td>
<td>Product Design I Using Solidworks</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC -226</td>
<td>Computer Aided Design and Drafting, Advanced Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>
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 Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMSC-101</td>
<td>Computer Literacy</td>
<td>4</td>
</tr>
<tr>
<td>CONST-110</td>
<td>Occupational Safety</td>
<td>2</td>
</tr>
<tr>
<td>ELECT-110</td>
<td>Introduction to Electricity</td>
<td>2</td>
</tr>
<tr>
<td>ENGIN-120</td>
<td>Engineering Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-111</td>
<td>Mathematics for Technicians</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-165</td>
<td>Manufacturing Processes: Material Machining I</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-166</td>
<td>Manufacturing Processes: Material Machining II</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-175</td>
<td>Hydraulic and Pneumatic Systems and Components</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 6 units in one of the following specializations:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGT-188</td>
<td>Introduction to Computer Numerical Control</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD-10*</td>
<td>Basic Arc Welding Theory</td>
<td>3</td>
</tr>
<tr>
<td>WELD-250**</td>
<td>Introduction to Welding</td>
<td>3</td>
</tr>
</tbody>
</table>

**electro-mechanical**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECT-120</td>
<td>Direct Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-121</td>
<td>Alternating Current Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-130</td>
<td>Motors and Motor Controllers</td>
<td>4</td>
</tr>
<tr>
<td>ELECT-220</td>
<td>Circuit Diagnosis and Analysis: Troubleshooting</td>
<td>2</td>
</tr>
<tr>
<td>ELECT-230</td>
<td>Electro-Mechanical Equipment</td>
<td>2</td>
</tr>
<tr>
<td>ELECT-271</td>
<td>Programmable Logic Controllers</td>
<td>4</td>
</tr>
</tbody>
</table>

**total minimum required units** 32

*Los Medanos College
* Laney College

### 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.

This certificate program prepares students for an entry level job as a civil drafter. Drafters work under the supervision of civil or structural engineers, architects, and/or surveyors as support staff in jobs requiring them to prepare, interpret, and revise technical drawings, or gather and categorize field data. Engineering technicians work as support staff in field, laboratory, and/or office environments.

To earn a certificate of achievement, students must complete each of the required courses with a "C" grade or higher. Some courses are not offered every term so please consult with the program director for assistance in scheduling classes.

**required courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST-114</td>
<td>Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>ENGIN-111*</td>
<td>Engineering Drawing /Descriptive Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-111</td>
<td>Plane Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-110</td>
<td>Elementary Physics</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-119</td>
<td>Introduction to Technical Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-119</td>
<td>Introduction to Technical Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-226</td>
<td>Computer Aided Drafting Design, - AutoCAD</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-124</td>
<td>Thinking and Communicating Geospatially</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-129</td>
<td>Field Data Acquisition and Management</td>
<td>3</td>
</tr>
</tbody>
</table>

### Associate in science degree

**Mechanical design drafting technology**

The Engineering Technology Program has removed this degree from the catalog. 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 in progress should contact the Engineering Technology program director for advisement.

*Los Medanos College
* Laney College
plus at least 6 units from:
ARCHI-135 Digital Tools for Design .................. 3
ARCHI-136 Digital Tools for Architecture ........... 3
CONST-116* Plane Surveying......................... 4
ENGIN-140* Plane Surveying......................... 4
ENGT-123 Principles of Civil Drafting ........... 3
GEOG-125 Introduction to Geographic Information Systems (GIS) .......... 3
GEOG-126 Advanced Geographic Information Systems ... 3
GEOG-160 Introduction to Remote Sensing ........ 4
GEOG-162 Map Design and Visualization .......... 3

**total minimum required units** 30

*Certain courses required for this certificate have recommended or prerequisite coursework that could add additional units.

## 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.

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. Students may not take a pass/no pass option for required courses.

**required courses**

<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>ENGT-111 Mathematics for Technicians</td>
<td>3</td>
</tr>
<tr>
<td>MATH-121* Plane Trigonometry</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>ARCHI-119 Introduction to Technical Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-119 Introduction to Technical Drawing</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>ARCHI-126 Computer Aided Design and Drafting - AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-126 Computer Aided Design and Drafting - AutoCAD</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>ENGT-226 Computer Aided Drafting Design, Advanced Concepts - AutoCAD</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 27

*Certain courses required for this certificate have recommended or prerequisite coursework that could add additional units.

## Certificate of achievement

### Industrial and manufacturing engineering technology

Students completing the program will be able to...

A. read the drawing for an object and visualize the geometry.
B. choose the correct manufacturing method for the object.
C. manufacture an object from a given drawing using machine tools.
D. use algebra, spreadsheets and measurement data to produce QC statistics.
E. verify that products meet the design criteria.
F. design and prototype mechanical parts under the supervision of engineers.
G. use computer integrated manufacturing (CIM) and computer numerical control (CNC) software for automation of manufacturing.

The certificate of achievement in industrial and manufacturing engineering technology is offered to prepare students with the required skills to enter the workforce as manufacturing technicians. The program emphasizes traditional and modern machining techniques along with additional concepts in technical drawing and geometric dimensioning and tolerancing.

Students completing this program will learn the skills to become a manufacturing technician working with traditional machinery such as lathes, mills, saws and drill presses as well as precision measuring devices. Students will also gain skills in the use of modern 3-D printing and Computer Numerical Control (CNC) equipment for computer controlled manufacturing. Graduates of the program may work as quality control technicians, pursue jobs in research and development, rapid prototyping and fabrication, and be able to design mechanical parts working in consultation with engineers.

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 required courses.
Engineering technology

**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.
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.

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 terms. This program is offered as a collaborative program with Los Medanos College in Pittsburg 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, Los Medanos 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.

**Required courses:**

- ENGIN-120 Engineering Drawing .................................. 3
- ENGT-111* Mathematics for Technicians .......................... 3
- ENGT-160 Introduction to Industrial and Manufacturing Engineering .......................................................... 3
- ENGT-162 Geometric Dimensioning and Tolerancing ........... 1
- ENGT-165 Manufacturing Processes: Material Machining I .......... 3
- ENGT-166 Manufacturing Processes: Material Machining II .......... 3
- ENGT-168 Introduction to Computer Numerical Control ........... 3
- ENGT-175 Hydraulic and Pneumatic Systems and Components ........ 3
- ENGT-176 Mechanical Systems and Components ................. 3
- ENGTC-126 Computer Aided Design and Drafting, AutoCAD ........ 3
- ENGTC-129 Product Design I Using Solidworks .................. 3
- ENGTC-226 Computer Aided Design and Drafting, Advanced Concepts AutoCAD ................. 3
- ELECT-120 Direct Current Circuits ................................. 4
- ELECT-121 Alternating Current Circuits .......................... 4
- ELECT-130 Motors and Motor Controllers .......................... 4
- ELECT-220 Circuit Diagnosis and Analysis: Troubleshooting ........ 2
- ELECT-230 Electro-Mechanical Equipment .......................... 2
- ELECT-271 Programmable Logic Controllers ....................... 4
- ENGTC-111 Mathematics for Technicians .......................... 3
- ENGTC-120 Engineering Drawing .................................. 3
- ENGTC-121 Alternating Current Circuits .......................... 4
- ENGTC-129 Product Design I Using Solidworks .................. 3
- ENGTC-165 Manufacturing Processes: Material Machining I .......... 3
- ENGTC-166 Manufacturing Processes: Material Machining II .......... 3
- ENGTC-168 Introduction to Computer Numerical Control ........... 3

**Total minimum required units** 25

**Certificate of achievement – Mechanical design drafting technology**

The Engineering Technology program has removed this degree from the catalog. 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 in progress should contact the Engineering Technology program director for advisement.

**Certificate of achievement – Mechanical drafting, CAD**

The Engineering Technology program has removed this degree from the catalog. 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 in progress should contact the Engineering Technology program director for advisement.
Certificate of accomplishment

Computer aided drafting and digital media for architecture, industrial design and engineering

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).

Drafters make drawings and plans to specify dimensions, materials and processes used in the making of a final product. These drawings are guidelines for the workers who will actually build or make whatever is being produced. Drafters also make drawings from blueprints, engineering sketches, photos and other sources which show how parts and other objects work, their relation to one another, and how they will be put together. 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, engineering sketches, 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.

required courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-125</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>ENGTC-226</td>
<td>Computer Aided Drafting Design, Advanced Concepts - AutoCAD</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-135</td>
<td>Digital Tools for Design</td>
<td>3</td>
</tr>
<tr>
<td>ARCHI-136</td>
<td>Digital Tools for Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-160</td>
<td>3D Modeling and Animation</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-129</td>
<td>Product Design I Using SolidWorks</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information</td>
<td>3</td>
</tr>
<tr>
<td>IDSIGN-120</td>
<td>Introduction to Industrial and Product Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Total minimum required units: 12

ENGTC-111 Mathematics for Technicians

3 units LR
- 54 hours lecture per term
- Prerequisites: MATH-090 or MATH-090E or MATH-090SP or equivalent
- Formerly ENGIN-111

This course is a study of mathematical topics used for technical applications in the workplace. Topics include algebraic operations, factoring, fractional equations, quadratic equations, rational, square root, exponential, absolute value and logarithmic functions. Calculation of surface areas and volumes of objects, polynomials and systems of equations is covered. CSU

ENGTC-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.
- Formerly ENGIN-119

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

ENGTC-123 Principles of Civil Drafting

3 units LR
- 36 hours lecture/72 hours laboratory per term
- Recommended: ENGT-111 (may be taken concurrently), ENGT-119 and ENGT-126 or equivalents
- Formerly ENGIN-123

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
ENGTC-126 Computer Aided Design and Drafting - AutoCAD
3 units SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ENGTC-119 or ARCHI-119 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree. Credit by examination option available.
- Formerly ENGIN-126

This introductory course covers the fundamentals of AutoCAD, a computer design drafting program, applied to the creation of technical drawings. Hands-on training utilizing a comprehensive overview of the software package and its applications to engineering drafting is stressed. CSU, UC (credit limits may apply to UC - see counselor)

ENGTC-129 Product Design I Using SolidWorks
3 units SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ARCHI-119 or ENGTC-119 or equivalent
- Note: Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree. Credit by examination option available.
- Formerly ENGIN-129

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

ENGTC-160 Introduction to Industrial and Manufacturing Engineering
3 units LR
- 54 hours lecture per term
- Recommended: ENGTC-111 or equivalent
- Formerly ENGIN-160

This course presents methods of manufacturing steel, aluminum and plastic products from ore mining to finished goods, blueprint reading, quality assurance, types of machinery used in manufacturing, methods of casting, forming, forging, extrusion and sintering of materials will also be covered. CSU, UC

ENGTC-162 Geometric Dimensioning and Tolerancing
1 unit LR
- 9 hours lecture/27 hours laboratory per term
- Recommended: ENGTC-111 or equivalent
- Formerly ENGIN-162

This course will present the principles of geometric dimensioning and tolerancing (GDT). Topics include GDT symbols, datum planes, material conditions, orientation, location, profile and runout tolerances. Laboratory assignments emphasize measurement using granite tables and pin and height gauges. CSU, UC

ENGTC-165 Manufacturing Processes: Material Machining I
3 units LR
- 36 hours lecture/72 hours laboratory per term
- Recommended: ENGTC-119 or ARCHI-119 or equivalent
- Formerly ENGIN-165

This course introduces practical and theoretical aspects of machine tool processes including basic blueprint interpretation, use of hand tools, measuring instruments and gauges, layout, inspection techniques and metals identification. Set up and operation of drill presses, band saw, grinders, lathes, milling machines and related tools will be covered. CSU

ENGTC-166 Manufacturing Processes: Material Machining II
3 units LR
- 36 hours lecture/72 hours laboratory per term
- Recommended: ENGTC-165 or equivalent
- Formerly ENGIN-166

This course presents precision measuring and inspection practices, mechanical hardware, advanced lathe and vertical milling machine operations; surface grinding; thread cutting; boring on lathes and vertical milling machines and special work holding devices. Topics include the theory and application of advanced techniques for machining ferrous/non-ferrous metals, plastics and non-traditional materials in addition to an introduction to Geometric Dimensioning and Tolerancing (GDT) and properties of materials associated with machinability, heat treating and hardness testing. CSU

ENGTC-168 Introduction to Computer Numerical Control
3 units SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ENGIN-120 or equivalent
- Formerly ENGIN-168, ENGIN-172

This course introduces students to Computer Numerical Control (CNC) machining. Students will learn the techniques of developing and programming cutting tool paths and movements using three-dimensional CAD models and working drawings. Instruction will cover the use of Computer Integrated Manufacturing package (CIM) software and visualization of cutting operations. Topics will also include setup and operation of CNC equipment for manufacturing. CSU

ENGTC-175 Hydraulic and Pneumatic Systems and Components
3 units SC
- 18 hours lecture/108 hours laboratory per term
- Formerly ENGIN-175

This course covers the practical and theoretical aspects of hydraulic and pneumatic systems. Topics include concepts, theory and common systems, components and devices. The laboratory emphasizes hands-on exercises in operation, maintenance and mechanical skills. CSU
ENGTC-176 Mechanical Systems and Components
3 units SC
- 18 hours lecture/108 hours laboratory per term
- Formerly ENGIN-176
This course covers mechanical systems with an emphasis on mechanical drives, flexible belt drives, lubrication, bearings, vibration, and rotating equipment. Topics include operation, maintenance and repair of mechanical systems and components used in a variety of industrial occupations. CSU

ENGTC-226 Computer Aided Drafting Design, Advanced Concepts - AutoCAD
3 units SC
- 36 hours lecture/72 hours laboratory per term
- Recommended: ENGTC-126 or ARCHI-126 or equivalent
- Note: Same as ARCHI-226. Students may petition to repeat this course when software or hardware is changed. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.
- Formerly ENGIN-226
This course covers the concepts and applications of constructing digital three-dimensional (3D) models and photorealistic renderings for presentation using AutoCAD, 3D Studio Max and Alias. Advanced techniques for surface wireframe and solid modeling will be presented. Students will explore lighting, materials mapping and rendering as they apply to architecture, engineering and industrial design. CSU, UC (credit limits may apply to UC - see counselor)

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-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

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>ENGL-122* Freshman English: Composition and Reading ........................................... 3</td>
<td></td>
</tr>
<tr>
<td>ENGL-123* Critical Thinking: Composition and Literature ........................................ 3</td>
<td></td>
</tr>
<tr>
<td>ENGL-126* Critical Thinking: The Shaping of Meaning in Language ................................ 3</td>
<td></td>
</tr>
</tbody>
</table>
English

Group 2: Core genre
complete at least 3 units from:
ENGL-150 Introduction to Literature .................................. 3
ENGL-151 The Short Story .............................................. 3
ENGL-153 Contemporary Poetry ....................................... 3
ENGL-180** Drama and Performance as Literature ............ 3

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-262 Survey of American Literature I 
(First Contact-1865) .................................................. 3
ENGL-263 Survey of American Literature II 
(1865 – Present) ....................................................... 3

Group 4: electives - Specialized literature 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-165 African American Literature .............................. 3
ENGL-166 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 Queer Literature Across Cultures ....................... 3
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-224 Poetry Writing ................................................ 3
ENGL-225* Creative Nonfiction Writing ............................. 3

**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.

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 a 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 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.

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

An additional 6 units selected from:
ENGL-154 Shakespeare and His World .............................. 3
ENGL-252 Early English Literature .................................. 3
ENGL-253 Survey of Late English Literature ..................... 3
ENGL-262 Survey of American Literature I 
(First Contact-1865) .................................................. 3
ENGL-263 Survey of American Literature II 
(1865 – Present) ....................................................... 3
ENGL-272 Early World Literature .................................... 3
ENGL-273 Late World Literature .................................... 3
ENGL-093  Sentence Structure and Punctuation  
1 unit  P/NP  
- Non degree applicable  
- 9 hours lecture/27 hours laboratory per term  
This course focuses specifically on developing skills in sentence structure and punctuation and is especially appropriate for students enrolled in other basic skills English courses.

ENGL-095  Studies in Reading and Writing  
.5-5 units  SC  
- Non degree applicable  
- Variable hours  
- Recommended: ENGL-096 and ENGL-098 or equivalent recommendation from the assessment process  
A supplemental course in reading and writing to provide a study of current concepts and problems in reading, writing, and related substantive areas. Specific topics will be announced in the schedule of classes.

ENGL-096  Introduction to College Reading and Study Skills  
3 units  SC  
- Non degree applicable  
- 54 hours lecture/18 hours laboratory per term  
- Recommended: Reading/writing assessment process or ESL-096A or equivalent  
- Note: ESL students are strongly encouraged to follow the ESL assessment process. ESL-096A is recommended for ESL students
This course is designed for students who need work in basic reading and study skills required for college. Writing will be an essential component of this course. Students will learn to identify main ideas and supporting details and to determine methods of organization and relationship of ideas. A primary aim is to increase students' enjoyment of reading as well as their ability to comprehend, interpret, and remember what they read. Students will practice using writing to respond to and demonstrate their understanding of what they read. The course will also emphasize effective study skills and vocabulary development.

ENGL-097  Introduction to Integrated College Reading and Writing  
5 units  SC  
- Non degree applicable  
- 90 hours lecture/18 hours laboratory per term  
- Recommended: ESL-096A, ESL-098A or equivalents
This course provides an integrated approach to reading and writing, preparing students for ENGL-117 or ENGL-116 and 118. Students will be introduced to academic culture and to the practices associated with both academic reading and writing. Methods to interact with and comprehend texts are presented to develop and improve reading, writing, and critical-thinking skills. Students will study and practice the ways reading and writing are connected. This course will also emphasize vocabulary development and study skills. A variety of texts serve as a foundation for skill practice, discussion, and writing assignments, both informal and formal.
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-099  English Grammar and Usage
3 units  SC
• Non degree applicable
• 54 hours lecture per term

This course provides intensive instruction on the rules of grammar, punctuation, spelling and their application in writing. Students will learn to recognize grammatical errors in their writing, to make informed judgments about the style and syntax of the sentences they write, to reduce the number of misspelled words, and to use a broader vocabulary in their writing. The course is intended to prepare students for more advanced English classes and to increase their knowledge of the fundamentals of English.

ENGL-117  Integrated College Reading and Writing Development
5 units  SC
• 90 hours lecture per term
• Recommended: ENGL-096 and ENGL-098 or equivalents
• Note: This course is equivalent to the completion of ENGL-116 and ENGL-118 or ESL-117A. Only one of ENGL-116, 117, 118 or ESL-117A may be applied to the units required for the associate degree.

This course provides an integrated approach to reading and writing for those students who have assessed into both ENGL-116 and 118. It provides the necessary preparation for ENGL-122. Students will prepare for college-level work; develop and improve their critical reading, writing, and thinking skills; and improve their vocabulary and study skills. Students will actively engage with their peers, study and practice the ways reading and writing inform each other, and learn ways to interact with, appreciate, and comprehend the texts they read. Students will read a variety of texts and complete both formal and informal writing assignments connected to these readings. The central focus throughout the course will be on the integration and synthesis of reading and writing.

ENGL-116  College Reading Development
3 units  SC
• 54 hours lecture per term
• Recommended: ENGL-096 or reading/writing assessment process or equivalent
• Note: Only one of ENGL-116, 117, 118 or ESL-117A may be applied to the units required for the associate degree.

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-120A  Grammar for Writing and Editing for Multilingual Students
1 unit  SC
• Non degree applicable
• 18 hours lecture per term

This course is designed to increase students’ awareness of their own use of written language, strengthen their linguistic monitors and give them practice in editing strategies which will enable the accurate, meaningful, and appropriate usage of linguistic forms in written expression.
ENGL-122  Freshman English: Composition and Reading
3 units  LR
• 54 hours lecture per term
• Prerequisite: Reading/writing assessment process or ENGL-116 and ENGL-118 or ENGL-117 or ESL-117A or equivalent
This course engages students regularly in the writing and reading process with a substantial amount of college-level reading. 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 employ varied rhetorical strategies used by accomplished writers. C-ID ENGL 100, CSU, UC

ENGL-122A Freshman English: Composition and Reading for Multilingual Students
3 units  LR
• 54 hours lecture per term
• Prerequisite: Reading/writing assessment process or ENGL-116 and ENGL-118 or ENGL-117 or ESL-117A or equivalent
This course engages multilingual students regularly in the writing and reading process with a substantial amount of college-level reading. Multilingual 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, multilingual students will use a variety of types of support including primary and secondary research. Multilingual students will employ varied rhetorical strategies used by accomplished writers.

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

This course will focus on the language, structure, characterization, and philosophy of Shakespeare's plays. The historical, social, and artistic forces, which helped to shape his works during the Elizabethan and Jacobean ages, will be discussed. The relationship between Shakespeare's work as literature and as performing art, experienced in theater, film, opera, or television will be examined. CSU, UC

ENGL-155  Topics in English  
.5-3 units  SC  
- 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  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-116/118 or equivalent  

This course examines language, literature and the arts from a multi-cultural context. Students will read stories, drama, poetry and essays that reflect a broad range of cultural viewpoints; they will observe and analyze relevant print and visual media; and they will compare and consider such artistic forms as architecture, music, fashion and painting in the context of compared cultures. Attention will be devoted to understanding the linguistic or attitudinal challenges posed by cross-cultural communication. The course will be helpful to American-born students seeking a wider cultural perspective and to International students and other advanced ESL students in their acculturation and language development efforts. CSU, UC

ENGL-163  Asian American Literature  
3 units  SC  
- 54 hours lecture per term  
- Recommended: ENGL-122 or equivalent  

This course introduces students to a variety of literary works from the Asian American culture, which are significant in illuminating the Asian American cultural experience. Readings are chosen for their literary, historical, cultural, philosophical and psychological importance. CSU, UC

ENGL-164  Native American Literatures  
3 units  SC  
- 54 hours lecture per term  
- Recommended: ENGL-122 or equivalent  

This course presents the literary traditions and cultures of Native Americans, and through the study of various oral and written literary works (such as songs, myths, folktales, oratories, autobiographies, films, plays, poetry and prose) will examine issues important to Native peoples, such as cultural identity, language, self-determination. CSU, UC

ENGL-166  African American Literature  
3 units  SC  
- 54 hours lecture per term  
- Recommended: ENGL-122 or equivalent  

This course is a study of the major works of fiction and poetry by 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  SC  
- 54 hours lecture per term  
- Recommended: ENGL-122 or equivalent  
The course focuses on the literature of Latin American cultures. Through analysis of poetry, fiction, drama, music and film, students will explore political, social, historical, and psychological elements that comprise the voices of Latin Americans. CSU, UC

ENGL-168  The Literatures of America  
3 units  SC  
- 54 hours lecture per term  
- Recommended: ENGL-122 or equivalent  
This course 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  SC  
- 54 hours lecture per term  
- Recommended: ENGL-122 or equivalent  
This course explores myth as a vital part of human experience, individual and collective, past and present. Myths from a wide range of cultures (including Native American, African, Asian, Middle Eastern and European) are examined. Myths in folklore, ritual, literature and the arts 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  Queer Literature Across Cultures  
3 units  SC  
- 54 hours lecture per term  
- Recommended: ENGL-122 or equivalent  
This course is a survey of queer literature. Literary genres covered include fiction, poetry, drama, and memoir. The wide-range of Lesbian Gay, Bisexual, Transgender, Queer (LGBTQ) experience is examined from various cultural points of reference, and students will read selections from a variety of cultures. This cross-cultural selection may include works by Native-American, Middle-Eastern, African, South-American, Asian, European, and American identified LGBTQ authors (including Latino/a, Asian-American, and African-American, and more). Additionally, students will analyze the ways historical, social, economic, and psychological forces shape LGBTQ cultures and the literatures they produce. The distinguishing elements of different literary genres and methods used to analyze literature of any genre will also be covered. 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 speculative fiction (a broad term encompassing both science fiction and fantasy) as a literary form with consideration of major authors, themes, developments in the genre over time, critical approaches to the genre, and a variety of texts from diverse cultures. Because of the genres' unique characteristics, its significant works so often explore the political, psychological, and/or socio-economic factors at work in society. Formal analysis will identify key archetypal themes and characters; these may include but are not limited to the alien within and without, artificial intelligence and the nature of human experience, utopias and dystopias in imagination, the hero's journey, and speculative fiction as a modern mythology. The distinguishing elements of different literary genres and methods used to analyze literature of any genre will also be covered. 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 presents the graphic novel as a unique branch of literature. The course focuses on the graphic novel as a literary and artistic medium capable of exploring any topic in a sophisticated and compelling manner. Exploring a range of genres in fiction (superhero, coming of age, experimental) and non-fiction (memoir and reportage), course content will also cover literary and artistic techniques used in composing graphic literature, the historical and international origins of the form, and its current significance 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 texts written for children as literature, applying sophisticated methods of literary criticism. The course places children's literature in an historical context, tracing its development from earliest oral origins to the present, and considers the contributions and points of view of various 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-178  Young Adult Literature  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This course presents an overview of young adult literature, designed to engage adult readers in a critical appraisal of the genre, its unique features and history, literary merit, and cultural influence. Topics include history of young adult literature, a study of its classic texts, works of diverse ethnic and under-represented groups, and the relationship of adolescent psychology to this genre. CSU, UC

ENGL-180  Drama and Performance as Literature  
3 units  SC  
• 54 hours lecture per term  
• Recommended: ENGL-122 or equivalent  
• Note: Attendance at one or more live performances is required.  
This course presents reading, critical study, and discussion of dramatic literature as a literary form by authors from diverse time periods and cultures. Dramatic structure, elements of performance (dramatic expression, stage direction, rhythm, etc.), and literary devices that characterize this literary genre are emphasized. Students will analyze the ways dramatic literature reflects and captures historical, social, cultural, and economic forces, and can serve as a unique literary artifact. The recognition of the distinguishing elements of literary forms and to development competency in analyzing literature of any genre are presented. 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 by and about women from at least three of the following cultural, ethnic, or racial groups: African American, Native American, European American, Asian American, and Hispanic. Under scrutiny will be women's prescribed role in society as well as the language, ideology, substance, and form of the literature by them. Literature considered can include poetry, short stories, novels, graphic novels, plays, and memoirs. CSU, UC

ENGL-222  Creative Writing  
3 units  SC  
• 54 hours lecture per term  
• Prerequisite: Eligibility for ENGL-122 or equivalent  
In this course, students read in different genres—primarily fiction and poetry—in order to learn various writing techniques, styles, and conventions. This study leads to the composition of original poems and short prose pieces that students workshop in class, focusing on the revision and editing process. 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  
This course provides an in-depth study of the elements of the short story. The elements of the short story form will be examined through reading and writing; students will write to prompts and complete original full-length short stories. Students’ short stories will be critiqued by both the full class and the instructor in both one-on-one and workshop settings. 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 English 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. Genius, invention, tradition, and creativity in social and political contexts will be explored. 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 II (1865 – Present)
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 poets, prose authors, and playwrights from 1865 until the present. Students will read poetry, short fiction, novels, non-fiction—both short and book-length—and drama. Literary movements, significant authors, and cultural movements in context will be studied. Style, voice, canonicity, perceptions of gender and ethnicity and how plurality, immigration and social constructs inspire, define and provoke literary works will also be explored. Defining what is American literature is a central question of the course. 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 translation. C-ID ENGL 140, CSU, UC

ENGL-273 Late World Literature
3 units SC
• 54 hours lecture per term
• Recommended: ENGL-122 or equivalent
This course is a survey of selected literary works in English or English translation from cultures around the world from the seventeenth century to modern times. From the Enlightenment rise of modern science to the present, topics may include major literary movements since the nineteenth century: Romanticism with its focus on individual potential and nature; Realism and the rise of great fiction with psychological depth; Modernist experimentation with form and grappling with the shattering of traditional beliefs and views of the world; and post-colonial and contemporary literature reflecting the new world order and global context following World War II. 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 is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU
ENGLISH AS A SECOND LANGUAGE – ESL

Obed Vazquez, Dean
English Division
Faculty Office Building, Room 136

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

The English as a Second Language (ESL) program offers a broad range of courses in reading, writing, grammar, and oral skills communication that are organized into increasing levels of skill development. The low-intermediate level consists of a single course that combines reading, writing, and speaking skills development. The intermediate, high-intermediate, and advanced levels consist of separate courses in reading, writing, grammar, and oral skills. For students at the high-advanced ESL level, an integrated reading and writing course, English 117A, is offered. Completion of English 117A provides English language learners with an entry point to college-level coursework.

Students may begin at any ESL level and complete courses individually or in sequence. The courses are organized into certificates of accomplishment in ESL:

- ESL conversation
- Intermediate ESL reading and writing
- Advanced ESL reading and writing
- Transition to college level English

To earn a certificate, students must complete each of the required courses with a grade of “C” grade or higher.

Certificate of accomplishment
ESL conversation

Students completing the program will be able to...
A. demonstrate confidence and skills in English pronunciation.
B. demonstrate confidence and skills in listening to and understanding English.
C. demonstrate skills in English conversation, including a mock job interview.

required courses: units
ESL-075 Intermediate Oral Communication Skills ...... 2
ESL-085 High-Intermediate Oral Communication Skills ............................................. 2

total minimum required units 6

Certificate of accomplishment
Intermediate ESL reading and writing

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

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

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

required courses: units
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

total minimum required units 17

Certificate of accomplishment
ESL: Transition to college-level English

Students completing the program will be able to...
A. transition into college and transfer-level English and Counseling courses.
B. improve college-level essay writing skills.
C. improve college-level critical reading skills.
D. improve college-level critical thinking skills.
E. improve language control and sentence clarity in writing by focusing on grammar in the context of their writing.
F. improve success, including possible transfer plans.
**required courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL-122*</td>
<td>Freshman English: Composition and Reading</td>
<td>3</td>
</tr>
<tr>
<td>ESL-096A</td>
<td>Advanced ESL Reading and Study Skills</td>
<td>3</td>
</tr>
<tr>
<td>ESL-098A</td>
<td>Advanced ESL Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL-116</td>
<td>College Reading Development</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-117</td>
<td>Integrated College Reading and Writing Development</td>
<td>5</td>
</tr>
<tr>
<td>ESL-117A</td>
<td>Integrated Reading and Writing:</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 1.5 units from:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COUNS-120</td>
<td>Student Success</td>
<td>3</td>
</tr>
<tr>
<td>COUNS-130</td>
<td>Transfer Planning</td>
<td>1.5</td>
</tr>
</tbody>
</table>

*Prerequisite: successful completion of ENGL-116/118 or ENGL-117 or ESL-117A

**total minimum required units** 13.5

---

**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-075 Intermediate Oral Communication Skills**

2 units  SC

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

This intermediate course complements the ESL reading and writing courses, ESL-076 and ESL-078, and is designed for non-native speakers of English at the Intermediate Level. The focus is on oral comprehension and increased fluency and accuracy in spoken English. The course will also present strategies for developing a self-awareness of strengths and challenges of communicating in English. Students will explore a range of topics through a variety of activities.

---

**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 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 is an intermediate-level course for English learners in writing paragraphs and narratives to enhance performance in future college courses. Students will continue to develop skills in grammar, language usage, parts of speech, punctuation, idioms and reading short passages.

**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-085  High-Intermediate Oral Communication Skills
2 units  SC
• Non degree applicable
• 18 hours lecture/54 hours laboratory per term
• Recommended: Eligibility for ESL-075 or equivalent
This high-intermediate course complements the ESL reading and writing courses, ESL-086 and ESL-088, and is designed for non-native speakers of English at the high-intermediate level. Building on ESL-075, this course focuses on listening and speaking skills for academic purposes. Exploring a variety of topics, students will work on oral comprehension of lectures and presentations, note-taking, and academic discussion. This course will also present strategies for developing a self-awareness of strengths and challenges of communicating in English.

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-089  Grammar for Advanced ESL Students
2 units  SC
• Non degree applicable
• 36 hours lecture per term
• Recommended: ESL-080 and 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-095  Advanced Oral Communication Skills
2 units  SC
• Non degree applicable
• 18 hours lecture/54 hours laboratory per term
• Recommended: Eligibility for ESL-085 or equivalent
This advanced ESL course complements the ESL reading and writing courses, ESL-096A and ESL-098A and is designed for non-native speakers of English at the Advance Level. Building on ESL-085, this course focuses on listening and speaking skills with an emphasis on listening and speaking in academic settings. Exploring a variety of conceptually and linguistically complex topics, students will work on oral comprehension of lectures and presentations, strategies for note-taking, and academic discussions. This course will also present strategies for developing a self awareness of strengths and challenges of communicating in English.

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 studentsí 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 othersí writing.

**ESL-117A  Integrated Reading and Writing: Advanced English Language Learners**

5 units  SC
- 90 hours lecture per term
- Recommended: ESL-096A and ESL-098A or equivalents
- Note: This course is equivalent to the completion of ENGL-116 and ENGL-118 or ENGL-117. Only one of ENGL-116, 117, 118 or ESL-117A may be applied to the units required for the associate degree.

This course integrates the skills taught in ENGL-116 and ENGL-118 and is intended for Advanced English Language Learners who have been assessed or advised to take both courses to prepare them to take ENGL-122, transfer-level English. In this course, students will develop and improve their critical reading, writing, and thinking skills, as well as their vocabulary and study skills. Students will actively engage with their peers, studying and practicing the ways reading and writing inform each other, and learning ways to interact with, appreciate, and comprehend the texts they read. The central focus throughout the course will be on the integration and synthesis of reading and writing at the college level with explicit grammar instruction; the additional focus for English Language Learners will be on revising and editing to achieve clarity of ideas and correctness of grammar, punctuation and mechanics. CSU, UC

---

**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 monitor, 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, geospatial technology, and biodiversity preservation. Individuals studying in this field are trained to provide both public and private environmental services in a variety of settings: private business, consulting services and government agencies.

**Program-level student learning outcomes**

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

**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.

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.
Environmental science

Students are advised that there are a wide range of environmental science areas of emphasis offered at the university level. Therefore, while choosing electives, students are advised to consult with a counselor or faculty advisor to select courses that will meet the requirements of an area of emphasis at their selected transfer institution. 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 other general education requirements; however, the units are only counted once.

major requirements: 

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-170</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-140</td>
<td>Introduction to Weather</td>
<td>3</td>
</tr>
<tr>
<td>GEOL-120</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-108</td>
<td>Introductory Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-142</td>
<td>Elementary Statistics with Probability</td>
<td>4</td>
</tr>
<tr>
<td>MATH-192</td>
<td>Analytic Geometry and Calculus I</td>
<td>5</td>
</tr>
</tbody>
</table>

plus at least 9 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHI-207</td>
<td>Environmental Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-126</td>
<td>Ecology and Field Biology</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN-130</td>
<td>Energy, Society, and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENSYS-120</td>
<td>Introduction to Energy Systems</td>
<td>3</td>
</tr>
<tr>
<td>ENSYS-125</td>
<td>Building Envelope and Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-124</td>
<td>Thinking and Communicating Geospatially</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-129</td>
<td>Field Data Acquisition and Management</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-160</td>
<td>Introduction to Remote Sensing</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-120</td>
<td>General College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-121</td>
<td>General College Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-130</td>
<td>Physics for Engineers and Scientists A: Mechanics and Wave Motion</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230</td>
<td>Physics for Engineers and Scientists B: Heat and Electro-Magnetism</td>
<td>4</td>
</tr>
</tbody>
</table>

ENVSC-295 Occupational Work Experience Education in ENVSC

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

1-4 units SC

- May be repeated three times
- Variable hours
- Note: In order to enroll in ENVSC-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

ENVSC-295 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. Five hours work per week or seventy-five hours work per term is equal to one unit. Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253, CSU.

Program-level student learning outcomes

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.
Associate in arts degree  
Broadcast communication arts

Students completing the program will be able to...
A. produce for broadcast and digital distribution utilizing three-camera studio format principles (except Basic Digital Field Production and Basic Writing for Digital Medium).
B. operate cameras and professional sound equipment (except Basic Writing for Digital Medium).
C. perform digital nonlinear editing (except Basic Writing for Digital Medium).
D. produce still and motion graphics (except Basic Writing for Digital Medium).
E. 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.

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 registering for all required courses in a single semester. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

Selected courses in the program may also meet some lower division requirements for bachelor of arts programs at certain California State University campuses. Students who intend to transfer are advised to consult with a counselor regarding specific requirements.

major requirements  
units
ARTDM-105 Introduction to Digital Imaging .................. 3
FTVE-120 Introduction to TV Studio Production .......... 3
FTVE-130 Intermediate TV Studio Production .......... 3
FTVE-165 Digital Editing .................................. 3
FTVE-240 History of Broadcasting and Electronic Media ............................................ 3

plus at least 6 units from:
FTVE-140 Introduction to Film and Media Scriptwriting ... 3
FTVE-160 Introduction to Film Production .................. 3
JRNAL-110 Mass Media of Communication .................. 3

plus at least 3 units from:
FTVE-132 Advanced TV Studio Production .............. 3
FTVE-150 Topics in Film, Television, and Electronic Media .................................................. 0.3-4
FTVE-161 Intermediate Film Production .............. 3
FTVE-166 Intermediate Digital Editing .............. 3

plus at least 3 units from:
ARTDM-190 Digital Media Projects ..................... 3
ARTDM-195 Applied Production for Digital Media .......... 3
FTVE-295 Occupational Work Experience Education in FTVE ........................................... 1-4
FTVE-296 Internship in Occupational Work Experience Education in FTVE ........................................... 1-4

plus at least 6 units from:
ARTDM-115 Digital Interface Design ..................... 3
ARTDM-149 Fundamentals of Digital Video .............. 3
ARTDM-170 Animation and Interactivity .................. 3
BUSMG-191 Small Business Management .................. 3
BUSMG-192 Entrepreneurship and Venture Management ... 3
BUSMK-255 Advertising .................................. 3
COMM-148 Performance of Literature .................... 3
DRA MA-122 Basic Principles of Acting .................. 3
DRA MA-123 Intermediate Principles of Acting .......... 3
DRA MA-124 Advanced Principles of Acting ............ 6
DRA MA-126 Auditioning and Preparation for the Camera.... 3
ELTRN-118 Electronics I .................................. 3
ENGL-151 The Short Story .................................. 3
ENGL-152 The Short Film .................................. 3
FTVE-132 Advanced TV Studio Production .......... 3
FTVE-140 Introduction to Film and Media Scriptwriting ... 3
FTVE-150 Topics in Film, Television, and Electronic Media .................................................. 0.3-4
FTVE-160 Introduction to Film Production .......... 3
FTVE-161 Intermediate Film Production .......... 3
FTVE-166 Intermediate Digital Editing .......... 3
FTVE-205 Introduction to Film and Media Arts .......... 3
FTVE-280 American Cinema 1900-1950 .................. 3
FTVE-281 World Cinema 1900-1960 .................. 3
FTVE-282 American Cinema 1950 to the Present ........ 3
FTVE-283 World Cinema 1960 to the Present ........ 3
FTVE-298 Independent Study .................. 0.5-3

total minimum required units 33

*Note: There may be no duplication of course units between major requirements and elective courses.
Certificate of achievement
Broadcast communication arts

Students completing the program will be able to...
A. produce for broadcast and digital distribution utilizing three-camera studio format principles (except Basic Digital Field Production and Basic Writing for Digital Medium).
B. operate cameras and professional sound equipment (except Basic Writing for Digital Medium).
C. perform digital nonlinear editing (except Basic Writing for Digital Medium).
D. produce still and motion graphics (except Basic Writing for Digital Medium).
E. 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.

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: units
ARTDM-105 Introduction to Digital Imaging .............. 3
FTVE-120 Introduction to TV Studio Production .......... 3
FTVE-130 Intermediate TV Studio Production ............ 3
FTVE-165 Digital Editing .................................. 3
FTVE-240 History of Broadcasting and Electronic Media ........................................ 3

plus at least 6 units from:
FTVE-140 Introduction to Film and Media Scriptwriting... 3
FTVE-160 Introduction to Film Production .................. 3
JRNAL-110 Mass Media of Communication ................. 3

plus at least 3 units from:
FTVE-132 Advanced TV Studio Production ................. 3
FTVE-150 Topics in Film, Television, and Electronic Media ........................................ 0.3-4
FTVE-161 Intermediate Film Production .................... 3
FTVE-166 Intermediate Digital Editing ....................... 3

plus at least 3 units from:
ARTDM-190 Digital Media Projects ......................... 3
ARTDM-195 Applied Production for Digital Media ....... 3
FTVE-295 Occupational Work Experience Education in FTVE ........................................ 1.4
FTVE-296 Internship in Occupational Work Experience Education in FTVE ........................................ 1.4

plus at least 6 units from:
ARTDM-115 Digital Interface Design .......................... 3
ARTDM-149 Fundamentals of Digital Video ................ 3
ARTDM-170 Animation and Interactivity .................... 3
BUSMG-191 Small Business Management .................. 3
BUSMG-192 Entrepreneurship and Venture Management ... 3
BUSMK-285 Advertising ....................................... 3
COMM-148 Performance of Literature ........................ 3
DRAMA-122 Basic Principles of Acting ........................ 3
DRAMA-123 Intermediate Principles of Acting ............. 3
DRAMA-124 Advanced Principles of Acting ................ 6
DRAMA-126 Auditioning and Preparation for the Camera .. 3
ELTRN-116 Electronics I ....................................... 3
ENGL-151 The Short Story .................................... 3
ENGL-152 The Short Film ...................................... 3
FTVE-132 Advanced TV Studio Production ................. 3
FTVE-140 Introduction to Film and Media Scriptwriting ... 3
FTVE-150 Topics in Film, Television, and Electronic Media ........................................ 0.3-4
FTVE-160 Introduction to Film Production .................. 3
FTVE-161 Intermediate Film Production .................... 3
FTVE-166 Intermediate Digital Editing ....................... 3
FTVE-205 Introduction to Film and Media Arts ............. 3
FTVE-280 American Cinema 1900-1950 ...................... 3
FTVE-281 World Cinema 1900-1960 .......................... 3
FTVE-282 American Cinema 1950 to the Present .......... 3
FTVE-283 World Cinema 1960 to the Present .............. 3
FTVE-298 Independent Study .................................. 0.5-3

total minimum required units .............................. 33

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

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTVE-161 Intermediate Film Production</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-165 Digital Editing</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-240 History of Broadcasting and Electronic Media</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 6 units from:</td>
<td></td>
</tr>
<tr>
<td>ARTDM-105 Introduction to Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-190 Digital Media Projects</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-195 Applied Production for Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-130 Topics in Film, Television, and Electronic Media</td>
<td>0.3-4</td>
</tr>
<tr>
<td>FTVE-160 Introduction to Film Production</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-295 Occupational Work Experience Education in FTVE</td>
<td>1-4</td>
</tr>
<tr>
<td>FTVE-296 Internship in Occupational Work Experience Education in FTVE</td>
<td>1-4</td>
</tr>
<tr>
<td>FTVE-298 Independent Study</td>
<td>0.5-3</td>
</tr>
</tbody>
</table>

**total minimum required units** 15

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).
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.

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTVE-120 Introduction to TV Studio Production</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-130 Intermediate TV Studio Production</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-132 Advanced TV Studio Production</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-240 History of Broadcasting and Electronic Media</td>
<td>3</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>ARTDM-105 Introduction to Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-190 Digital Media Projects</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-195 Applied Production for Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-150 Topics in Film, Television, and Electronic Media</td>
<td>0.3-4</td>
</tr>
<tr>
<td>FTVE-295 Occupational Work Experience Education in FTVE</td>
<td>1-4</td>
</tr>
<tr>
<td>FTVE-296 Internship in Occupational Work Experience Education in FTVE</td>
<td>1-4</td>
</tr>
<tr>
<td>FTVE-298 Independent Study</td>
<td>0.5-3</td>
</tr>
</tbody>
</table>

**total minimum required units** 15
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.

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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTVE-140</td>
<td>Introduction to Film and Media Scriptwriting</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-141</td>
<td>Intermediate Film and Media Scriptwriting</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-142</td>
<td>Advanced Film and Media Scriptwriting</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-240</td>
<td>History of Broadcasting and Electronic Media</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM-148</td>
<td>Performance of Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-151</td>
<td>The Short Story</td>
<td>3</td>
</tr>
<tr>
<td>FTVE-150</td>
<td>Topics in Film, Television, and Electronic Media</td>
<td>0.3-4</td>
</tr>
<tr>
<td>FTVE-295</td>
<td>Occupational Work Experience Education in FTVE</td>
<td>1-4</td>
</tr>
<tr>
<td>FTVE-296</td>
<td>Internship in Occupational Work Experience Education in FTVE</td>
<td>1-4</td>
</tr>
<tr>
<td>FTVE-298</td>
<td>Independent Study</td>
<td>0.5-3</td>
</tr>
<tr>
<td>JRNL-110</td>
<td>Mass Media Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 15

FTVE-120  Intermediate TV Studio Production

3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: FTVE-120 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-130

This is an intermediate class designed to advance the student’s skills in producing and directing TV programs and operating television equipment. Students will produce and direct programs and prepare for positions in broadcast and cable TV as well as industrial television production facilities. CSU

FTVE-130  Intermediate TV Studio Production

3 units  SC
- 54 hours lecture per term
- Prerequisite: FTVE-130 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-132

This is an advanced class designed to increase the student’s skills in producing and directing TV programs and operating television equipment. Students will produce and direct programs to prepare for positions in broadcast and cable TV as well as industrial television production facilities. CSU

FTVE-132  Advanced TV Studio Production

3 units  SC
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: FTVE-130 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-132

This is an intermediate class designed to advance the student’s skills in producing and directing TV programs and operating television equipment. Students will produce and direct programs and prepare for positions in broadcast and cable TV as well as industrial television production facilities. CSU

FTVE-140  Introduction to Film and Media Scriptwriting

3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-290 and FILM-290

This is a basic introductory course in writing for the film and electronic media. Preparing scripts in proper formats, including fundamental technical, conceptual and stylistic issues related to writing fiction and non-fiction scripts for informational and entertainment purposes in film and electronic media are emphasized. A writing evaluation component is a significant part of the course requirement. CSU, UC

FTVE-141  Intermediate Film and Media Scriptwriting

3 units  SC
- 54 hours lecture per term
- Prerequisite: FTVE-140 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly FILM-291

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, UC
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, UC

**FTVE-150  Topics in Film, Television, and Electronic Media**

3 units SC
- Variable hours
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-190 and FILM-150

A supplemental course in film, television, and electronic media to provide a study of current concepts and problems in film, television, and electronic media. Specific topics will be announced in the schedule of classes. CSU

**FTVE-160  Introduction to Film Production**

3 units SC
- 36 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-125 and FILM-292

This course provides an introduction to short, single-camera digital videos focusing on the aesthetics and fundamentals of scripting, producing, directing on location, post-production, and exhibition/distribution. Theory, terminology, and operation of single camera video production, including composition and editing techniques, camera operation, portable lighting, video recorder operation, audio control and basic editing will also be covered. CSU, UC

**FTVE-161  Intermediate Film Production**

3 units SC
- 36 hours lecture/54 hours laboratory per term
- Prerequisite: FTVE-160 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-126 and FILM-293

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

**FTVE-165  Digital Editing**

3 units SC
- 36 hours lecture/72 hours laboratory per term
- Formerly BCA-165 and FILM-165

This course is 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, UC

**FTVE-166  Intermediate Digital Editing**

3 units SC
- 36 hours lecture/72 hours laboratory per term
- Prerequisite: FTVE-165 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-166 and FILM-166

This intermediate course is designed to advance the student’s non-linear digital editing skills using current industry standard software programs. CSU, UC

**FTVE-200  American Cinema/American Culture**

3 units SC
- 54 hours lecture per term
- Formerly FILM-140

This course presents the history of cinema focusing on various genres in American filmmaking in a larger cultural context including literature, drama, 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, and responds to evolving technology. CSU, UC

**FTVE-205  Introduction to Film and Media Arts**

3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly FILM-180

This course will examine major trends and genres in the world of film and media. Analysis of how plot, theme and character are developed in a visual medium and how the language and syntax of film conveys meaning as compared to media, literature and drama will be emphasized. The relationship of film and media to historical, social, and cultural trends will also be examined. Topics include modes of production, narrative and non-narrative forms, visual design, editing, sound, genre, ideology and critical analysis. CSU, UC (credit limits may apply to UC - see counselor)

**FTVE-210  American Ethnic Cultures in Film**

3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly FILM-140

This course will examine major trends and genres in the world of film and media. Analysis of how plot, theme and character are developed in a visual medium and how the language and syntax of film conveys meaning as compared to media, literature and drama will be emphasized. The relationship of film and media to historical, social, and cultural trends will also be examined. Topics include modes of production, narrative and non-narrative forms, visual design, editing, sound, genre, ideology and critical analysis. CSU, UC (credit limits may apply to UC - see counselor)
Film, television, and electronic media

FTVE-240  History of Broadcasting and Electronic Media
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-140

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

FTVE-260  Ethnic Images in United States (U.S.) Television
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly BCA-260

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

FTVE-280  American Cinema 1900-1950
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly FILM-280

This course is a survey of major trends in American Cinema from 1900 to the demise of the studio system in the 1950s. Students will view films from notable artists and movements that have influenced the development of film arts around the world. In addition, students will analyze how social, economic, and historical forces shape film art, the development of global media culture, and how cinema communicates as an art form. CSU, UC

FTVE-281  World Cinema 1900-1960
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly FILM-281

This course is a survey of major trends in World Cinema from 1900 to the French New Wave of the 1960s. Students will view films from notable artists and movements that have influenced the development of film arts around the world. In addition, students will analyze how social, economic, and historical forces shape film art, the development of global media culture, and how cinema communicates as an art form. CSU, UC (credit limits may apply to UC - see counselor)

FTVE-282  American Cinema 1950 to the Present
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly FILM-282

This course is a survey of major trends in American Cinema from the demise of the studio system in the 1950's to the present. Students will view films from notable artists and movements that have influenced the development of film arts around the world. In addition, students will analyze how social, economic, and historical forces shape film art, the development of global media culture, and how cinema communicates as an art form. CSU, UC

FTVE-283  World Cinema 1960 to the Present
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly FILM-283

This course provides 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. 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 will be stressed. CSU, UC

FTVE-295  Occupational Work Experience Education in FTVE
1-4 units  SC
- May be repeated three times
- Variable hours
- Note: In order to enroll in FTVE-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

FTVE-295 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. Five hours work per week or seventy-five hours work per term is equal to one unit. Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU
FTVE-296  Internship in Occupational Work Experience Education in FTVE

1-4 units  SC
- May be repeated three times
- Variable hours
- Note: In order to enroll in the FTVE-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

FTVE-296 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

FTVE-298  Independent Study

.5-3 units  SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office is required.
- Formerly BCA-298 and FILM-298

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

FTVE-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 BCA-299 and FILM-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

FRENCH – FRNCH

Toni Fannin, Interim Dean
Applied and Fine Arts
Business and Foreign Language Building, Room 204

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

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in arts degree

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.

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.
French

Students must complete at least 20 units from the list of core courses. The core courses provide students with the essential grammar of the language, culture and basic literature of the francophone world. Students who have no prior knowledge of French will complete the first four courses in the list for a total of 20 units. Students with prior knowledge of French may start at the second term level and take fifth and sixth terms to achieve a total of 21 units.

**Complete a minimum of 20 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRNCH-120</td>
<td>First Term French</td>
<td>5</td>
</tr>
<tr>
<td>FRNCH-121</td>
<td>Second Term French</td>
<td>5</td>
</tr>
<tr>
<td>FRNCH-220</td>
<td>Third Term French</td>
<td>5</td>
</tr>
<tr>
<td>FRNCH-221</td>
<td>Fourth Term French</td>
<td>5</td>
</tr>
<tr>
<td>FRNCH-230</td>
<td>Fifth Term French</td>
<td>3</td>
</tr>
<tr>
<td>FRNCH-231</td>
<td>Sixth Term French</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total minimum required units**: 20

---

**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.

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

This certificate of achievement provides students, prospective employers and others with documented evidence of persistence and academic accomplishment in the language. The certificate requires completion of at least 13 units from one of the following lists of courses. Students may not take a credit/no credit option for required courses and each course must be completed with a "C" grade or higher.

**List A**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRNCH-120</td>
<td>First Term French</td>
<td>5</td>
</tr>
<tr>
<td>FRNCH-121</td>
<td>Second Term French</td>
<td>5</td>
</tr>
<tr>
<td>FRNCH-220</td>
<td>Third Term French</td>
<td>5</td>
</tr>
<tr>
<td>FRNCH-221</td>
<td>Fourth Term French</td>
<td>5</td>
</tr>
<tr>
<td>FRNCH-230</td>
<td>Fifth Term French</td>
<td>3</td>
</tr>
<tr>
<td>FRNCH-231</td>
<td>Sixth Term French</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total minimum required units**: 13

**FRNCH-120 First Term French**

5 units SC

- 90 hours lecture per term
- **Note**: This course is equivalent to two years of high school study.

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 per term
- **Prerequisite**: FRNCH-120 or two years of high school study or equivalent
- **Note**: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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 per term
- **Note**: This course does not satisfy major or general education requirements.

This is the first term of the conversational French series. Basic grammar and vocabulary as well as an introduction to French culture will also be covered. CSU

**FRNCH-156 Second Term Conversational French**

3 units SC

- 54 hours lecture per term
- **Recommended**: FRNCH-155 or equivalent
- **Note**: This course does not satisfy major or general education requirements.

This is the second term of the conversational French series. Emphasis will be placed on more advanced grammar and vocabulary to expand beyond the self to conversations of a more general nature. Comprehension will be reinforced through listening practice. CSU
FRNCH-157 Third Term Conversational French
3 units SC
- 54 hours lecture 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 per term
- Prerequisite: FRNCH-121 or three years of high school study or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.
In this course, students develop 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 per term
- Prerequisite: FRNCH-220 or four years of high school study or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.
Students will learn advanced grammar. 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
- Prerequisite: FRNCH-221 or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.
Students will further development of their language skills through student preparation and presentation of reports through intensive studies of literary works. This course is conducted entirely in French. (This is a continuation of FRNCH 221.) CSU, UC

FRNCH-231 Sixth Term French
3 units SC
- 54 hours lecture per term
- Prerequisite: FRNCH-230 or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.
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 is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

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

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

**Possible career opportunities**

Geography is an interdisciplinary study focusing on the spatial relations of physical, cultural, and economic systems of our world. As such, geographers are employed in a wide array of fields in many capacities such as: city/county planning; surveying; cartography; aerial photographic interpretation; remote sensing; environmental studies; meteorology; GIS (geographic information systems); and GPS (global positioning systems). Geographers are employed by private sector firms, government and non-profit organizations. Many career options may require more than two years of college study.

Cultural geography careers include geography education at many levels, analyst, consultant and planner. Most career options require more than two years of college study.

**Program-level student learning outcomes**

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

**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.

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 Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTHR-130</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-120</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-130</td>
<td>Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-135</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Map Design and Visualization</td>
<td>3</td>
</tr>
<tr>
<td>SOCIO-131</td>
<td>The Urban Community</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 18

**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.

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 a 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>GEOG-120</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-121</td>
<td>Physical Geography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-130</td>
<td>Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-135</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-140</td>
<td>Introduction to Weather</td>
<td>3</td>
</tr>
</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>GEOG-126</td>
<td>Introduction to Geographic Information</td>
<td>3</td>
</tr>
<tr>
<td>ANTHR-130</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-129</td>
<td>Field Data Acquisition and Management</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-160</td>
<td>Introduction to Remote Sensing</td>
<td>4</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Map Design and Visualization</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 6 units from any course not used above or:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTHR-126</td>
<td>Introduction to Archeological Field Methods</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-128</td>
<td>Ecology and Field Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-170</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-133</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-124</td>
<td>Thinking and Communicating Geospatially</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-295</td>
<td>Occupational Work Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>GEOL-120</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 19

**Associate in science degree**

Geographic Information Systems/GPS

Students completing the program will be able to...

A. analyze the inter-disciplinary applications of GIS, GPS, and remote sensing.

B. synthesize data from various sources and different formats for spatial analyses.

C. apply spatial tools and techniques in a research or work environment.

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 results within a single setup. Most local, state, and federal government agencies use GIS, as do businesses, planners, architects, foresters, geologists and a host of other occupations. Students learn technical and analytical skills for research as well as practical skills necessary to enter the job market and obtain positions with such titles as GIS technician, GIS specialist, GIS analyst, GIS programmer, GIS coordinator, GIS supervisor and GIS manager. To earn a degree, students must complete each course used to meet a major requirement with a “C” grade or higher and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

**major requirements:**

<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</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-126</td>
<td>Advanced Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-129</td>
<td>Field Data Acquisition and Management</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-160</td>
<td>Introduction to Remote Sensing</td>
<td>4</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Map Design and Visualization</td>
<td>3</td>
</tr>
<tr>
<td>COMSC-101</td>
<td>Computer Literacy</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-110</td>
<td>Introduction to Programming</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-120</td>
<td>SQL Programming</td>
<td>4</td>
</tr>
<tr>
<td>COMSC-138</td>
<td>Advanced Microsoft Office Using Visual Basics for Applications (VBA)</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>

**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>ANTHR-126</td>
<td>Introduction to Archeological Field Methods</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-128</td>
<td>Ecology and Field Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-170</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>ENGT-126</td>
<td>Computer Aided Design and Drafting - AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-133</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-124</td>
<td>Thinking and Communicating Geospatially</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-295</td>
<td>Occupational Work Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>GEOL-120</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 28

**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.

The meteorology major at Diablo Valley College offers students the opportunity to prepare for a range of professions through the study of meteorology as an applied science. Students will be prepared to transfer to UC, CSU and other four-year colleges and universities to earn a baccalaureate degree. DVC prepares students to pursue careers in government, private forecasting and broadcast meteorology.

The DVC meteorology major consists of 18 units of required core courses through which students develop an understanding of the atmosphere, the physical principles governing weather, the spatial distribution of weather and how the atmosphere links to other components of earth’s physical environment.
The DVC meteorology major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU GE). Option 1 (DVC General Education) is not generally advised.

To earn an associate in science degree with a major in meteorology, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major, and complete general education requirements as listed in the catalog. Certain courses may satisfy both major and general education requirements; however, the units are only counted once.

major requirements:  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-120</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-121</td>
<td>Physical Geography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-135</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-140</td>
<td>Introduction to Weather</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Map Design and Visualization</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-120</td>
<td>General College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>total minimum required units</td>
<td>18</td>
</tr>
</tbody>
</table>

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.

The physical geography major at Diablo Valley College offers students the opportunity to prepare for a range of professions through the study of a broad spectrum of courses related to the physical environment. Students will be prepared to transfer to UC, CSU and other four-year colleges and universities to earn a baccalaureate degree. DVC hones students' spatial and analytical skills while preparing them for careers in spatial technologies and environmental sciences.

The DVC physical geography major consists of 24 units of study. Students are required to take 14 units of core courses in which they develop an understanding of the physical environment and learn how to acquire, map and analyze spatial data relevant to the physical environment.

The DVC physical geography major is intended for transfer. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select General Education Option 2 (IGETC) or Option 3 (CSU 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>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-120</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-121</td>
<td>Physical Geography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-135</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-140</td>
<td>Introduction to Weather</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-141</td>
<td>Introduction to Weather Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG-162</td>
<td>Map Design and Visualization</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>total minimum required units</td>
<td>18</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-126</td>
<td>Ecology and Field Biology</td>
<td>4</td>
</tr>
<tr>
<td>GEOG-125</td>
<td>Introduction to Geographic Information</td>
<td></td>
</tr>
<tr>
<td>GEOG-127</td>
<td>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>
</tr>
<tr>
<td>GEOL-125</td>
<td>Geology of California</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>total minimum required units</td>
<td>18</td>
</tr>
</tbody>
</table>

Certificate of achievement  

Geographic information systems/Global positioning system

Students completing the program will be able to...

A. analyze the inter-disciplinary applications of GIS, GPS, and remote sensing.

B. apply spatial tools and techniques in a research or work environment.

C. synthesize data from various sources and different formats for spatial analyses.

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.
Certificate of accomplishment

Geographic information systems/Global positioning system

Students completing the program will be able to:

A. analyze the inter-disciplinary applications of GIS, GPS, and remote sensing.
B. synthesize data from various sources and different formats for spatial analyses.
C. apply spatial tools and techniques in a research or work environment.

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: units
GEOG-125 Introduction to Geographic Information Systems (GIS) 3
GEOG-126 Advanced Geographic Information Systems 3
GEOG-129 Field Data Acquisition and Management 3
GEOG-160 Introduction to Remote Sensing 4
GEOG-162 Map Design and Visualization 3

plus at least 6 units from:
COMSC-101 Computer Literacy 4
COMSC-110 Introduction to Programming 4
COMSC-120 SQL Programming 4
COMSC-138 Advanced Microsoft Office Using Visual Basic for Applications (VBA) 2
COMSC-172 UNIX and Linux Administration 2
COMSC-255 Programming with Java 4

plus at least 6 units from:
ANTHR-126 Introduction to Archeological Field Methods 3
BIOSC-126 Ecology and Field Biology 4
BIOSC-170 Environmental Science 3
ENGT-126 Computer Aided Design and Drafting - AutoCAD 3
GEOG-120 Physical Geography 3
GEOG-121 Physical Geography Laboratory 1
GEOG-124 Thinking and Communicating Geospatially 3
GEOG-160 Introduction to Remote Sensing 4
GEOG-162 Map Design and Visualization 3
GEOG-295 Occupational Work Experience Education in GEOG 1-4
GEOG-298 Independent Study 0.5-3
GEOL-120 Physical Geology 3
GEOL-122 Physical Geology Laboratory 1

total minimum required units 28

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. C-ID GEOG 111, 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-101 or equivalent
This course provides an introduction to Geographic Information Systems (GIS) as a tool for spatial analysis. GIS concepts, techniques and methodologies are covered and laboratory activities are used to reinforce lecture concepts. The course provides preparation for advanced university level courses in spatial analysis or for entry level positions in GIS-related fields. C-ID GEOG 155, CSU, UC

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-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
This course is a geographic perspective of physical, cultural, political and economic characteristics of countries and regions of the world. Topics include a general survey of world place locations, influence of geographic factors on international cooperation and conflict, and a 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
• 54 hours lecture per term
• Recommended: MATH-090 or equivalent
This introductory course in meteorology 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. Climatology as a scientific study and the Earth's climatic history are introduced. The course will examine current research in climate modeling and 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
This laboratory course is a supplement to GEOG-140. It includes coverage of fundamental concepts in meteorology and measurement techniques including selected mathematical concepts used to develop 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  
3 units SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: COMSC-101 or equivalent  
This course introduces the basic principles of remote sensing techniques, including aerial photographs, satellite and LIDAR images. We teach techniques to collect data about the earth, how to interpret such data and how to map with the help of image processing software and geographic information systems. CSU, UC

GEOG-162 Map Design and Visualization  
3 units SC  
- 36 hours lecture/54 hours laboratory per term  
- Recommended: MATH-090 or MATH-090SP or MATH-090E or equivalent  
This course introduces basic principles of mapping and representation of spatial data using conventional and computerized cartographic techniques and is designed to develop a better understanding of maps, map design, and map interpretation. Elements of map such as scale, distance, direction, and map projections as well as cartographic techniques of data analysis, processing, visualization, and representation are examined in detail. CSU, UC

GEOG-295 Occupational Work Experience Education in GEOG  
1-4 units SC  
- May be repeated three times  
- Variable hours  
- Note: In order to enroll in GEOG-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

GEOG-295 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. Five hours work per week or seventy-five hours work per term is equal to one unit. Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

GEOG-298 Independent Study  
.5-3 units SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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
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-195 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-160 Introduction to Remote Sensing ............................. 4
- GEOG-162 Map Design and Visualization ............................. 3
- GEOL-125 Geology of California .......................................... 3
- GEOL-135 Introduction to Field Geology .............................. 2

**total minimum required units** 36

**Associate in science 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.

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 of science 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 a 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>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>CHEM-121</td>
<td>General College Chemistry II</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>GEOL-120</td>
<td>Physical Geology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GEOL-121</td>
<td>Earth and Life Through Time</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GEOL-122</td>
<td>Physical Geology Laboratory</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GEOL-124</td>
<td>Earth and Life Through Time Laboratory</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MATH 192</td>
<td>Analytic Geometry and Calculus I</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>MATH 193</td>
<td>Analytic Geometry and Calculus II</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**Total Minimum Required Units:** 28

#### GEOL-120  Physical Geology

3 units  SC  
- 54 hours laboratory per term  
- Prerequisite: GEOL-121 or equivalent (may be taken concurrently)

This is a general course in geologic science that encompasses nearly all phases of geology. Students will gain an appreciation and understanding of the fundamental processes that 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. Students will practice quantitative reasoning and mathematical concepts. C-ID GEOL 110, CSU, UC

#### GEOL-121  Earth and Life Through Time

3 units  LR  
- 54 hours lecture per term  
- Prerequisite: GEOL-120 or equivalent and GEOL-122 or equivalent

This course covers 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 that have led to the features that are observed today. C-ID GEOL 110, CSU, UC

#### GEOL-122  Physical Geology Laboratory

1 unit  SC  
- 54 hours laboratory per term  
- Co-requisite: GEOL-120 (may be taken previously) or equivalent  
- Recommended: MATH-090 or MATH-090E or MATH-090SP or one year of high school algebra and eligibility for ENGL-122 or equivalent  
- Note: Field trips may be included in the course

This course is the laboratory component to Physical Geology (GEOL-120). Topics include the description and identification of minerals and all types of rocks, studies of topographic and geologic maps, as well as the internal structure of the earth using cross-sections. Laboratory studies of earthquakes, tectonic activity, and surficial features of the earth are included. 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)

This is a laboratory course on 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  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent

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-130  Earth Science

4 units  LR  
- 54 hours lecture/54 hours laboratory per term  
- Recommended: MATH-090 or MATH-090E or MATH-090SP or one year of high school algebra and eligibility for ENGL-122 or equivalents

This course introduces the essentials of earth science including the geosphere, atmosphere, hydrosphere, and solar system. The interactions between physical and chemical systems of the Earth such as the tectonic cycle, rock cycle, hydrologic cycle, weather and climate are explored. C-ID GEOL 121, 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 is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

Toni Fannin, Interim 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 are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

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 the following list of courses. Students may not take a credit/no credit option for required courses and each course must be completed with a “C” grade or higher.

complete at least 13 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRMAN-120</td>
<td>First Term German</td>
<td>5</td>
</tr>
<tr>
<td>GRMAN-121</td>
<td>Second Term German</td>
<td>5</td>
</tr>
<tr>
<td>GRMAN-220</td>
<td>Third Term German</td>
<td>5</td>
</tr>
<tr>
<td>GRMAN-221</td>
<td>Fourth Term German</td>
<td>5</td>
</tr>
<tr>
<td>GRMAN-230</td>
<td>Fifth Term German</td>
<td>3</td>
</tr>
<tr>
<td>GRMAN-231</td>
<td>Sixth Term German</td>
<td>3</td>
</tr>
</tbody>
</table>

total minimum required units 13
GRMAN-120  First Term German
5 units  SC
• 90 hours lecture per term
• Note: This course is equivalent to two years of high school study.

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 per term
• Prerequisite: GRMAN-120 or two years of high school study or equivalent
• Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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-220  Third Term German
5 units  SC
• 90 hours lecture per term
• Prerequisite: GRMAN-121 or three years of high school study or equivalent
• Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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 per term
• Prerequisite: GRMAN-220 or four years of high school study or equivalent
• Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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
• Prerequisite: GRMAN-221 or equivalent
• Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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
• Prerequisite: GRMAN-230 or equivalent
• Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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
Health science

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 that can be used are HSCI-124, 140, 164 and 170.

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

Possible career opportunities
A health science graduate may work in federal, state or county health agencies, community clinics, voluntary health agencies and hospitals, insurance or pharmaceutical companies.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

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 individual and social-cultural risk factors for disease and disability and be taught behavior-changing skills and public health strategies to improve quality and quantity of life, 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 public health profession.

Students may apply the knowledge to work areas, such as workplace wellness, hospital health education center, state or university health center, health club, and/or government and public health agencies that focus on improving individual and societal health. Students wishing to pursue a career in the field of health education should consider this two-year program as it satisfies the general education and/or elective requirements necessary to transfer, and will prepare students for a bachelor’s of science (B.S.) degree program in the field of public health science.

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-130 Introduction to Public Health</td>
<td>3</td>
</tr>
</tbody>
</table>

plus at least 4 units from:
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-102</td>
<td>Fundamentals of Biological Science with Laboratory</td>
</tr>
<tr>
<td>BIOSC-117</td>
<td>Human Biology with Laboratory</td>
</tr>
<tr>
<td>BIOSC-119</td>
<td>Fundamentals of Microbiology</td>
</tr>
<tr>
<td>BIOSC-139</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>BIOSC-140</td>
<td>Human Physiology</td>
</tr>
<tr>
<td>BIOSC-146</td>
<td>Principles of Microbiology</td>
</tr>
</tbody>
</table>

plus at least 3 units from:
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI-127</td>
<td>Drugs, Health and Society</td>
</tr>
<tr>
<td>HSCI-135</td>
<td>Health and Social Justice</td>
</tr>
<tr>
<td>HSCI-140</td>
<td>Human Sexuality</td>
</tr>
<tr>
<td>HSCI-164</td>
<td>Health and Healing Systems: Cross-Cultural Perspectives</td>
</tr>
<tr>
<td>HSCI-170</td>
<td>Women’s Health</td>
</tr>
<tr>
<td>HSCI-298</td>
<td>Independent Study</td>
</tr>
<tr>
<td>NUTRI-160</td>
<td>Nutrition: Science and Applications</td>
</tr>
</tbody>
</table>

plus at least 6 units from any course not used above, or:
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-240</td>
<td>Business Statistics</td>
</tr>
<tr>
<td>MATH-142</td>
<td>Elementary Statistics with Probability</td>
</tr>
<tr>
<td>CHEM-108</td>
<td>Introduction to Chemistry</td>
</tr>
<tr>
<td>PSYCH-101</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>SOCIO-120</td>
<td>Introduction to Sociology</td>
</tr>
</tbody>
</table>

total minimum required units 19
HSCI-100  Introduction to Health Care Careers

3 units  SC
• 54 hours lecture per term
This course provides an overview of health care careers and their respective career paths, educational and skill requirements and professional responsibilities. Basic skills required by health-related careers such as emphasizing personal attributes, demonstrating professionalism, engaging in teamwork, and building communication skills will be covered. This course is designed to assist students in making educational and career decisions for a wide spectrum of health care occupations. CSU

HSCI-124  Health and Wellness

3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: The nutrition, tobacco and substance abuse components of this course fulfill a portion of the state health education requirements for a teaching credential. For CPR training see HSCI-131.
This course focuses on the exploration of major health issues and behaviors in the various dimensions of health. Emphasis is placed on individual responsibility for personal health and the promotion of informed, positive health behaviors. Topics include (but not limited to) nutrition, exercise, weight control, mental health, stress management, violence, substance abuse, reproductive health, disease prevention, aging, healthcare, and environmental hazards and safety. C-ID PHS 101, 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, epidemiology and toxicology of substance abuse and its relevance to personal and public health. The biological, psychological and social effects of drug use on the health of individuals and on society is emphasized. Students will be introduced to concepts such as substance use versus misuse, abuse and dependence, and will learn about the risk factors, signs and symptoms, mental illnesses, treatments and prevention theories associated with addiction. The pharmacological classification of psychoactive substances, illicit and licit, and their neurological and physiological effects on the human brain will be explored. An extensive analysis of health statistics identifying trends of usage, dependency, and the controversies around the social, political, and economic factors related to the legal and illegal distribution, marketing and government regulation of drugs is also covered. Current options for recovery and local resources will be reviewed. C-ID PHS 103, 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 presents terminology relevant to many allied health care fields. The construction, pronunciation, spelling, definition and common usage for all medical terms in anatomy, physiology, pathology and health care will be covered. CSU

HSCI-130  Introduction to Public Health

3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course provides an introduction to the discipline of public health. Students will gain an understanding of the basic concepts and terminologies of public health, and the history and accomplishments of public health officials and agencies. An overview of the functions of various public health professions and institutions, and an in-depth examination of the core public health disciplines is covered. Topics of the discipline include the epidemiology of infectious and chronic disease; prevention and control of diseases in the community including the analysis of the social determinants of health and strategies for eliminating disease, illness and health disparities among various populations; community organizing and health promotion programming; environmental health and safety; global health; and healthcare policy and management. C-ID PHS 101, CSU, UC
Health science

HSCI-131  Cardiopulmonary Resuscitation (CPR)
0.5 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-135  Health and Social Justice
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course provides an introduction to the health inequities in the United States that stem from unequal living conditions. Students will explore how education, socioeconomic status, racism and gender shape health epidemics and policy development. Fundamental theories to advocate for health and social justice will be presented. C-ID PHS 102, CSU, UC

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-296  Internship in Occupational Work Experience Education in HSCI
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in the HSCI-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.

HSCI-296 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU
HSCI-298  Independent Study
.5-3 units SC
- Variable hours
- Note: Submission of acceptable educational contract to department and Instruction Office is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

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

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

HEATING, VENTILATION, AIR CONDITIONING, REFRIGERATION - HVACR

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

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, overload controls, and boilers. Reading and drawing of schematic diagrams, troubleshooting, and safe electrical practices are also covered.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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 motor.
C. distinguish between mechanical and electrical controls.
D. demonstrate basic control design 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.

In collaboration with Plumbers-Steamfitters-Refrigeration Union Local 342 www.us42.org, DVC currently offers three five-year apprenticeship programs: sheet metal fitting, 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.

major requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVACR-110</td>
<td>Beginning Electrical Theory</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-111</td>
<td>Mechanical Refrigeration Theory</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-112</td>
<td>Advanced Electrical Theory/Beginning Schematics</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-113</td>
<td>The Refrigeration Cycle</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-114</td>
<td>Intermediate Electrical I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-115</td>
<td>Intermediate Mechanical Refrigeration I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-116</td>
<td>Intermediate Electrical II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-117</td>
<td>Intermediate Mechanical Refrigeration II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-118</td>
<td>Electrical Troubleshooting I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-119</td>
<td>Electrical Troubleshooting II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-120</td>
<td>Introduction to Direct Digital Controls</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-121</td>
<td>Introduction to Variable Frequency Drives</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-122</td>
<td>Introduction to Market Refrigeration Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-123</td>
<td>Introduction to Pneumatic Controls</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-124</td>
<td>Introduction to Boilers</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-125</td>
<td>Advanced Compressor and Motor Theory</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-126</td>
<td>Start Test Balance: Water Side I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-127</td>
<td>Start Test Balance: Air Side I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-128</td>
<td>Start Test Balance: Water Side II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-129</td>
<td>Start Test Balance: Air Side II</td>
<td>1.5</td>
</tr>
</tbody>
</table>

total minimum required units 30
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 motor.  
D. distinguish between mechanical and electrical controls.  
E. demonstrate basic control design that have applications to the HVACR industry.  
F. identify the different types of controllers for the HVACR industry.  

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 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 achievement also meet some of the requirements of the major for the associate in science degree.

<table>
<thead>
<tr>
<th>required courses:</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVACR-112 Advanced Electrical Theory/Beginning Schematics</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-113 The Refrigeration Cycle</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-114 Intermediate Electrical I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-115 Intermediate Mechanical Refrigeration I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-116 Intermediate Electrical II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-117 Intermediate Mechanical Refrigeration II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-118 Electrical Troubleshooting I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-119 Electrical Troubleshooting II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-120 Introduction to Direct Digital Controls</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-121 Introduction to Variable Frequency Drives</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-122 Introduction to Market Refrigeration Schematics</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-123 Introduction to Pneumatic Controls</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-124 Introduction to Boilers</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-125 Advanced Compressor and Motor Theory</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-126 Start Test Balance: Water Side I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-127 Start Test Balance: Air Side I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-128 Start Test Balance: Water Side II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-129 Start Test Balance: Air Side II</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**total minimum required units** 7.5

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 motor.  
F. distinguish between mechanical and electrical controls.  

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 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 major for the associate in science degree.

<table>
<thead>
<tr>
<th>required courses:</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVACR-110 Beginning Electrical Theory</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-111 Mechanical Refrigeration Theory</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-112 Advanced Electrical Theory/Beginning Schematics</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-113 The Refrigeration Cycle</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-114 Intermediate Electrical I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-115 Intermediate Mechanical Refrigeration I</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-116 Intermediate Electrical II</td>
<td>1.5</td>
</tr>
<tr>
<td>HVACR-117 Intermediate Mechanical Refrigeration II</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**total minimum required units** 7.5
HVACR-110  Beginning Electrical Theory  
1.5 units  LR  
- 18 hours lecture/36 hours laboratory per term  
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the union local responsible for the section.  

This course introduces concepts of electrical principles used in air conditioning and refrigeration. Topics include meters, circuits, contactors, relays, thermostats, pressure switches, motors, overloads, circuitry and troubleshooting. This course will also cover safety as it pertains to the Heating Ventilation Air Conditioning and Refrigeration (HVACR) industry.

HVACR-111  Mechanical Refrigeration Theory  
1.5 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.

HVACR-112  Advanced Electrical Theory/Beginning Schematics  
1.5 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  
1.5 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  
1.5 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  
1.5 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  
1.5 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
1.5 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
1.5 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
1.5 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
1.5 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
1.5 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 (VFDs), applications of use, and limited troubleshooting. Parameterization for start up, open loop, closed loop, floating point, and preset speed profiles will be covered.

HVACR-122 Introduction to Market Refrigeration Systems
1.5 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
1.5 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
1.5 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
1.5 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 examined. Prominent Trane and Carrier compressors will be examined.

HVACR-126 Start Test Balance: Water Side I
1.5 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. 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-127 Start Test Balance: Air Side I
1.5 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
1.5 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
1.5 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, developing critical thinking and other useful skills for a broad range of careers, including education, public service and law. Most career options require more than two years of college study.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.
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.

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 CSU 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 a 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>
<thead>
<tr>
<th>major requirements:</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST-120</td>
<td>History of the United States before 1865</td>
</tr>
<tr>
<td>HIST-121</td>
<td>History of the United States after 1865</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>HIST-140</td>
<td>History of Western Civilization to the Renaissance</td>
</tr>
<tr>
<td>HIST-180</td>
<td>World History to 1500</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>HIST-141</td>
<td>History of Western Civilization since the Renaissance</td>
</tr>
<tr>
<td>HIST-181</td>
<td>World History since 1500</td>
</tr>
<tr>
<td>HIST-124</td>
<td>History of California</td>
</tr>
<tr>
<td>HIST-125</td>
<td>History of the United States: A Mexican American Perspective</td>
</tr>
<tr>
<td>HIST-126</td>
<td>The American West</td>
</tr>
<tr>
<td>HIST-127</td>
<td>African American Perspective History of the US to 1865</td>
</tr>
<tr>
<td>HIST-128</td>
<td>African American Perspective History of the US after 1865</td>
</tr>
<tr>
<td>HIST-129</td>
<td>History of Asians and Pacific Islanders in the United States</td>
</tr>
<tr>
<td>HIST-135</td>
<td>History of Latin America: The Colonial Period</td>
</tr>
<tr>
<td>HIST-136</td>
<td>History of Latin America: The National Period</td>
</tr>
<tr>
<td>HIST-150</td>
<td>History of East Asia (to 1600)</td>
</tr>
<tr>
<td>HIST-151</td>
<td>History of East Asia (from 1600 - Present)</td>
</tr>
<tr>
<td>HIST-170</td>
<td>History of Women in the United States before 1877</td>
</tr>
<tr>
<td>HIST-171</td>
<td>History of Women in the United States after 1865</td>
</tr>
<tr>
<td>HIST-122</td>
<td>Critical Reasoning in History</td>
</tr>
<tr>
<td>HIST-142</td>
<td>Contemporary European History</td>
</tr>
<tr>
<td>total minimum required units</td>
<td>18</td>
</tr>
</tbody>
</table>

HIST-120  History of the United States before 1865
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course presents a multicultural history of the United States before 1865. Students will explore social, political, cultural and economic experiences and contributions of African American, Asian American, European American, Latino/a American, and Native American men and women in the development of United States society. The origins, nature, and impact of the U.S. Constitution on United States history before 1865 including the political philosophies of the framers, the operation of political institutions, and the rights and obligations of citizens will also be covered. C-ID HIST 130, CSU, UC

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 presents a multicultural history of the United States from 1865 to present. Students will explore social, political, cultural, and economic factors in the development of United States’ society. Topics will include the operation and the continuing evolution of local, state and federal governments under the U.S. and California constitutions and the experiences of groups from diverse backgrounds such as European Americans, Asian Americans, African Americans, Native Americans and Latino/a Americans. The growing international role of the United States from the late nineteenth century to the present will also be examined. C-ID HIST 140, CSU, UC
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 presents an overview of United States (U.S.) history from 1848 to the present with an emphasis on the role of peoples of Mexican-origin - both immigrants and U.S. born. History from social, political, economic, and cultural perspectives will be examined. 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 are emphasized. The impact of U.S. attitudes and policies on peoples of Mexican-origin will also be 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 surveys the movement of the American people from the Atlantic seaboard across North America and into the Pacific, including the history of western half of the current United States of America. Focusing on the Westward Movement during the nineteenth century, this course examines the historical experience from a social, political, economic, and cultural perspective into the present. The role of the diverse ethnic and racial communities of the West and their interaction with one another, their contributions to the construction of the American national character, and the experience of the West as a moving borderland with other nations, societies and cultures will also be emphasized. 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 presents a survey of the history of the United States from the perspective of African Americans and compares the African experience with the experiences of Europeans, Native Americans, Asian Americans and Latinos. Early African presence in the Americas, the trade in African slaves, and explore political, economic, demographic and cultural influences shaping African American life and culture prior to 1865 will be examined. The U.S. government and the Constitution, the California government and Constitution, and other constitutional models for comparison and contrast will also be covered. CSU, UC

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 presents a survey of the history of the United States from the perspective of African Americans and compares the African American experience with that of Native peoples, Europeans, Asian Americans and Hispanics/Latinos after 1865. The course explores the economic, cultural, institutional, political history of African Americans from the post-Civil War period to the present. The African American relationship with national, California state and local governments will also be covered. CSU, UC
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
This course provides a comparative analysis of Asian American History from 1848 to the present. Topics include an exploration of Asian American perspectives; immigration and settlement patterns; labor, legal, political and social history. A comparative historical approach, placing Asian immigration within the context of global interdependence and inequality, frames the course materials. This course will examine migration theories and patterns, the politics and policies of U.S. immigration, resettlement patterns, and the reconstruction of identities and social networks. The three periods of Asian Immigration: Before World War II; during and after World War II and the Cold War; and after 1965 to the present will be explored. CSU, UC

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. C-ID HIST 170, 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
This course presents the history of western civilization from the 17th century to the present time. Emphasis will be placed on how the structures and outlook of modern civilization emerged, by tracing political, economic, social, cultural, and intellectual developments from late medieval to contemporary times. The development of modern Europe will also be explored. C-ID HIST 180, CSU, UC

HIST-142  Contemporary European History
3 units  SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is a study of political, social, economic and cultural developments in recent European history from the late 19th century to the present. Students will examine the influence of Europe in international events in recent history. Emphasis is placed on the impact of ideologies, the origins of wars, the ongoing effects of conflict, and progress toward coexistence. The impact of United States foreign policy in twentieth century Europe will be explored, as will the important process of decolonization and the European Union. 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-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, with an emphasis on women's life experiences within the context of broader historical changes. We will examine the commonalities of women's experiences and explore the impacts of race, law, ethnicity, class, and region on women's lives. This course also explores how women both fostered and were affected by social, political, economic, legal and cultural transformations in the United States. The impact of the U.S. and California Constitutions on women's life experiences and the activities of federal, state, and local governments will also be assessed. CSU, UC  

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. Students will examine the commonalities of women's experiences and explore the impacts of race, class, gender and region on women's lives. This course will explore how women fostered and were affected by social, political, economic, and cultural transformations in the United States. The impact of the U.S. and California Constitutions and the activities of federal, state, and local governments on the experiences of women will also be covered. CSU, UC  

HIST-180  World History to 1500  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This course presents a survey of world history that emphasizes the dynamic interaction of cultures and peoples and the broad patterns of global history to 1500. The roles of social, political, economic, cultural, and intellectual forces as they shape the major world civilizations will be presented. The legacy of these civilizations and their contributions to present cultures will also be emphasized. C-ID HIST 150, CSU, UC  

HIST-181  World History since 1500  
3 units  SC  
• 54 hours lecture per term  
• Recommended: Eligibility for ENGL-122 or equivalent  
This course surveys world history from 1500 to the present, with an emphasis on the dynamic interaction of cultures and peoples around the globe. Emphasis will be placed on the social, political, economic, cultural, and intellectual forces that shaped the major world societies in recent centuries and their impact worldwide. The legacy of these forces worldwide and their contributions to present-day problems, including ongoing tensions between tradition and modernity will be discussed. The course covers major regions of the world including Asia, Africa, Europe, the Middle East, North and South America, and interactions between these regions since 1500, emphasizing belief systems, environmental transformations, issues of family and gender, as well as political and economic organization. C-ID HIST 160, CSU, UC  

HIST-298  Independent Study  
.5-3 units  SC  
• Variable hours  
• Note: Submission of acceptable educational contract to department and Instruction Office is required.  
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU  

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

HORTICULTURE – HORT

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

Possible career opportunities
The horticulture program prepares students for numerous state licenses and industry certificates. State licenses include landscape contractor and pest control operator. Industry certifications include: nursery person, arborist, landscape technician, maintenance technician, and irrigation designer. Career choices in horticulture include: nursery technician, propagator, plant breeder, nursery manager, greenhouse grower, greenhouse manager, garden center manager, arborist/tree worker, landscape architect, landscape designer, grounds manager/municipal, landscape contractor, landscape maintenance contractor, golf course manager, and pest controller/advisor. Some career options may require more than two year of college work.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

This certificate of achievement prepares students for employment as arborists in a variety of settings including public and private gardens, parks, golf courses, institutions, municipalities, utilities, government agencies, and commercial and residential tree care services. It includes classroom, laboratory, and work experience/internships. Completion of the certificate requirements will also prepare students to sit for the International Society of Arboriculture (ISA) certification.

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/or on weekends.

<table>
<thead>
<tr>
<th>required courses:</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT-110</td>
<td>4</td>
</tr>
<tr>
<td>HORT-120</td>
<td>3</td>
</tr>
<tr>
<td>HORT-125</td>
<td>3.5</td>
</tr>
<tr>
<td>HORT-170</td>
<td>4</td>
</tr>
<tr>
<td>HORT-171</td>
<td>1</td>
</tr>
<tr>
<td>HORT-179</td>
<td>4</td>
</tr>
<tr>
<td>HORT 185</td>
<td>1.5</td>
</tr>
<tr>
<td>HORT-187</td>
<td>2</td>
</tr>
<tr>
<td>HORT-296</td>
<td>1-4</td>
</tr>
<tr>
<td>total minimum required units</td>
<td>27</td>
</tr>
</tbody>
</table>

Certificate of achievement

Landscape 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.

This certificate presents the fundamental skills used by landscape designers. Using hand-drawing and digital tools, students will develop designs based upon environments typical of residential and small commercial landscape sites. Through portfolio development and presentations, students will emulate the industry practice of designer/client interaction.

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/or on weekends.

<table>
<thead>
<tr>
<th>required courses:</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT-110</td>
<td>4</td>
</tr>
<tr>
<td>HORT-120</td>
<td>3</td>
</tr>
<tr>
<td>HORT-180</td>
<td>3</td>
</tr>
<tr>
<td>HORT-181</td>
<td>3</td>
</tr>
<tr>
<td>HORT-182</td>
<td>3</td>
</tr>
<tr>
<td>HORT-185</td>
<td>1.5</td>
</tr>
<tr>
<td>HORT-187</td>
<td>2</td>
</tr>
<tr>
<td>HORT-296</td>
<td>1-4</td>
</tr>
<tr>
<td>total minimum required units</td>
<td>25.5</td>
</tr>
</tbody>
</table>

plus at least 3 units from:
| HORT-113         | Plant Materials and their Uses: Winter and Spring     | 3 |
| HORT-114         | Plant Materials and their Uses: Summer and Fall       | 3 |

plus at least 3 units from:
| ARCHI-135        | Digital Tools for Design                        | 3 |
| ARCHI-136        | Digital Tools for Architecture                   | 3 |
Certificate of achievement
Nursery and greenhouse

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.

This certificate provides the skills needed to work in the local nursery industry including plant identification, plant propagation, labeling, nursery sales, marketing and nursery management. The program includes lectures, laboratory, and work experience.

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/or on weekends.

required courses:

- HORT-110 Introduction to Horticulture and Plant Science ........................................... 4
- HORT-113 Plant Materials and their Uses: Winter and Spring ........................................... 3
- HORT-114 Plant Materials and their Uses: Summer and Fall ........................................... 3
- HORT-163 Nursery and Greenhouse Practices ................................................................. 3
- HORT-183 Garden Design ............................................................................................... 1.5
- HORT-185 Site Analysis ................................................................................................. 1.5
- HORT-187 Sustainable Water Management ................................................................. 2
- HORT-296 Internship in Occupational Work Experience Education in HORT .................... 1-4

plus at least 3 units from:

- HORT-111 Plant Propagation and Production: Winter and Spring ................................... 3
- HORT-112 Plant Propagation and Production: Summer and Fall ................................... 3

Certificate of achievement
Plant science and horticulture

Students completing the program will be able to...
A. recommend specific plants for given micro-climates in Contra Costa.
B. describe the impacts of clay soil on root development and water permeability.
C. describe the symptoms and causes of iron chlorosis on landscape plants.
D. identify 10 common nursery pests and recommend Integrated Pest Management controls.

This certificate program is designed to prepare students with the skills, knowledge, and training to enter into local green industry jobs in fields such as landscape installation, maintenance, park service, plant propagation, nursery, and remediation. The certificate provides a strong foundation for students who intend to pursue a baccalaureate degree in horticulture, plant science, and agriculture majors.

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 evenings and/or weekends.

required courses:

- HORT-110 Introduction to Horticulture and Plant Science ........................................... 4
- HORT-120 Soil Science and Management ............................................................ 3
- HORT-121 Soil Science and Management Laboratory ........................................... 1
- HORT-130 Turf Grass Management ........................................................................... 1.5
- HORT-171 Pruning Laboratory .................................................................................. 1
- HORT-187 Sustainable Water Management ................................................................. 2
- HORT-296 Internship in Occupational Work Experience Education in HORT .............. 1-4

plus at least 3 units from:

- HORT-111 Plant Propagation and Production: Winter and Spring ................................... 3
- HORT-114 Plant Materials and their Uses: Summer and Fall ........................................... 3

plus at least 3 units from:

- CONST-135 Construction Processes: Residential ......................................................... 4
- HORT-133 Landscape Construction ............................................................................. 3
- HORT-170 Woody Plants: Identification and Maintenance ........................................... 4

plus at least 3 units from:

- HORT-111 Plant Propagation and Production: Winter and Spring ................................... 3
- HORT-112 Plant Propagation and Production: Summer and Fall ................................... 3

total minimum required units 25.5

Certificate of achievement
Horticulture technician

Students completing the program will be able to...
A. integrate the knowledge of higher plant functions with site analysis.
B. describe local geographical features and their relationship to soils.
C. describe the relationship between plants, soil and water.
D. evaluate plant pruning needs.
This certificate introduces students to the comprehensive field of plant science and horticulture, the green industry. Green industry professionals are responsible for nurturing and protecting our natural resources and integrating them into the built environment. This foundational certificate can lead to further study in the fields of landscape installation, maintenance, park service, plant propagation, nursery, and remediation.

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 evenings and/or weekends.

**Certificate of accomplishment**

**Landscape design fundamentals**

Students completing the program will be able to...

A. apply principles of planting design theory to landscape design projects.
B. prepare rendered documents for presentation.
C. prepare professional level planting plans and schedules, estimating quantity and sizes of plants required.

This certificate incorporates the basic principles of site analysis, plant science, and soil science as applied to landscape design principles. Students are prepared for entry-level positions in the landscape industry focusing on residential settings and small commercial sites.

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 evenings and/or weekends.

**Certificate of accomplishment**

**Nursery technician**

Students completing the program will be able to...

A. identify, alleviate and recommend treatment for diseases and pathogens.
B. describe specific environmental and cultural requirements to grow seasonal common plants.
C. maintain and support nursery operations.

This certificate provides the fundamental skills required for entry-level employment in the nursery industry. It includes classroom and hands-on laboratory experiences.

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/or on weekends.

**Certificate of accomplishment**

**Tree technician**

Students completing the program will be able to...

A. implement tree trimming safety procedures.
B. use field examinations to determine tree problems.
C. diagnose woody plant suitability for given sites.
D. recognize species and the characteristics of a given species.

This program prepares students for employment as assistant tree trimmers, pruners, or fallers working under certified arborists.

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 evenings and/or on weekends.
HORT-110  Introduction to Horticulture and Plant Science
4 units  SC
• 54 hours lecture/54 hours laboratory per term
• Recommended: CHEM-106, MATH-090, and Eligibility for ENGL-122 or equivalents

This course provides an introduction to plant sciences as related to horticulture. Topics include plant morphology, growth processes, propagation, physiology, growth media, biological competitors, and post-harvest factors of food, fiber, ornamental and native plants. CID AG-PS 106L, CSU, UC

HORT-111  Plant Propagation and Production: Winter and Spring
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Prerequisite: HORT-110 (may be taken concurrently) or equivalent
• Recommended: HORT-125 or equivalent

This course introduces plant propagation and production practices for nursery operations, with an emphasis on sexual and asexual reproduction of winter and spring plants. Topics include winter and spring planting specifications, transplanting, fertilizing, plant pest and disease control; structures and site layout; preparation and use of propagating and planting mediums; use and maintenance of common tools and equipment; regulations pertaining to plant production; and new plant introductions in the nursery industry. Students will also participate in greenhouse management, scheduling of plant production, seed-starting, vegetative propagation and the marketing of winter and spring containerized nursery stock. C-ID HORT 111 + HORT 112 = AG - EH 116L, CSU

HORT-112  Plant Propagation and Production: Summer and Fall
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Prerequisite: HORT-110 (may be taken concurrently) or equivalent
• Recommended: HORT-125 or equivalent

This course introduces plant propagation and production practices for nursery operations, with an emphasis on sexual and asexual reproduction of summer and fall plants. Topics include summer and fall planting specifications, transplanting, fertilizing, plant pest and disease control; structures and site layout; preparation and use of propagating and planting mediums; use and maintenance of common tools and equipment; regulations pertaining to plant production; and new plant introductions in the nursery industry. Students will also participate in greenhouse management, scheduling of plant production, seed-starting, vegetative propagation and the marketing of summer and fall containerized nursery stock. C-ID HORT 111 + HORT 112 = AG - EH 116L, CSU

HORT-113  Plant Materials and their Uses: Winter and Spring
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Prerequisite: HORT-110 (may be taken concurrently) or equivalent

This course introduces the identification and uses of common plants in the California landscape that are of special interest in the winter or spring. Topics include native and introduced plant identification, growth habits, cultural and environmental requirements, uses in the landscape. Plants emphasized will come from the current California Association of Nurseries & Garden Centers (CANGC) and Professional Landcare Network (PLANET) Certification Tests Plant Lists. C-ID AG-EH 108L, CSU

HORT-114  Plant Materials and their Uses: Summer and Fall
3 units  SC
• 36 hours lecture/54 hours laboratory per term
• Prerequisite: HORT-110 (may be taken concurrently) or equivalent

This course introduces the identification and uses of common plants in the California landscape that are of special interest in the summer or fall. Topics include native and introduced plant identification, growth habits, cultural and environmental requirements, uses in the landscape. Plants emphasized will come from the current California Association of Nurseries & Garden Centers (CANGC) and Professional Landcare Network (PLANET) Certification Tests Plant Lists. C-ID AG-EH 112L, CSU

HORT-120  Soil Science and Management
3 units  SC
• 54 hours lecture per term
• Prerequisite: HORT-110 or equivalent
• Recommended: CHEM-106, MATH-110 and Eligibility for ENGL-122 or equivalents

This course presents a study of soil science and management of soils. Biology, physics and chemistry are integrated with geological concepts to provide a comprehensive overview of all facets of soil science. Topics covered include soil classification, derivation, use, function and management including erosion, moisture retention, structure, cultivation, organic matter and microbiology. C-ID HORT 120 + HORT 121 = AG-PS 128L, CSU, UC
HORT-121  Soil Science and Management Laboratory  
1 unit  SC  
• 54 hours lecture per term  
• Prerequisite: HORT-110, HORT-120 or equivalents (may be taken concurrently)  
• Recommended: Eligibility for ENGL-122, CHEM-106, MATH-110 or equivalents  
• Formerly HORT-120L  
The lab for soils will include identifying soil types, classifications, reactions, fertility and physical properties. Soil management, biology, chemistry and microbiology will be explored. Regional soils and soil quality are investigated. Laboratory required for transfer to CSU. C-ID HORT 120 + HORT 121 = AG-PS 128L, CSU

HORT-125  Integrated Pest Management  
3.5 units  SC  
• 54 hours/27 hours laboratory per term  
• Prerequisite: HORT-110 (may be taken concurrently) or equivalent  
• Recommended: eligibility for ENGL-122, MATH-110 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 plant, insect and disease pests associated in California. Key concepts in applied ecology of pest and beneficial species, insect, vertebrate and 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-133  Landscape Construction  
3 units  SC  
• 36 hours lecture/54 hours laboratory per term  
• Recommended: HORT-110 and eligibility for ENGL-122 or equivalents  
• Note: This course provides preparation for the C-27 landscape contracting license.  
This course introduces students to the information and skills required to install residential hardscapes using SITESv2 standards. SITES v2’s rating system was developed from research, peer-reviewed literature, case-study precedents, and projects registered in the SITES Pilot Program by a diverse group of experts in soils, water, vegetation, materials, and human health and well-being. It includes best practices in landscape architecture, ecological restoration and related fields. Water conservation, plan reading, tool use and safety, and core sustainability principles are covered. CSU

HORT-148L  California Native Plants Laboratory  
1 unit  SC  
• 54 hours laboratory per term  
• Recommended: HORT-110 or equivalent  
This course presents a study of California plant communities and the environments that shape them. The dominant and typical plant constituents of each vegetation unit, focusing on native species currently used in the nursery industry will be covered. Habitat, soil, and climatic factors will be discussed as related to the plant species established in their natural and horticultural environment, exploring possibilities of integration into residential landscapes. Multiple day field trips to select California vegetation environments are taken to record relevant plant and habitat data. Destinations will vary based on season and term. CSU

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

HORT-160  Plant Propagation  
1.5 units  SC  
• 18 hours lecture/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-170  Woody Plants: Identification and Maintenance
4 units  SC
• 54 hours lecture/36 hours laboratory per term
• Recommended: HORT-110 and eligibility for ENGL-122 or equivalents
• Note: Field trips required. This course meets the plant certification for California Association of Nurserymen, California Landscape Contractor's Licensing and satisfies International Society of Arboriculture Continuing Education units.
• Formerly HORT-143 and HORT-143L

Students will learn the taxonomy, identification, growth habits, landscape values, maintenance requirements and nativities of woody plants used in regional landscapes. Emphasis will be placed on regenerative landscape design with a focus on ecologically appropriate choices. CSU

HORT-171  Pruning Laboratory
1 unit  SC
• 54 hours laboratory per term
• Formerly HORT-137L

This course will provide hands-on experience with winter and spring mechanical modification of common landscape plants, including roses, dormant trees and shrubs, and post-bloom pruning for spring flowering plants. Safety, tool maintenance, tool use, disease prevention and techniques that enhance plant structure will be covered. CSU

HORT-179  Arboriculture
4 units  SC
• 54 hours lecture/54 hours laboratory per term
• Recommended: eligibility for ENGL-122, HORT-110 or equivalents
• Note: This course meets the requirements for the California Association of Nurserypersons and International Society of Arboriculture Continuing Education Units (CEU).

This comprehensive class teaches students how to manage trees in urban and suburban landscapes. Included are the benefits that trees provide, and species profiles, form and ecological functions. Observational analysis skills will be taught in conjunction with scientific knowledge to direct assessment and diagnosis. Tree health subjects and applications include species selection, planting and establishment, pruning, safety, cabling, bracing, staking, watering, fertilizing, and pest control. The focus will be on trees appropriate for Contra Costa soils and micro-climates. 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  Garden Design
1.5 units  SC
• 18 hours lecture/27 hours laboratory per term
• Recommended: HORT-110 or equivalent

This basic design course is intended for students in the nursery and landscape industry as well as interested laypersons and residential homeowners. Fundamental design principles, plant selection, hardscape materials and planting techniques will be covered. Plant selection for seasonal color, energy efficiency and water usage will be introduced. Students will layout a rough site plan overview of a personal garden 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-187  Sustainable Water Management  
2 units  SC  
- 18 hours lecture/54 hours laboratory per term  
- Notes: Field trips will be required  
This course introduces concepts and practices in landscape irrigation and sustainable water. It includes an overview of state and local water delivery systems and water use and supply issues in California. It examines relationships between plants, soils, and water. Applications of water audits, proper irrigation design, monitoring techniques, rainwater harvesting, graywater systems and subsurface irrigation will be practiced. CSU  

HORT-296  Internship in Occupational Work Experience Education in HORT  
1-4 units  SC  
- May be repeated three times  
- Variable hours  
- Note: In order to enroll in the HORT-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.  
HORT-296 is a supervised internship in a skilled or professional level assignment in the studentís 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU  

HORT-298  Independent Study  
.5-3 units  SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office is required.  
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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**  
Toni Fannin, Interim 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, editing, publishing, teaching, writing, foreign service, library science, law, public administration, museum work, website design, archaeology, cultural anthropology, art criticism, tourism and journalism.  

**Program-level student learning outcomes**  
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).  

**Associate in arts degree**  
**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.
Associate in arts degree - Humanities

This degree is designed for students who wish to study a broad range of the arts: music, dance, visual arts, architecture, literature, drama, film, philosophy and history. Through this course of student students will learn to analyze, interpret, and compare a diverse range of art forms and cultures while deepening their understanding of the arts as human expression and honing their critical thinking and writing skills.

The associate in arts in humanities degree is both an interdisciplinary and integrative degree dedicated to the student of arts and ideas in their cultural contexts and to the comparative analysis of the arts. The degree provides a well-rounded and rich background in the creative and intellectual expression of major world civilizations, intellectual and cultural movements, and cultural works of creative expression. Humanities students develop skills in artistic analysis, aesthetic judgements, and other modes of critical thinking. Students develop the ability to view cultural material from multiple perspectives, appreciate and evaluate diverse forms of cultural expression, and understand the criticism and theory regarding major artistic works, styles, forms and movements.

DVC humanities students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU 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 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 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>HUMAN-105</td>
<td>Introduction to Humanities: Arts and Ideas</td>
<td>3</td>
</tr>
<tr>
<td>HUMAN-108</td>
<td>Humanities: The Roots of Hell</td>
<td>3</td>
</tr>
<tr>
<td>HUMAN-110</td>
<td>Humanities: Ancient Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>HUMAN-111</td>
<td>Humanities: The Middle Ages and Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>HUMAN-112</td>
<td>Humanities: The Modern World</td>
<td>3</td>
</tr>
</tbody>
</table>

**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 master works 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 Humanities: The Roots of Hell**

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

This course presents an introduction to humanities focused on the theme of hell. Integrating literature, philosophy, the visual arts, music, and film from international sources, students will explore themes such as guilt and responsibility, trial and redemption, and life after death from a variety of cultures. CSU, UC

**HUMAN-110 Humanities: Ancient Civilizations**

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

This course presents an introduction to humanities in the ancient world. Integrating the visual arts, music, literature, drama, architecture, philosophy, religion, science, technology, and history, students will explore creative works and ideas from ancient Egypt and Mesopotamia through the late Roman period. CSU, UC

**HUMAN-111 Humanities: The Middle Ages and Renaissance**

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

This course presents an introduction to humanities in the Middle Ages and Renaissance. Integrating the visual arts, music, literature, drama, architecture, philosophy, religion, science, technology, and history, students will explore creative works and ideas from the end of the Roman period to the end of the Renaissance. CSU, UC

**HUMAN-112 Humanities: The Modern World**

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

This course presents an introduction to humanities in the modern world. Integrating the visual arts, music, literature, drama, architecture, philosophy, religion, science, technology, and history, students will explore creative works and ideas from the Baroque era to the present. CSU, UC
HUMAN-115  Humanities: Multicultural America
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course presents an introduction to 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. 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  Humanities: Asian Arts and Cultures
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course presents an introduction to the humanities in Asia. Integrating the visual arts, music, literature, drama, architecture, philosophy, religion, science, technology, and history, students will explore creative works and ideas from a variety of Asian cultures. CSU, UC

HUMAN-118  Humanities: Film, Fiction, and Criticism
3 units  SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course presents an introduction to the integration of three areas of the humanities—literature, cinema, and aesthetic criticism. Students will explore and evaluate the aesthetic make-up of masterworks of literature and film. CSU, UC

HUMAN-123  The Humanities in 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

HUMAN-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

INDUSTRIAL DESIGN - IDSGN

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

IDSGN-105  Assembly and Fabrication Workshop
2 units  SC
• 18 hours lecture/54 hours laboratory per term
This course presents methods of fabrication for 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

IDSGN-107  Furniture Design Studio
2 units  SC
• 18 hours lecture/54 hours laboratory per term
• Recommended: IDSGN-105 or equivalent
This course introduces furniture design, construction, and assembly. Topics include design development, working drawings and assembly drawings, digital and physical modeling, and final assembly of furniture. Detailing, fabrication, and utilization of computer numerical control (CNC) routers to build finished products will be emphasized. CSU

IDSGN-120  Introduction to Industrial and Product Design
3 units  SC
• 36 hours lecture/72 hours laboratory per term
This course is an introduction to product design and the broader study and practice of the product and industrial design profession. The historical context of product design, ergonomics, material properties, prototyping, manufacturing methods and human use factors will be covered. Studio projects explore drawing, model making, digital design and rendering of a variety of products with focus on sustainability and green product materials. CSU
IDSGN-121  Industrial and Product Design Foundations
3 units  SC
• 36 hours lecture/72 hours laboratory per term
• Prerequisite: IDSGN-120 or equivalent
This project-based industrial design course introduces comprehensive design strategy and thought processes required to develop consumer products. Product research, design, and three-dimensional prototyping will be based on design briefs to develop problem-solving abilities. CSU

IDSGN-220  Soft Goods Product Design Studio
4 units  SC
• 36 hours lecture/108 hours laboratory per term
• Prerequisite: IDSGN-120 or equivalent
This course explores materials and textiles required for the construction of wearable products and their impact on lifestyles and fashion. Students will design a variety of soft goods products including fashion, high-end accessories, clothing, shoes, and recreational equipment such as tents and sleeping bags. Creative problem-solving, research, design, and prototyping are emphasized. CSU

ITALIAN – ITAL
Toni Fannin, Interim Dean
Applied and Fine Arts
Business and Foreign Language Building, Room 204

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

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in arts
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.
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

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.

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 list of courses. Students may not take a credit/no credit option for required courses and each course must be completed with a “C” grade or higher.

complete at least 13 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITAL-120</td>
<td>First Term Italian</td>
<td>5</td>
</tr>
<tr>
<td>ITAL-121</td>
<td>Second Term Italian</td>
<td>5</td>
</tr>
<tr>
<td>ITAL-220</td>
<td>Third Term Italian</td>
<td>5</td>
</tr>
<tr>
<td>ITAL-221</td>
<td>Fourth Term Italian</td>
<td>5</td>
</tr>
<tr>
<td>ITAL-230</td>
<td>Fifth Term Italian</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-231</td>
<td>Sixth Term Italian</td>
<td>3</td>
</tr>
</tbody>
</table>

| Total minimum required units | 13 |

ITAL-120 First Term Italian

5 units SC
• 90 hours lecture per term
• Prerequisite: ITAL-120 or two years of high school study 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-121 Second Term Italian

5 units SC
• 90 hours lecture per term
• Prerequisite: ITAL-120 or two years of high school study or equivalent

This is a sequential course in Italian, including the understanding, speaking, reading, and writing of the language; a continuation of basic communicative structures and functions as well as a continued examination of the culture of Italy. CSU, UC

ITAL-150 Topics in Italian

.3-4 units SC
• Variable hours

A supplemental course in Italian to provide a study of current concepts and problems in Italian and related subdivisions. Specific topics will be announced in the schedule of classes. CSU
ITAL-220  Third Term Italian
5 units  SC
- 90 hours lecture per term
- Prerequisite: ITAL-121 or three years of high school study or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

This is a third term intermediate Italian course that develops functional fluency in understanding, speaking, reading, and writing Italian. Students are introduced to the study of Italian literature. There is further study and interpretation of Italian culture. CSU, UC

ITAL-221  Fourth Term Italian
5 units  SC
- 90 hours lecture per term
- Prerequisite: ITAL-220 or four years of high school study or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

This is a fourth term intermediate Italian course that continues to develop fluency in all aspects of the Italian language with particular attention to literary forms as reflected in contemporary Italian. The present, past and imperfect subjunctive are covered. CSU, UC

ITAL-230  Fifth Term Italian
3 units  SC
- 54 hours lecture per term
- Prerequisite: ITAL-221 or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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
- Prerequisite: ITAL-230 or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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

Toni Fannin, Interim 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 are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in arts degree
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.

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.
Japanese

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.

To earn an associate in arts degree in Japanese, students must complete one of the following lists of courses. The core Japanese courses provide students with the essential grammar of the language and culture of Japan. The Kanji courses provide students with practice in Kanji characters used in writing the Japanese language.

List A

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPAN-120 First Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-121 Second Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-220 Third Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-221 Fourth Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>Total minimum required units</td>
<td>20</td>
</tr>
</tbody>
</table>

List B

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPAN-130 First Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-131 Second Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-132 Third Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-220 Third Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-221 Fourth Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>Total minimum required units</td>
<td>13</td>
</tr>
</tbody>
</table>

List C

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPAN-130 First Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-131 Second Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-132 Third Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-220 Third Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-221 Fourth Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>Total minimum required units</td>
<td>19</td>
</tr>
</tbody>
</table>

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.

The 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 one of the following lists of courses. Students may not take a credit/no credit option for required courses and each course must be completed with a “C” grade or higher.

List A

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPAN-120 First Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-121 Second Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-220 Third Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-221 Fourth Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>Total minimum required units</td>
<td>15</td>
</tr>
</tbody>
</table>

List B

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPAN-130 First Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-131 Second Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-132 Third Term Kanji</td>
<td>3</td>
</tr>
<tr>
<td>JAPAN-220 Third Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>JAPAN-221 Fourth Term Japanese</td>
<td>5</td>
</tr>
<tr>
<td>Total minimum required units</td>
<td>13</td>
</tr>
</tbody>
</table>

JAPAN-120  First Term Japanese

5 units  SC

- 90 hours lecture per term
- Note: This course is equivalent to two years of high school study.

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

JAPAN-121  Second Term Japanese

5 units  SC

- 90 hours lecture per term
- Prerequisite: JAPAN-120 or two years of high school study or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

This course is designed for those who have taken JAPAN-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
**JAPAN-130 First Term Kanji**  
3 units SC  
- 54 hours lecture per term  
- Recommended: JAPAN-120 or equivalent  
This course is an intensive study of Kanji characters to enhance competence in reading and writing Japanese in daily life situations. Examples include reading and comprehending simple essays and articles, and understanding Kanji used in everyday life. The course will cover up to 169 characters. CSU

**JAPAN-131 Second Term Kanji**  
3 units SC  
- 54 hours lecture per term  
- Recommended: JAPAN-130 or equivalent  
This course is designed for those who have taken JAPAN-130 or who have the equivalent knowledge and skills. Students will further develop their competence in reading and writing Japanese. Examples include reading more complicated essays and letters, and understanding maps, road signs, and TV listings. The course will cover up to 345 characters. CSU

**JAPAN-132 Third Term Kanji**  
3 units SC  
- 54 hours lecture per term  
- Recommended: JAPAN-131 or equivalent  
This course is designed for those who have taken JAPAN-131 or who have the equivalent knowledge and skills. Students will improve their advanced competence in reading and writing Japanese. Examples include reading and comprehending intermediate-level essays and understanding the pamphlets for travel, train timetables, and newspaper headlines. The course will cover up to 500 characters. CSU

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

**JAPAN-220 Third Term Japanese**  
5 units SC  
- 90 hours lecture per term  
- Prerequisite: JAPAN-121 or three years of high school study or equivalent  
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.  
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 per term  
- Prerequisite: JAPAN-220 or four years of high school study or equivalent  
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.  
This 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 is required.  
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

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.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

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 a 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: units
JRNAL-110 Mass Media of Communications .................. 3
JRNAL-120 Introduction to Newswriting and Reporting ...... 3
JRNAL-126 News Production Laboratory I .................... 3

plus at least 3 units from:
JRNAL-127 News Production Laboratory II .................. 3
JRNAL-130 Multimedia Reporting ............................. 3

plus at least 6 units from:
ART-160 Photography I ....................................... 3
BUS-240 Business Statistics .................................... 3
or
MATH-142 Elementary Statistics with Probability .......... 4
COMM-123 Argumentation and Debate ........................ 3
ENGL-126 Critical Thinking: The Shaping of Meaning in Language .............................................. 3
ECON-220 Principles of Macroeconomics .................... 3
or
ECON-221 Principles of Microeconomics .................... 3
POLSC-121 Introduction to United States Government ...... 3
POLSC-220 Comparative Politics ............................... 3

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 presents an introduction to major mass media and their impact on American life. The history of mass media, how they are structured, who controls them and how they influence individual and social values will be explored. Topics include First Amendment rights and responsibilities, techniques of persuasion and propaganda, the blurred line between entertainment and news, the role of journalists in war time, issues of credibility and trust and the impact of the new media - digital technology and the Internet - on the traditional forms of mass communication. Critical thinking and analysis of the images and sounds that so powerfully shape the public mind will be emphasized. C-ID JOUR 100, CSU, UC

JRNAL-120  Introduction to Newswriting and Reporting
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 generating story ideas, developing sources, conducting interviews and online research, taking accurate notes, observing detail, exercising news judgment and crafting stories appropriate for various media. The course also covers sensitivity to multicultural issues and explores legal and ethical 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. Students may publish some assignments in the college’s student newspaper, The Inquirer, or use them for other student media. 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  News Production Fundamentals
2-3 units  SC
- Variable hours
- 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. Work will be published in the college’s student newspaper, The Inquirer, or its online news site. All students will learn to exercise news judgment, apply basic legal and ethical principles, conduct and document interviews, take simple digital news photographs and craft a basic news story. Students who enroll in three units will go into greater depths on these topics and may begin to apply their skills using different media or in feature-style writing. CSU

JRNAL-126  News Production Laboratory I
3 units  SC
- 18 hours lecture/108 hours laboratory 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. Boat 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 per term
- Prerequisite: JRNAL-126 or equivalent

Students with previous experience in working for publications will provide editorial leadership and in-depth coverage for the college’s student newspaper, The Inquirer, and its website. Management skills, methods for tackling longer-term projects, and working in formats suitable for print, social media and the Web will be emphasized in this class. Students will be expected to exercise news judgment, meet daily and weekly deadlines, adhere to the highest ethical principles and be vigilant about accuracy. They will also exercise their First Amendment responsibilities by allowing The Inquirer to be a forum for the diverse views of the DVC community. C-ID JOUR 131, CSU
**Journalism**

**JRNAL-128 News Production Portfolio Development**  
2-3 units SC  
• Variable hours  
• Note: Classes such as JRNAL-120, ART-105, ART-160, ARTDM-136, ARTDM-165, ARTDM-214 or FTVE-120 could provide good preparation for this course of instruction.

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**  
3 units SC  
• 54 hours lecture per term  
• 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. C-ID JOUR 120, CSU

**JRNAL-160 Introduction to Feature Reporting**  
3 units SC  
• 54 hours lecture per term  
• Recommended: ENGL-118 or equivalent  

This course equips students to research, write and market feature stories for magazines, websites and newspapers. Topics covered include choosing and focusing on a story idea, interviewing sources, using storytelling techniques, locating a market and framing a query. Students learn to evaluate and use online sources and public documents. Basic principles of media law, including libel and copyright, are introduced. Students develop feature stories and market them 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 is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

**KINESIOLOGY – KINES**

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

**Possible career opportunities**

Kinesiology is the interdisciplinary study of human movement, including but not limited to history, sociology, psychology, physiology and biomechanics. As a result, students earning a degree in kinesiology are able to pursue a wide variety of careers—physical education, coaching, athletic training (including sports medicine and allied health fields such as physical therapy, physician assistant and nursing), fitness instruction (personal training and strength and conditioning) and sports/recreation management (including sport administration, journalism, marketing, and law, as well as community parks and recreation). Many career options require more than two years of college study.

**Program-level student learning outcomes**

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

**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 NASIV1, AFAA or other national certification exam.

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.

**major requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</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 Fitness Assessment</td>
<td>1</td>
</tr>
<tr>
<td>KINES-246</td>
<td>Sport and Exercise Psychology</td>
<td>3</td>
</tr>
<tr>
<td>KINES-248</td>
<td>Sport and Society</td>
<td>3</td>
</tr>
<tr>
<td>KINES-250</td>
<td>Professional Aspects of Personal Training</td>
<td>3</td>
</tr>
<tr>
<td>KINES-252</td>
<td>Professional Aspects of Group Personal Training</td>
<td>1.5</td>
</tr>
<tr>
<td>KINES-254</td>
<td>Practical Experience in Personal Training and Fitness Instruction I</td>
<td>4</td>
</tr>
<tr>
<td>KINES-255</td>
<td>Practical Experience in Personal Training and Fitness Instruction II</td>
<td>4</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-101</td>
<td>Fundamentals of Biological Science</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-102</td>
<td>Fundamentals of Biological Science with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-116</td>
<td>Human Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-117</td>
<td>Human Biology with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-120</td>
<td>Introduction to Human Anatomy and Physiology</td>
<td>5</td>
</tr>
<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>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI-124</td>
<td>Health and Wellness</td>
<td>3</td>
</tr>
<tr>
<td>HSCI-170</td>
<td>Women’s Health</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>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>
</tr>
</tbody>
</table>

**plus at least 2 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>KNACT-146A</td>
<td>Theory and Practice of Strength Training and Fitness I</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-146B</td>
<td>Theory and Practice of Strength Training and Fitness II</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-146C</td>
<td>Theory and Practice of Strength Training and Fitness III</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-146D</td>
<td>Theory and Practice of Strength Training and Fitness IV</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-148A</td>
<td>Beginning Power Lifting</td>
<td>0.5-2</td>
</tr>
</tbody>
</table>

**plus at least 2 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>KNACT-110A</td>
<td>Beginning Hatha Yoga</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-110B</td>
<td>Intermediate Hatha Yoga</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-110C</td>
<td>Advanced Hatha Yoga</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-114A</td>
<td>Beginning Stretch and Yoga for Sports</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-114B</td>
<td>Intermediate Stretch and Yoga for Sports</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-120</td>
<td>Physical Fitness</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-122A</td>
<td>Beginning Body Sculpt</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-124A</td>
<td>Beginning Hips, Thighs and Abs</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-124B</td>
<td>Intermediate Hips, 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-128B</td>
<td>Intermediate Cardio Kickboxing</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-140</td>
<td>Stationary Cycling</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-142A</td>
<td>Beginning Boot Camp</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-144B</td>
<td>Intermediate Super Circuit</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-105A</td>
<td>Pilates Mat Work I</td>
<td>0.5-2</td>
</tr>
</tbody>
</table>

**total minimum required units**  41.5

**recommended courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSMG-191</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>KINES-210</td>
<td>Introduction to Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>KINES-230</td>
<td>Overview of Sports Medicine and Fitness Professions</td>
<td>2</td>
</tr>
<tr>
<td>KINES-232</td>
<td>Introduction to Sports Massage</td>
<td>1.5</td>
</tr>
<tr>
<td>KINES-235</td>
<td>Advanced Sports Medicine and Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>KINES-256</td>
<td>Theory and Practice of Performance</td>
<td>3</td>
</tr>
<tr>
<td>KINES-257</td>
<td>Theory and Practice of Corrective</td>
<td>2</td>
</tr>
<tr>
<td>KINES-258</td>
<td>Personal Training National Examination Preparation</td>
<td>2</td>
</tr>
</tbody>
</table>

### Associate in science degree

**Kinesiology**

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.

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.
Kinesiology

While most of the kinesiology major requirements are transferable and many meet prerequisites required in associate majors, this degree is not designed as a transfer curriculum. Students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Possible programs of study at the baccalaureate level include pursuit of a teaching credential to become a secondary school teacher/coach, or exercise science, sports management or other specialty area related to the discipline of kinesiology. Students who intend to transfer are advised to select 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 the 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:  

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
</table>
| 3     | KNICA-160B Beginning Golf  
| 0.5-2 | KNICA-164A Beginning Golf  
| 0.5-2 | KNICA-164B Intermediate Golf  
| 0.5-2 | KNICA-170A Beginning Basketball  
| 0.5-2 | KNICA-170B Intermediate Basketball  
| 0.5-2 | KNICA-174A Beginning Men's Lacrosse  
| 0.5-2 | KNICA-174B Intermediate Men's Lacrosse  
| 0.5-2 | KNICA-176A Beginning Soccer  
| 0.5-2 | KNICA-176B Intermediate Soccer  
| 0.5-2 | KNICA-182A Beginning Volleyball  
| 0.5-2 | KNICA-182B Intermediate Volleyball  
| 0.5-2 | KNICA-182C Advanced Volleyball  
| 0.25-1| KNICA-194A Beginning Plyometrics and Agility  
| 0.25-1| KNICA-194B Intermediate Plyometrics and Agility  
| 0.5-2 | KNICA-195A Advanced Plyometrics and Agility  
| 3     | KIN-195C Advanced Plyometrics and Agility  

plus at least 2 units from:  

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
</table>
| 0.5-2 | KNICA-199 Sport-Specific Athletic Conditioning  
| 3     | KNICA-200 Intercollegiate Baseball, Men  
| 2     | KNICA-202A Intercollegiate Basketball-A, Men  
| 1     | KNICA-202B Intercollegiate Basketball-B, Men  
| 2     | KNICA-203A Intercollegiate Basketball-A, Women  
| 1     | KNICA-203B Intercollegiate Basketball-B, Women  
| 3     | KNICA-206 Intercollegiate Football, Men  
| 3     | KNICA-210 Intercollegiate Soccer, Women  
| 3     | KNICA-215 Intercollegiate Softball, Women  
| 3     | KNICA-216 Intercollegiate Swimming and Diving, Men  
| 3     | KNICA-217 Intercollegiate Swimming and Diving, Women  
| 3     | KNICA-223 Intercollegiate Volleyball, Women  
| 3     | KNICA-224 Intercollegiate Water Polo, Men  
| 3     | KNICA-225 Intercollegiate Water Polo, Women  

* activity course or intercollegiate athletic participation must be selected in area of coaching emphasis

total minimum required units  36

sport and recreation management emphasis

required courses:  

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
</table>
| 3     | KNICA-220 Introduction to Sport and Recreation Management  
| 4     | KNICA-222 Practical Experience in Sport and Recreation Management I  
| 4     | KNICA-223 Practical Experience in Sport and Recreation Management II  

coaching emphasis

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
</table>
| 3     | KINES-260 Theory of Coaching Individual Sports  
| 3     | KINES-262 Theory of Coaching Team Sports  
| 3     | KINES-264 Theory of Coaching Football  

plus at least 3 units from:

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
</table>
| 3     | BUS-240 Business Statistics  
| 4     | MATH-135 College Algebra  
| 4     | MATH-142 Elementary Statistics with Probability  
| 3     | BIOSC-101 Fundamentals of Biological Science  
| 3     | BIOSC-102 Fundamentals of Biological Science with Laboratory  
| 3     | BIOSC-116 Human Biology  
| 5     | BIOSC-139 Human Anatomy  
| 5     | BIOSC-140 Human Physiology  

plus at least 3 units from:

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
</table>
| 3     | 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  
| 1     | KINES-242 Exercise Techniques and Fitness Assessments  
| 3     | KINES-246 Sport and Exercise Psychology  
| 3     | KINES-248 Sport and Society  
| 3     | PSYCH-101 Introduction to Psychology  

plus at least 3 units from:

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
</table>
| 3     | NUTRI-120 Sports Nutrition, Fueling the Athlete  
| 3     | NUTRI-160 Nutrition, Science and Applications  
| 3     | BUS-240 Business Statistics  
| 3     | MATH-135 College Algebra  
| 4     | MATH-142 Elementary Statistics with Probability  
| 3     | BIOSC-101 Fundamentals of Biological Science  
| 4     | BIOSC-102 Fundamentals of Biological Science with Laboratory  
| 3     | BIOSC-116 Human Biology  
| 3     | BIOSC-139 Human Anatomy  
| 5     | BIOSC-140 Human Physiology  

Kniga-220 Introduction to Sport and Recreation Management

Kniga-222 Practical Experience in Sport and Recreation Management I

Kniga-223 Practical Experience in Sport and Recreation Management II

* activity course or intercollegiate athletic participation must be selected in area of coaching emphasis

288  

PROGRAM/COURSE DESCRIPTIONS  chapter four  DIABLO VALLEY COLLEGE  CATALOG 2017-2018
plus a least 2 units from:
KNACT-100A Beginning Swimming .......................... 0.5-2
KNACT-100B Intermediate Swimming ......................... 0.5-2
KNACT-135 Distance Track Training .................................. 0.5-2
KNACT-160A Beginning Badminton ................................... 0.5-2
KNACT-160B Intermediate Badminton ................................ 0.5-2
KNACT-164A Beginning Golf ......................................... 0.5-2
KNACT-164B Intermediate Golf ....................................... 0.5-2
KNACT-166 Tennis ...................................................... 0.5-2
KNACT-170A Beginning Basketball .................................... 0.5-2
KNACT-174A Beginning Men's Lacrosse .............................. 0.5-2
KNACT-174B Intermediate Men's Lacrosse .......................... 0.5-2
KNACT-176A Beginning Soccer ......................................... 0.5-2
KNACT-176B Intermediate Soccer ...................................... 0.5-2
KNACT-182A Beginning Volleyball ..................................... 0.5-2
KNACT-182B Intermediate Volleyball .................................. 0.5-2
KNACT-182C Advanced Volleyball ...................................... 0.5-2
KNACT-195A Beginning Pylometrics and Agility Training for Female Athletes ............................................ 0.25-1
KNACT-195B Intermediate Pylometrics and Agility Training for Female Athletes ....................................... 0.25-1
KNACT-195C Advanced Pylometrics and Agility Training for Female Athletes ........................................... 0.5-2

**total minimum required units** 44

**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**

Students completing the program will be able to...

A. differentiate between a variety of anatomical structures and related terminology.

B. utilize injury evaluation, treatment, rehabilitation and massage techniques.

C. students completing this program will be able to develop a educational and career plan matched to their skills, aptitudes and professional requirements.

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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-139</td>
<td>Human Anatomy</td>
<td>5</td>
</tr>
<tr>
<td>KINES-230</td>
<td>Overview of Sports Medicine and Fitness Professions</td>
<td>2</td>
</tr>
<tr>
<td>KINES-232</td>
<td>Introduction to Sports Massage</td>
<td>1.5</td>
</tr>
<tr>
<td>KINES-234</td>
<td>Introduction to Sports Medicine and Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>KINES-235</td>
<td>Advanced Sports Medicine and Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>KINES-236</td>
<td>Clinical Experiences in Sports Medicine and Athletic Training</td>
<td>2</td>
</tr>
<tr>
<td>KINES-237</td>
<td>Clinical Experiences in Sports Medicine and Athletic Training II</td>
<td>2</td>
</tr>
<tr>
<td>KINES-238</td>
<td>Clinical Experiences in Sports Medicine and Athletic Training III</td>
<td>2</td>
</tr>
<tr>
<td>KINES-239</td>
<td>Clinical Experiences in Sports Medicine and Athletic Training IV</td>
<td>2</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 Fitness Assessments</td>
<td>1</td>
</tr>
<tr>
<td>KINES-248</td>
<td>Sport and Society</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-101</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-107</td>
<td>Integrated Inorganic, Organic, and Biological Chemistry</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>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-110</td>
<td>Elementary Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-120</td>
<td>General College Physics I</td>
<td>4</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-101</td>
<td>Fundamentals of Biological Science</td>
<td>3</td>
</tr>
<tr>
<td>BIOSC-102</td>
<td>Fundamentals of Biological Science</td>
<td>4</td>
</tr>
<tr>
<td>BIOSC-130</td>
<td>Principles of Cellular and Molecular Biology</td>
<td>5</td>
</tr>
<tr>
<td>HSCI-230</td>
<td>Advanced First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>KINES-210</td>
<td>Introduction to Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>KINES-246</td>
<td>Sport and Exercise Psychology</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** 41.5
Kinesiology

Associate in arts in kinesiology for transfer

Students completing the program will be able to...

A. describe and explain the scholarly study of human movement and its significance to our understanding of physical activity.

B. assess the importance of physical activity in our daily lives (e.g. recreation, self-expression, health, competition, etc.).

C. differentiate among the sub-disciplines of kinesiology (e.g. history, biomechanics, philosophy, etc.) and discuss the knowledge specific to those areas.

D. demonstrate knowledge in related disciplines required as core preparation for kinesiology majors (e.g. chemistry, biology, physics, statistics, etc.).

E. apply a variety of research methods to locate and use appropriate information from various sources.

Kinesiology is the academic discipline focusing on the study of all aspects of human movement. Programs of study at the baccalaureate level include exercise science, sports management, allied health profession preparation, and pursuit of a teaching credential to become a secondary school teacher/coach.

The associate in arts in kinesiology 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-Breadth pattern (CSU GE-Breadth) 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 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 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.

<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>KINES-210 Introduction to Kinesiology</td>
<td>3</td>
</tr>
</tbody>
</table>

plus a minimum of 6 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<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>BIOSC-117</td>
<td>Human Biology with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>HSCI-230</td>
<td>Advanced First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-120</td>
<td>General College Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-130</td>
<td>Physics for Engineers and Scientists A-Mechanics and Wave Motion</td>
<td>4</td>
</tr>
</tbody>
</table>

plus at least 3 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>KNACT-109</td>
<td>Beginning Hatha Yoga</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-128</td>
<td>Beginning Cardio Kickboxing</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-130</td>
<td>Beginning Fitness Walking</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-134</td>
<td>Beginning Fitness Jogging</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-148</td>
<td>Beginning Power Lifting</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-105A</td>
<td>Pilates Mat Work</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-160A</td>
<td>Beginning Badminton</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-162</td>
<td>Bowling</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-164A</td>
<td>Beginning Golf</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-164B</td>
<td>Intermediate Golf</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNACT-166</td>
<td>Tennis</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-110A</td>
<td>Beginning Basketball</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-172</td>
<td>Flag Football</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-176A</td>
<td>Beginning Soccer</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-182A</td>
<td>Beginning Volleyball</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-182B</td>
<td>Intermediate Volleyball</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-182C</td>
<td>Advanced Volleyball</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNMCB-110</td>
<td>Self Defense</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNMCB-118A</td>
<td>Beginning Taekwondo</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNMCB-126A</td>
<td>Beginning Aikido</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNMCB-134</td>
<td>Karate</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-100</td>
<td>Introduction to Dance</td>
<td>0.5-2</td>
</tr>
<tr>
<td>KNDAN-164A</td>
<td>Ballroom/Social Dance I</td>
<td>0.5-2</td>
</tr>
</tbody>
</table>

total minimum required units 22-25
Certificate of achievement
Coaching

Students completing the program will be able to...

A. develop practice plans, analyze strategy and teach techniques specific to a chosen sport.
B. incorporate concepts of an athlete’s psychological and physical health to improve performance.
C. Students completing this program will be able to develop a educational and career plan matched to their skills, aptitudes and professional requirements.

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.

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI-230</td>
<td>3</td>
</tr>
<tr>
<td>KINES-234</td>
<td>3</td>
</tr>
<tr>
<td>KINES-240</td>
<td>3</td>
</tr>
<tr>
<td>KINES-242</td>
<td>3</td>
</tr>
<tr>
<td>KINES-246</td>
<td>1</td>
</tr>
<tr>
<td>NUTRI-120</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI-160</td>
<td>3</td>
</tr>
<tr>
<td>KINES-260</td>
<td>3</td>
</tr>
<tr>
<td>KINES-262</td>
<td>3</td>
</tr>
<tr>
<td>KINES-264</td>
<td>3</td>
</tr>
<tr>
<td>KNACT-100A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-100B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-106</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-100A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-106B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-164A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-164B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-166</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-170A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-170B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-174A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-174B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-176A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-176B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-182A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-182B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-182C</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-195A</td>
<td>0.25</td>
</tr>
<tr>
<td>KNACT-195B</td>
<td>0.25</td>
</tr>
<tr>
<td>KNACT-195C</td>
<td>0.25</td>
</tr>
</tbody>
</table>

or at least 2 units from:

| KINES-250 | 3     |
| KINES-252 | 1.5   |
| KINES-254 | 4     |
| KINES-255 | 4     |

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 NASI-V1, AFAA or other national certification exam.

The personal training certificate program is a one-year course of study that will expose students to many facets of the fitness industry and prepares them to obtain entry-level employment as a personal trainer. Completion of the certificate requirements will also prepare students to sit for national personal training examinations.

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

<table>
<thead>
<tr>
<th>required courses</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI-230</td>
<td>3</td>
</tr>
<tr>
<td>KINES-234</td>
<td>3</td>
</tr>
<tr>
<td>KINES-240</td>
<td>3</td>
</tr>
<tr>
<td>KINES-242</td>
<td>3</td>
</tr>
<tr>
<td>KINES-246</td>
<td>1</td>
</tr>
<tr>
<td>KINES-260</td>
<td>3</td>
</tr>
<tr>
<td>KINES-262</td>
<td>3</td>
</tr>
<tr>
<td>KINES-264</td>
<td>3</td>
</tr>
<tr>
<td>KNACT-100A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-100B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-106</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-100A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-106B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-164A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-164B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-166</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-170A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-170B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-174A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-174B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-176A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-176B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-182A</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-182B</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-182C</td>
<td>0.5</td>
</tr>
<tr>
<td>KNACT-195A</td>
<td>0.25</td>
</tr>
<tr>
<td>KNACT-195B</td>
<td>0.25</td>
</tr>
<tr>
<td>KNACT-195C</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Kinesiology
Kinesiology

plus at least 3 units from:
NUTRI-115 Nutrition and Health: Personal Applications ... 3
NUTRI-120 Sports Nutrition: Fueling the Athlete ............. 3
NUTRI-160 Nutrition: Science and Applications ... 3

plus at least 1 unit from:
KNACT-146A Theory and Practice of Strength
   Training and Fitness I .................................. 0.5-2
KNACT-146B Theory and Practice of Strength
   Training and Fitness II ............................... 0.5-2
KNACT-146C Theory and Practice of Strength
   Training and Fitness III .............................. 0.5-2
KNACT-146D Theory and Practice of Strength
   Training and Fitness IV .............................. 0.5-2
KNACT-148A Beginning Power Lifting .......................... 0.5-2

plus at least 1 unit from:
KNACT-110A Beginning Hatha Yoga .......................... 0.5-2
KNACT-110B Intermediate Hatha Yoga ....................... 0.5-2
KNACT-110C Advanced Hatha Yoga .......................... 0.5-2
KNACT-111A Beginning Stretch and Yoga for Sports .... 0.5-2
KNACT-111B Intermediate Stretch and Yoga for
   Sports ...................................................... 0.5-2
KNACT-120 Physical Fitness ................................ 0.5-2
KNACT-120A Beginning Body Sculpt ........................ 0.5-2
KNACT-120B Intermediate Body Sculpt ........................ 0.5-2
KNACT-126 Aerobics/Step Aerobics .......................... 0.5-2
KNACT-128A Beginning Cardio Kickboxing .................. 0.5-2
KNACT-128B Intermediate Cardio Kickboxing ............... 0.5-2
KNACT-140 Stationary Cycling ............................. 0.5-2
KNACT-142A Beginning Boot Camp .......................... 0.5-2
KNACT-144A Beginning Super Circuit ........................ 0.5-2
KNACT-144B Intermediate Super Circuit ...................... 0.5-2
KNDN-105A Pilates Mat Work I ............................... 0.5-2

total minimum required units 30.5

KINES-100 Fitness and Wellness
1 unit SC
• 18 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course presents the physiological, psychological and sociological aspects of wellness. Principles of fitness, wellness and health promotion will be covered. CSU, UC (credit limits may apply to UC - see counselor)

KINES-150 Topics in Kinesiology Theory
3-4 units SC
• Variable hours
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
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
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
4 units SC
• 36 hours lecture/108 hours laboratory by arrangement per term
• Recommended: KINES-220 or equivalent
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
4 units SC
• 36 hours lecture/108 hours laboratory by arrangement per term
• Prerequisite: KINES-222 or equivalent
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
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
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
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
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 completion of one year high school ROP sports medicine or equivalent
This course will expose students to basic injury prevention and care. The student will observe and assist athletic trainers in administering health care to the DVC athletes. Skills to be learned and performed include prophylactic taping and wrapping, immediate injury management and modality application. CSU

KINES-237 Clinical Experiences in Sports Medicine and Athletic Training II
2 units  SC  108 hours laboratory by arrangement per term
Prerequisite: KINES-235 (may be taken concurrently) and KINES-236 or equivalents
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
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
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 Fitness Assessments
1 unit SC
• 54 hours laboratory per term
• Recommended: KINES-240 or equivalent (may be taken concurrently)

This course is a companion laboratory course to KINES-240. Students will practice the instruction of proper techniques of strength training and fitness conditioning. Students will also conduct fitness assessments to determine fitness levels and evaluate progress in exercise programs. These skills will assist students who plan to sit for a national personal training or athletic 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

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-248 Sport and Society
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent

This course is intended to develop an understanding and recognition of the many ways sport and society interact and affect one another. The process of socialization as well as the roles of violence, gender, race, media, and politics within the realm of sport will be examined. Considerations of pertinent current events and scholarly journal articles will enhance students’ understanding of the topics addressed. CSU, UC

KINES-250 Professional Aspects of Personal Training
3 units SC
• 54 hours lecture per term
• Recommended: KINES-240 or equivalent

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 Personal Training
1.5 units SC
• 18 hours lecture/27 hours laboratory per term
• Recommended: KINES-240 or equivalent

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
4 units SC
• 36 hours lecture/108 hours laboratory by arrangement per term
• Prerequisite: KINES-240 (may be taken concurrently) or equivalent

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
4 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

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-256  Theory and Practice of Performance Exercise Training and Exam Prep.
2 units  SC
• 36 hours lecture per term
• Recommended: KINES-240 and KINES-250 or equivalents
This course is for personal trainers, athletic trainers and coaches to advance their knowledge in the area of performance exercise. Emphasis will be on the theory of assessment techniques for and corrective strategies for improving human performance. Students may be able to earn continuing education units (CEUs) and/or sit for a national examination in performance exercise. CSU

KINES-257  Theory and Practice of Corrective Exercise Training and Exam Prep.
2 units  SC
• 36 hours lecture per term
• Recommended: KINES-240 and KINES-250 or equivalents
This course is for personal trainers, athletic trainers, and coaches to advance their knowledge in the area of corrective exercise. Emphasis will be on the theory of assessment techniques for and corrective strategies for human movement. Students may be able to earn continuing education units (CEUs) and/or sit for a national examination in corrective exercise. CSU

KINES-258  Personal Training National Exam Preparation
2 units  SC
• 36 hours lecture per term
• Recommended: KINES-250 or equivalent
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-259  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

KINES-259  Student Instructional Assistant
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.
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
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
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
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)
Kinesiology activity

**KINESIOLOGY ACTIVITY – KNACT**

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

**Limitations on enrollment**
Effective fall term 2013, changes to the regulations that govern community college enrollments placed limitations on the number of courses that students may take in certain disciplines within the Contra Costa Community College District. The charts below indicate which Diablo Valley College (DVC) courses are assigned to groups of courses (“families”) for which limitations have been imposed. Certain courses within certain “families” may be repeated (see catalog description), however, students are limited to four enrollments within the family. Certain DVC courses are equivalent to courses at Los Medanos College and Contra Costa College. An enrollment in an equivalent course at one of those colleges will count toward the allowable four enrollments within the family.

NOTE: Diablo Valley College may offer experimental or topics courses. When appropriate, based on content, such courses will be assigned to a “family” and that enrollment will be counted as an experience within the “family”.

**KINESIOLOGY**

**Family: Swimming**
KNACT-100A Beginning Swimming
KNACT-100B Intermediate Swimming

**Family: Yoga**
KNACT-110A Beginning Hatha Yoga
KNACT-110B Intermediate Hatha Yoga
KNACT-110C Advanced Hatha Yoga
KNACT-114A Beginning Stretch and Yoga for Sports
KNACT-114B Intermediate Stretch and Yoga for Sports

**Family: Walking/Jogging**
KNACT-130A Beginning Fitness Walking
KNACT-130B Intermediate Fitness Walking
KNACT-132 Hiking
KNACT-134A Beginning Fitness Jogging
KNACT-134B Intermediate Fitness Jogging
KNACT-136 Distance Track Training

**Family: Golf**
KNACT-164A Beginning Golf
KNACT-164B Intermediate Golf

**Family: Tennis**
KNACT-150B Intermediate Tennis
KNACT-166 Tennis

**Family: Badminton**
KNACT-160A Beginning Badminton
KNACT-160B Intermediate Badminton

**Family: Aerobics**
KNACT-102A Beginning Aquatic Fitness
KNACT-102B Intermediate Aquatic Fitness
KNACT-104 Water Aerobics
KNACT-120 Physical Fitness
KNACT-125 Zumba
KNACT-126 Aerobics/Step Aerobics
KNACT-128A Beginning Cardio Kickboxing
KNACT-128B Intermediate Cardio Kickboxing
KNACT-140 Stationary Cycling
KNACT-142A Beginning Boot Camp
KNACT-144A Beginning Super Circuit
KNACT-144B Intermediate Super Circuit
KNACT-150A Zumba
KNACT-150E Boot Camp

**Family: Core**
KNACT-122A Beginning Body Sculpt
KNACT-122B Intermediate Body Sculpt
KNACT-124A Beginning Hips, Thighs and Abs
KNACT-124B Intermediate Hips, Thighs and Abs
KNDAN-105A Pilates Mat Work I
KNDAN-105B Pilates Mat Work II

**Family: Sport specific conditioning**
KNACT-150C Advanced Plyometrics and Agility Training for Female Athletes
KNACT-195A Beginning Plyometrics and Agility Training for Female Athletes
KNACT-195B Intermediate Plyometrics and Agility Training for Female Athletes
KNACT-195C Advanced Plyometrics and Agility Training for Female Athletes

**Family: Resistance**
KNACT-146A Theory and Practice of Strength Training and Fitness I
KNACT-146B Theory and Practice of Strength Training and Fitness II
KNACT-146C Theory and Practice of Strength Training and Fitness III
KNACT-146D Theory and Practice of Strength Training and Fitness IV
KNACT-148A Beginning Power Lifting
KNACT-148B Intermediate Power Lifting
KNACT-100A  Beginning Swimming  
.5-2 units  SC  
- Variable hours  
This is an activity course designed to teach beginning level skill of swimming. Correct swimming technique for the freestyle and backstroke strokes will be emphasized. 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. Correct swimming techniques for all four competitive swim strokes (freestyle, backstroke, breaststroke and butterfly) will be emphasized. 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  
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  
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  
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
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. 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-114A  Beginning Stretch and Yoga for Sports
.5-2 units SC
• Variable hours
This is a beginning level activity course introducing principles of yoga asanas, stretch and relaxation techniques, as related to a particular sport or activity. Students will practice beginning level warm-up activities, flexibility and stretching exercises, for the primary purpose of preventing injury in their particular sport/activity. Students will learn methods for measuring changes in flexibility and alignment. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-114B  Intermediate Stretch and Yoga for Sports
.5-2 units SC
• Variable hours
This is a course presenting intermediate principles of stretch technique, intermediate yoga asanas, and imagery techniques, as related to a particular sport or activity. Students will participate in intermediate level warm-up activities, intermediate flexibility and strengthening exercises, and injury prevention methods, with the goal of enhancing sport/activity performance. Students will utilize flexibility and alignment measurements for the development of an individualized stretch program. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-120  Physical Fitness
.5-2 units SC
• Variable hours
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, as well as, the benefits of physical fitness as an aspect of overall well-being, are addressed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-122A  Beginning Body Sculpt
.5-2 units SC
• Variable hours
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 techniques and exercise routines will be developed by students. Fitness assessments will be performed and nutritional/wellness topics will be expanded. Students will keep a journal of their individual exercise routines and nutritional intake. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-124A  Beginning Hips, Thighs and Abs
.5-2 units SC
• Variable hours
This is an activity course emphasizing a beginning level of toning and strengthening of the hip, thigh, and abdominal areas. A basic level of anatomy will be included. Various beginning conditioning techniques and modalities will be utilized including, but not limited to, speed walking, body resistance activities and basic use of resistance tubing. CSU, UC (credit limits may apply to UC - see counselor)
KNACT-124B  Intermediate Hips, Thighs and Abs
0.5-2 units  SC
  •  Variable hours
This is an activity course emphasizing an intermediate level of toning and strengthening of the hip, thigh, and abdominal areas. An intermediate level of muscle tone development and progressive levels of muscle physiology, will be included. A variety of measured conditioning techniques and 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-125  Zumba
0.5-2 units  SC
  •  Variable hours
This is an activity course designed to improve aerobic fitness, muscular endurance and muscular strength by utilizing Zumba dance fitness routines. Zumba is a fitness program that incorporates international music and dance steps. Flexibility training, core strengthening and topics concerning fitness principles and overall well-being will also be incorporated. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-126  Aerobics/Step Aerobics
0.5-2 units  SC
  •  Variable hours
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 discussion of the science of aerobic fitness will be incorporated. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-128A  Beginning Cardio Kickboxing
0.5-2 units  SC
  •  Variable hours
  •  Note: Ability to participate in vigorous activity is recommended
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
0.5-2 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
0.5-2 units  SC
  •  Variable hours
This is an activity course intended for students of beginning fitness levels who would like to utilize walking as a fitness enhancing activity. Introductory techniques 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
0.5-2 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 techniques will include distance, hill, backward, and speed walking. 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, Volkssporing and Volksmarching. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-132  Hiking
0.5-2 units  SC
  •  Variable hours
This is an activity course utilizing hiking as a means to improve health and fitness. Hiking and safety skills will be practiced while enjoying the beautiful parks and open spaces of the Bay Area. Hike preparation, map reading, trail marking skills, and the health and fitness benefits of hiking will be addressed. All routes are four to ten miles long at various hiking sites and are often on hilly terrain. CSU, UC (credit limits may apply to UC - see counselor)
KNACT-134A  
**Beginning Fitness Jogging**  
.5-2 units SC  
• Variable hours  
This is an activity course which is designed to teach basic concepts and elements of jogging, including form and technique. The sport of running, warm up techniques, drills, safety and nutrition information, as it relates to jogging and/or 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  
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, and the value of interval training in distance running. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-140  
**Stationary Cycling**  
.5-2 units SC  
• Variable hours  
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 assessments 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-142A  
**Beginning Boot Camp**  
.5-2 units SC  
• Variable hours  
• Note: Students must be healthy enough to participate in vigorous physical activity.  
This is an activity course that incorporates a total body workout with minimal rest in between a given set of exercises. Cardiovascular endurance, core exercises, muscular strength, muscular endurance, body weight exercises, and free weights will be combined to assist students in achieving fitness goals. Flexibility exercises, nutritional information, and fitness principles will also be presented. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-144A  
**Beginning Super Circuit**  
.5-2 units SC  
• Variable hours  
This is an activity course introducing 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 for intermediate level students participating in a unique and simultaneous combination of aerobic and resistance training exercises in one seamless total fitness workout utilizing elements of cardiovascular fitness, muscular strength, muscular endurance, and flexibility. 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  
This is an activity course designed to increase muscular strength, muscular endurance, and fitness utilizing introductory resistance techniques and equipment training. Endurance training activities will also be included. Students will be instructed on information pertaining to safety, warm-up, and musculoskeletal anatomy. 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 strength training techniques, equipment, and endurance training activities. Information on safety, warm-up, anatomy, and basic program design will also be presented. 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 intermediate level strength training techniques, equipment, and endurance training activities. Students will work toward independent program design and implementation. 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 advanced level strength training techniques, equipment, and endurance training activities. Students will be expected to design and implement independent programs. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-148A  Beginning Power Training
  .5-2 units SC
  • Variable hours
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 concerns will also be discussed. CSU, UC (credit limits may apply to UC - see counselor)

KNACT-148B  Intermediate Power Training
  .5-2 units SC
  • Variable hours
This is an activity course designed to teach intermediate elements of power lifting and training. Intermediate-level exercises will be emphasized and program design will be covered. The biomechanics of power training, as well as plyometric training 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
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-148A  Beginning Power Training
  .5-2 units SC
  • Variable hours
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-160A  Beginning Badminton
  .5-2 units SC
  • Variable hours
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
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
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  
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  
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  
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  
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  
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-174B  Intermediate Men’s Lacrosse  
.5-2 units SC  
- Variable hours  
This is an intermediate level activity course presenting skill and strategies of men’s lacrosse. The course focuses on the application of the rules, etiquette, safety, and individual skills such as catching, passing, cradling, shooting, and defending to game play. Offensive and defensive team strategies are presented and implemented during the course. 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  
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  
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  
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

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-195C Advanced Plyometrics and Agility Training for Female Athletes
.5-2 units SC
- Variable hours
- Note: This course is open to all students

This is an activity course involving an advanced level of plyometric and agility training for the female athlete. The course is designed to further advanced students' neuromuscular control, thereby enhancing sport-specific performance and minimizing the potential for injury. Students will perform advanced levels of plyometric techniques, agility drills, flexibility exercises and core strengthening techniques. Health and nutritional issues specific to the female athlete will also be discussed. 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 is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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.

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
Limitations on enrollment
Effective fall term 2013, changes to the regulations that govern community college enrollments placed limitations on the number of courses that students may take in certain disciplines within the Contra Costa Community College District. The charts below indicate which Diablo Valley College (DVC) courses are assigned to groups of courses (“families”) for which limitations have been imposed. Certain courses within certain “families” may be repeated (see catalog description), however, students are limited to four enrollments within the family. Certain DVC courses are equivalent to courses at Los Medanos College and Contra Costa College. An enrollment in an equivalent course at one of those colleges will count toward the allowable four enrollments within the family.

NOTE: Diablo Valley College may offer experimental or topics courses. When appropriate, based on content, such courses will be assigned to a “family” and that enrollment will be counted as an experience within the “family”.

KINESIOLOGY

Family: Combatives
KNCMB-110 Self-Defense
KNCMB-114 Jujitsu
KNCMB-118A Beginning Taekwondo
KNCMB-118B Intermediate Taekwondo
KNCMB-118C Advanced Taekwondo
KNCMB-126A Beginning Aikido
KNCMB-126B Intermediate Aikido
KNCMB-128 Aikido Weapons-Jo and Bokken
KNCMB-130 Judo
KNCMB-134 Karate
KNCMB-150A Intermediate Taekwondo
KNCMB-150B Advanced Taekwondo

KNCMB-110 Self-Defense
.5-2 units SC
• Variable hours
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
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
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-118B Intermediate Taekwondo
.5-2 units SC
• Variable hours
This is an activity course designed to teach intermediate taekwondo skills, including sparring techniques. Improvement of physical fitness and endurance will be emphasized with special attention paid to safety procedures and injury prevention. The history of taekwondo in the United States and an introduction to board-breaking techniques will be presented. CSU, UC (credit limits may apply to UC - see counselor)

KNCMB-118C Advanced Taekwondo
.5-2 units SC
• Variable hours
This is an activity course designed to teach advanced taekwondo skills for the student to develop powerful hand and kick striking techniques, as well as competition sparring strategies. Physical fitness and endurance will be further developed and special attention will be paid to safety procedures and injury prevention. Preparation for taekwondo competition will also be addressed. CSU, UC (credit limits may apply to UC - see counselor)

KNCMB-126A Beginning Aikido
.5-2 units SC
• Variable hours
This is an activity course involving the history, philosophy, techniques and safety aspects of aikido. This is a Japanese warrior art involving a noncompetitive, non-fighting 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  
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  
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  
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  
This is an activity course involving the history, philosophy, techniques and safety aspects of Kajukenbo 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  
A supplemental course is martial arts/combatives to provide a study of current concepts, movements and problems in combatives and related subdivisions. Specific topics will be announced in the schedule of classes. CSU
## Kinesiology Dance

### Family: Tap
- KNDAN-160A Tap Dance I
- KNDAN-160B Tap Dance II

### Family: Dance Production
- DANCE-150A Dance Production II
- DANCE-242 Repertory Dance Production I
- DANCE-244 Repertory Dance Production II
- DANCE-246 Dance Production I
- DANCE-248 Dance Production II
- DANCE-256 Dance Production Choreography

### Family: Dance Performance
- DANCE-150B Dance Production II - Tech Week
- DANCE-243 Repertory Dance Production I - Tech Week
- DANCE-245 Repertory Dance Production II - Tech Week
- DANCE-247 Dance Production I - Tech Week
- DANCE-249 Dance Production II - Tech Week
- DANCE-257 Dance Production Choreography - Tech Week

### Family: Dance Survey
- KNDAN-100 Introduction to Dance
- KNDAN-162 Broadway Dance

### Family: Urban Dance
- KNDAN-150A Beginning Hip-Hop and Urban Funk
- KNDAN-150B Intermediate Hip-Hop and Urban Funk
- KNDAN-170A Hip-Hop and Urban Funk Dance I
- KNDAN-170B Hip-Hop and Urban Funk Dance II

### KNDAN-100 Introduction to Dance
- 0.5-2 units SC
  - Variable hours
This is an introductory dance course focusing on the development of coordination, rhythm, strength, flexibility, alignment, and basic dance movement combinations in a variety of genres. Basic musculoskeletal alignment, movement safety, and dance appreciation skills will also be covered. CSU, UC

### KNDAN-105A Pilates Mat Work I
- 0.5-2 units SC
  - Variable hours
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 Pilates Mat Work II
- 0.5-2 units SC
  - Variable hours
  - Recommended: KNDAN-105A or equivalent
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
- 0.5-2 units SC
  - Variable hours
This is an introductory course in ballet techniques. This class will focus on ballet barre, center adagio, allegro work, and across-the-floor combinations. An introduction to the history of the genre and principles of ballet as an art form will also be included. CSU, UC

### KNDAN-110B Ballet Fundamentals II
- 0.5-2 units SC
  - Variable hours
  - Recommended: KNDAN-110A or equivalent
This is a beginning class in classical ballet techniques. The focus is on beginning barre, beginning center adagio and allegro work and beginning ballet movement combinations in the center. The course also explores the history of ballet and principles as a contemporary art form. CSU, UC

### KNDAN-120A Jazz Dance Fundamentals I
- 0.5-2 units SC
  - Variable hours
This is an introductory course in jazz dance technique. The focus is on proper jazz dance alignment, center work and movement across the floor. Introduction to the history of jazz dance will also be covered. CSU, UC

### KNDAN-120B Jazz Dance Fundamentals II
- 0.5-2 units SC
  - Variable hours
  - Recommended: KNDAN-120A or equivalent
This is a beginning course in jazz dance technique. The focus is on proper jazz dance alignment, isolations and beginning jazz dance choreography. The evolution of jazz dance from African and Haitian dance to contemporary jazz dance technique will also be covered. CSU, UC
KNDAN-130A Modern Dance Fundamentals I
.5-2 units SC
• Variable hours
This is an introductory course in modern dance technique. The focus will be on the development of proper modern dance alignment, center work, and movement across the floor. An introduction to modern dance history will also be included. CSU, UC

KNDAN-130B Modern Dance Fundamentals II
.5-2 units SC
• Variable hours
• Recommended: KNDAN-130A or equivalent
This is a course in beginning modern dance technique. The focus will be on beginning modern dance alignment, center work and modern dance movements across the floor. Current events that shape the history of modern dance in America and in Europe will also be covered. CSU, UC

KNDAN-150 Topics in Dance Arts
.3-4 units SC
• Variable hours
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-160A Tap Dance I
.5-2 units SC
• Variable hours
This is a beginning course in tap dance technique. The focus is on a wide range of tap dance styles. The cultural and historical aspects of this genre will also be studied. CSU, UC

KNDAN-160B Tap Dance II
.5-2 units SC
• Variable hours
• Recommended: KNDAN-160A or equivalent
This is an intermediate course in tap dance technique. The focus is on the introduction of intermediate tap dance steps and combinations. The contribution of tap dance to American art and culture will also be studied. CSU, UC

KNDAN-162 Broadway Dance
.5-2 units SC
• Variable hours
This is a course in Broadway musical dance technique. Dance styles from a variety of Broadway genres, as well as audition techniques, will be covered. The history of dance in musical theater and its impact on American culture will also be discussed. CSU, UC

KNDAN-164A Ballroom/Social Dance I
.5-2 units SC
• Variable hours
This is an activity course in basic ballroom/social dance. This course will focus on the techniques, history, terminology, principles and other elements, including style and rhythm of ballroom/social dance. A partner is not necessary as this course will incorporate an understanding of dance footwork specific to leaders and followers. A variety of dance styles will be covered, and may include American style fox-trot, American style waltz, American style tango, night club two-step, hustle, polka, quickstep and Viennese waltz. CSU, UC

KNDAN-166 Swing Dance
.5-2 units SC
• Variable hours
This is an introductory course in Swing dances. The techniques, terminology, steps, patterns, rhythms, music and history of the various Swing dances will be covered. This is a social dance class, but a partner is not required. CSU, UC

KNDAN-168A Salsa and Latin Dance I
.5-2 units SC
• Variable hours
This is an introductory course in the Latin dances, including Salsa. The techniques, terminology, steps, patterns, rhythms, music, history and development of a variety of Latin dances will be explored. This is a social dance class but a partner is not required. CSU, UC

KNDAN-168B Salsa and Latin Dance II
.5-2 units SC
• Variable hours
• Recommended: KNDAN-168A or equivalent
This is an intermediate level course in the Latin dances including Salsa. Complex techniques, patterns, terminology and rhythms will be explored as well as music history and the development of a variety of Latin dances. CSU, UC

KNDAN-169A Argentine Tango I
.5-2 units SC
• Variable hours
This dance activity course focuses on the fundamentals of Argentine Tango and relates the varied and complex rhythms of the music to the movements that are unique to this dance. CSU, UC
Kinesiology dance

KNDAN-170A Hip-Hop and Urban Funk Dance I
.5-2 units SC
• Variable hours
This dance activity course focuses on beginning hip-hop and funk dance technique. The impact of hip-hop and funk on popular dance, ethnic influences, historical events, and how these dance styles have come to reflect the diversity of America will be discussed. CSU, UC

KNDAN-170B Hip-Hop and Urban Funk Dance II
.5-2 units SC
• Variable hours
This dance activity course focuses on intermediate hip-hop and funk dance technique. This course is designed to increase student movement, vocabulary, and technical skills to include complex foot work, polyrhythmic movements, and the ability to improvise in a cipher. Similarities and differences of popular/social dance in the United States will also be presented. CSU, UC

KINESIOLOGY INTERCOLLEGIATE ATHLETICS – KNICA

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

KNICA-098 Intercollegiate Pre-Participation Orientation
.3 unit P/NP
• Non degree applicable
• 6 hours lecture per term
This is a course preparing new students intending to try-out/compete for an intercollegiate athletic team, for the upcoming academic term and season of competition. Students will complete the California Community College Athletic Association’s (CCCAA) athletic eligibility requirements, complete medical forms and waivers, register for the NCAA Clearinghouse, and fulfill other requirements for community college athletic competition.

KNICA-100 Student-Athlete Success I
2 units SC
• 27 hours lecture/36 hours laboratory per term
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
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
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
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
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
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

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

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

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-204  Intercollegiate Cross Country, Men
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school cross country experience or equivalent

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-205  Intercollegiate Cross Country, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school cross country experience or equivalent

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-206  Intercollegiate Football, Men
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school football experience or equivalent

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-210  Intercollegiate Soccer, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school soccer experience or equivalent

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-215  Intercollegiate Softball, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school softball experience or equivalent

Instruction and intercollegiate competition is offered in this sport to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-216  Intercollegiate Swimming and Diving, Men
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school swimming/diving experience or equivalent

Instruction and intercollegiate competition is offered in swimming and diving to those students who are selected, based on tryouts, prior to the start of the sport season. CSU, UC (credit limits may apply to UC - see counselor)

KNICA-217  Intercollegiate Swimming and Diving, Women
3 units  SC
• May be repeated once
• 175 hours activity per term
• Recommended: Competitive high school swimming/diving experience or equivalent

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)
Kinesiology 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
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
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
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
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
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
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
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)

LIBRARY STUDIES – LS

Richard Robison, Dean
Library and Learning Resources Division
Library Building, Room 219

LS-121  Information Literacy and Research Skills
1 unit  P/NP
• 9 hours lecture/27 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
The course teaches the research strategies and skills for successfully finding, retrieving, evaluating and using information in various formats. It combines library skills, research methods, and information technology literacy. Coursework includes the ethical and legal aspects of information use and the critical thinking skills necessary for effective college research. CSU, UC

LS-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
LIBRARY TECHNOLOGY – LT
Richard Robison, Dean
Library and Learning Resources Division
Library Building, Room 219

Possible career opportunities
Library courses teach the skills necessary to effectively locate, organize and use information in any academic or work setting. There are various titles for the jobs you will be qualified for with a certificate of achievement or associate of science degree in library technology: library technician, library assistant, library paraprofessional, instructional media assistant, information specialist, library media specialist, and website editor.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree

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 librarians in a diverse, multicultural, and democratic society, and how these needs can be met.
D. apply the basic principles and standardized systems of ordering, cataloging, classifying, processing, and maintaining library materials and resources.
E. demonstrate the workplace communication skills necessary to successfully interact with users and staff in the library and other information services.
F. identify and use the technologies found in the library and other information services.
G. analyze information critically to draw conclusions and/or solve problems when working with patrons, materials, and technology.

The associate in science degree in library technology prepares students for employment in the dynamic field of library and information services. The skills learned in this program may be used in public, school, academic, and corporate libraries, as well as in other jobs or businesses requiring information management skills. If you like working with people, books and information, consider a career in library technology.

DVC library technology students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to four-year institutions of their choice are met. Students who intend to transfer are advised to select either General Education Option 2 (IGETC) or Option 3 (CSU GE). General Education Option 1 is appropriate for students who do not intend to transfer.

To earn the degree, students must complete each course used to meet a major requirement with a “C” grade or higher, maintain an overall GPA of 2.5 or higher in the coursework required for the major, and complete all general education requirements. Certain courses may satisfy both a major and general education requirement; however, the units are only counted once. With department chairperson’s approval, other course substitutions are possible for use in completing the program.

major requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT-101</td>
<td>Foundations of Library and Information Services</td>
<td>3</td>
</tr>
<tr>
<td>LT-102</td>
<td>Access and Technical Services in Libraries</td>
<td>3</td>
</tr>
<tr>
<td>LT-104</td>
<td>Cataloging for Paraprofessionals</td>
<td>3</td>
</tr>
<tr>
<td>LT-105</td>
<td>Reference and Research Services: Tools and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>LS-121</td>
<td>Information Literacy and Research Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

plus at least 2 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT-295</td>
<td>Occupational Work Experience</td>
<td></td>
</tr>
<tr>
<td>LT-296</td>
<td>Internship in Occupational Work</td>
<td></td>
</tr>
</tbody>
</table>

plus at least 2 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL-177</td>
<td>Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>LS-150</td>
<td>Topics in Library Studies</td>
<td></td>
</tr>
<tr>
<td>LT-100</td>
<td>Introduction to a Career in Library</td>
<td>0.3-4</td>
</tr>
<tr>
<td>LT-106</td>
<td>School Library and Media Services</td>
<td>2</td>
</tr>
<tr>
<td>LT-107</td>
<td>Digital Assets: Tools and Methodologies</td>
<td></td>
</tr>
<tr>
<td>LT-109</td>
<td>Delivering Library Services: Issues, Theory, and Techniques</td>
<td>2</td>
</tr>
<tr>
<td>LT-110</td>
<td>Job Search Skills for Library Careers</td>
<td>1</td>
</tr>
<tr>
<td>LT-111</td>
<td>Storytelling</td>
<td>2</td>
</tr>
<tr>
<td>LT-112</td>
<td>Internet Skills for Library Personnel</td>
<td>1</td>
</tr>
<tr>
<td>LT-150</td>
<td>Topics in Library Technology</td>
<td>0.3-4</td>
</tr>
</tbody>
</table>

Notes: maximum number of units applicable to the program units in LT-295 or LT-196 is four. There may be no duplication of course units between groups of restricted electives.

total minimum required units 19

DIABLO VALLEY COLLEGE CATALOG 2017-2018 chapter four PROGRAM/COURSE DESCRIPTIONS 311
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.

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.

This certificate program prepares students for employment in the dynamic field of library and information services. The skills learned in this program may be used in public, school, academic, and corporate libraries, as well as in other jobs or businesses requiring information management skills. If you like working with people, books, and information, consider a career in library technology.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher and maintain an overall GPA of 2.5. With department chairperson’s approval, other course substitutions are possible for use in completing the program.

required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT-101</td>
<td>Foundations of Library and Information Services</td>
<td>3</td>
</tr>
<tr>
<td>LT-102</td>
<td>Access and Technical Services in Libraries</td>
<td>3</td>
</tr>
<tr>
<td>LT-104</td>
<td>Cataloging for Paraprofessionals</td>
<td>3</td>
</tr>
<tr>
<td>LT-105</td>
<td>Reference and Research Services: Tools and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>LS-121</td>
<td>Information Literacy and Research Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

plus at least 2 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT-295</td>
<td>Occupational Work Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>LT-296</td>
<td>Internship in Occupational Work</td>
<td>1-4</td>
</tr>
</tbody>
</table>

plus at least 2 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL-177</td>
<td>Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>LS-150</td>
<td>Topics in Library Studies</td>
<td>0.3-4</td>
</tr>
<tr>
<td>LT-100</td>
<td>Introduction to a Career in Library Technology</td>
<td>1</td>
</tr>
<tr>
<td>LT-106</td>
<td>School Library and Media Services</td>
<td>2</td>
</tr>
<tr>
<td>LT-107</td>
<td>Digital Assets: Tools and Methodologies</td>
<td>2</td>
</tr>
<tr>
<td>LT-109</td>
<td>Delivering Library Services: Issues, Theory, and Techniques</td>
<td>2</td>
</tr>
<tr>
<td>LT-110</td>
<td>Job Search Skills for Library Careers</td>
<td>1</td>
</tr>
<tr>
<td>LT-111</td>
<td>Storytelling</td>
<td>2</td>
</tr>
<tr>
<td>LT-112</td>
<td>Internet Skills for Library Personnel</td>
<td>1</td>
</tr>
<tr>
<td>LT-150</td>
<td>Topics in Library Technology</td>
<td>0.3-4</td>
</tr>
<tr>
<td>ARTDM-105</td>
<td>Introduction to Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ARTDM-171</td>
<td>Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-121</td>
<td>Practices and Concepts of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BUSMG-168</td>
<td>Customer Service</td>
<td>0.5</td>
</tr>
<tr>
<td>BUSMG-173</td>
<td>Intercultural Communication in the Workplace</td>
<td>0.5</td>
</tr>
<tr>
<td>CIS-100</td>
<td>Microsoft Windows – Comprehensive</td>
<td>2</td>
</tr>
<tr>
<td>COMSC-101</td>
<td>Computer Literacy</td>
<td>4</td>
</tr>
<tr>
<td>ENGL-177</td>
<td>Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>LS-150</td>
<td>Topics in Library Studies</td>
<td>0.3-4</td>
</tr>
<tr>
<td>LT-100</td>
<td>Introduction to a Career in Library Technology</td>
<td>1</td>
</tr>
<tr>
<td>LT-106</td>
<td>School Library and Media Services</td>
<td>2</td>
</tr>
<tr>
<td>LT-107</td>
<td>Digital Assets: Tools and Methodologies</td>
<td>2</td>
</tr>
<tr>
<td>LT-108</td>
<td>Delivering Library Services: Issues, Theory, and Techniques</td>
<td>2</td>
</tr>
<tr>
<td>LT-110</td>
<td>Job Search Skills for Library Careers</td>
<td>1</td>
</tr>
<tr>
<td>LT-111</td>
<td>Storytelling</td>
<td>2</td>
</tr>
<tr>
<td>LT-112</td>
<td>Internet Skills for Library Personnel</td>
<td>1</td>
</tr>
<tr>
<td>LT-150</td>
<td>Topics in Library Technology</td>
<td>0.3-4</td>
</tr>
<tr>
<td>LT-295</td>
<td>Occupational Work Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>LT-296</td>
<td>Internship in Occupational Work</td>
<td>1-4</td>
</tr>
<tr>
<td>LT-299</td>
<td>Experience Education in LT</td>
<td>1-4</td>
</tr>
</tbody>
</table>

Notes: maximum number of units applicable to the program units in LT-295 or LT-196 is four. There may be no duplication of course units between groups of restricted electives.

LT-100 Introduction to a Career in Library Technology

1 unit SC
- 18 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Formerly L-100

This course introduces the dynamic field of library and information technology for paraprofessionals. 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 will be explored. CSU
LT-101  
**Foundations of Library and Information Services**  
3 units LR  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course provides an introduction and overview of the missions, services, operations, and staffing of libraries and information centers. The tools and terminology of library services, the library technician’s role in the delivery of services, and strategies for successful job placement are emphasized. The course also explores current library issues and trends, as well as the relationship of libraries to the communities and populations they serve. CSU

LT-102  
**Access and Technical Services in Libraries**  
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course teaches the full array of access and technical services in a variety of library settings and collection formats including online systems and other technology applications. The theory and practice of selecting, acquiring and circulating materials in print and electronic formats is presented. Skills and competencies necessary for providing quality access services, the history of access services, and ethical, legal and policy considerations will be covered. CSU

LT-104  
**Cataloging for Paraprofessionals**  
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly L-104  
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

LT-105  
**Reference and Research Services: Tools and Techniques**  
3 units LR  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course is an introduction to the use of print and online information resources found in public, school, college and special libraries. Students learn effective techniques for assisting library patrons, and are provided opportunities for developing reference service skills. The class uses resources available through the Diablo Valley College library plus other commonly available resources. CSU

LT-106  
**School Library and Media Services**  
2 units SC  
- 36 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course presents the principles and procedures central to the operations of school libraries and media centers with an emphasis on the multi-dimensional role of the library technician. The creation of effective learning environments, technology applications, philosophies of service and programming, as well as collection development and other regular procedures will be explored. CSU

LT-107  
**Digital Assets: Tools and Methodologies**  
2 units SC  
- 36 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course provides an introduction to the basic processes of creating and managing digital assets including assessing materials, managing files for preservation, and using current digitizing software systems. Access issues, metadata schemes, quality control, scanning equipment and other technologies will also be examined. CSU

LT-109  
**Delivering Library Services: Issues, Theory, and Techniques**  
2 units SC  
- 36 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly L-109  
This course emphasizes oral and written communication skills and strategies that are essential to successful performance as a library paraprofessional. Communication within the organization, techniques to market programs and services, as well as customer and community relations are addressed. CSU

LT-110  
**Job Search Skills for Library Careers**  
1 unit SC  
- 18 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Formerly L-110  
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
Library technology

LT-111  Storytelling
2 units  SC
• 36 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Formerly L-111
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

LT-112  Internet Skills for Library Personnel
1 unit  SC
• 18 hours lecture per term
• Recommended: LT-103 or equivalent; eligibility for ENGL-122 or equivalent
• Formerly L-112
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

LT-150  Topics in Library Technology
.3-4 units  SC
• Variable hours
• Recommended: Eligibility for ENGL-122 or equivalent
• Formerly L-150
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

LT-295  Occupational Work Experience
Education in LT
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in LT-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
LT-295 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. Internships may be paid, non-paid, or some partial compensation provided. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

MACHINE TECHNOLOGY

See Engineering technology - ENGT

MATHMATICS – MATH

Despina Prapavessi, 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 are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.
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.

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.

The associate in science in mathematics 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 a 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>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-192</td>
<td>5</td>
</tr>
<tr>
<td>MATH-193</td>
<td>5</td>
</tr>
<tr>
<td>MATH-292</td>
<td>5</td>
</tr>
<tr>
<td>plus at least 3 units from:</td>
<td></td>
</tr>
<tr>
<td>MATH-194</td>
<td>3</td>
</tr>
<tr>
<td>MATH-294</td>
<td>5</td>
</tr>
<tr>
<td>plus at least 3 units from any course not used above, or:</td>
<td></td>
</tr>
<tr>
<td>MATH-142</td>
<td>4</td>
</tr>
<tr>
<td>MATH-195</td>
<td>4</td>
</tr>
</tbody>
</table>

Total minimum required units: 22

MATH-050 In-Progress Prealgebra with Arithmetic Review Self-Paced

4 units P/NP
• Non degree applicable
• 270 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.
Mathematics

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

This course covers arithmetic review, prealgebra, and their application in everyday life. 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, through 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/SCmathlab 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. This course covers arithmetic review, prealgebra, and their application in everyday life. 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-077  Summer Bridge to College Math
1 unit   LR
• Non degree applicable
• 40 hours laboratory per term
• Note: This course is part of the EOPS Summer Institute Learning Community and is designed for recent high school graduates. Math/English assessment tests are required. Contact the EOPS Summer Institute Coordinator for more information.

This course is designed to help students transition to math in college from high school. Students work with an instructor and the web-based ALEKS program to assess and build math skills in preparation for a college math course.

MATH-080  Topics in Basic Skills Math
.3-4 units   SO
• 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-085  Accelerated Algebra I
4 units   SC
• Non degree applicable
• 54 hours lecture/54 hours laboratory per term

This is the first course of a two-semester accelerated algebra sequence that includes the material in MATH-075 and the first half of MATH-090. Topics include algebraic reasoning, percentages, problem solving, solving linear equations, graphing lines, and systems of equations.

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

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.

DIABLO VALLEY COLLEGE  CATALOG 2017-2018
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: Formerly MATH-110SP. 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 labs 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, flexibly-paced class 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-092  Math for Trade Pre-Apprentices
4 units  P/NP
- Non degree applicable
- 72 hours lecture per term
- Note: This course is part of the Pre-Apprenticeship program.
This course provides practice in the mathematics needed to pass apprenticeship exams for various trades, as well as the mathematics required by apprentices on the job site. This course offers mathematics instruction contextualized for the building trades.

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, quantitative and qualitative 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 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-119  Accelerated Algebra II
4 units  SC
- 54 hours lecture/54 hours laboratory per term
- Prerequisite: Placement through the assessment process or MATH-085 or MATH-090 or MATH-090SP or MATH-090E or equivalent
- Note: Students who have successfully completed MATH-120 or MATH-120SP should not enroll in MATH-119. Students who have successfully completed MATH-120 or MATH-120SP will not receive credit for MATH-119. This is the second course of a two-semester accelerated algebra sequence; it covers the topics in the second half of MATH-090 and in MATH-120. Special products and factors, fractional equations, inequalities, complex numbers, logarithms, and functions will be covered.

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 factors, fractional equations, inequalities, systems of linear equations, conics, complex numbers, the binomial theorem, logarithms, and functions. The course is equivalent to a second year high school algebra course.
MATH-120SP  Intermeiod Algebra - Self Paced
5 units  SC
• 270 hours laboratory per term
• Prerequisite: Placement through the assessment pro-
cess 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 theo-
rem, 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 pro-
cess or MATH-120 or 120SP or equivalent
• Recommended: High school geometry or equivalent
This course focuses on the theory and applications of trigo-
nometry, including right triangle trigonometry, general angle
trigonometry, and trigonometry on the unit circle, as well
as trigonometric functions of real numbers. Applications
include solutions of right and oblique triangles in problems
in surveying, physics, engineering and navigation. CSU

MATH-124  Mathematics for Liberal Arts
3 units  LR
• 54 hours lecture per term
• Prerequisite: Placement through the assessment pro-
cess or MATH-119 or MATH-120 or 120SP or equivalent
This course presents applications of techniques and concepts
of intermediate algebra and critical thinking to the solving of
contemporary problems in mathematics. Topics may include
exponential functions, logarithmic scales, probability, statist-
cs, finance, matrix operations, logic or geometry. Historical
context of some of the great ideas of mathematics will also
be explored. CSU, UC

MATH-125  Mathematical Concepts for Elementary
School Teachers
3 units  SC
• 54 hours lecture per term
• Prerequisite: Placement through the assessment pro-
cess or MATH-119 or MATH-120 or 120SP or equivalent
This course focuses on the development of quantitative rea-
soning skills through in-depth, integrated explorations of
topics in mathematics, including real number systems and
subsystems. Emphasis is on comprehension and analysis of
mathematical concepts and applications of logical reasoning.
C-ID MATH 120, CSU, UC

MATH-135  College Algebra
4 units  LR
• 72 hours lecture per term
• Prerequisite: Placement through the assessment pro-
cess or MATH-119 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; theo-
ry 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 pro-
cess or MATH-119 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 labo-
ratories 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 func-
tions; 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  
- 10 hours lecture/12 hours laboratory/12 hours laboratory by arrangement per term  
- Prerequisite: Placement through the assessment process or MATH-142 or MATH-144 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-119 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. C-ID MATH 110, 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: Placement through the assessment process or 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, UC (credit limits may apply to UC - see counselor)

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-119 or MATH-120 or 120SP or equivalent  
This course applies intermediate algebra and critical thinking to the solution of 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, and finance. Students will use a graphing calculator or computer software to manipulate matrices. C-ID MATH 130, 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-125 or MATH-135SP or MATH-191 or equivalent  
- Recommended: Eligibility for ENGL-122 or equivalent  
The first in a two-semester 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. C-ID MATH 140, 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; eligibility for ENGL-122 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)
Mathematics

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  
This course presents 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. C-ID MATH 210, CSU, UC (credit limits may apply to UC - see counselor)

MATH-193  Analytic Geometry and Calculus II  
5 units LR  
- 90 hours lecture per term  
- Prerequisite: MATH-192 or equivalent  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course is a continuation of MATH-192. Techniques and applications of integration in geometry, science and engineering will be explored. Work with algebraic and transcendental functions will be continued. Other topics will include numerical methods in evaluation of the integral, infinite series, solving differential equations, applications of differential equations, polar coordinates, parametric equations and conic sections. C-ID MATH 220, CSU, UC

MATH-194  Linear Algebra  
3 units LR  
- 54 hours lecture per term  
- Prerequisite: MATH-193 or equivalent  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course is an introduction to linear algebra, covering vector spaces, matrices, determinants, bases, and linear transformations. Techniques for solving systems of equations using matrices, and applications of linear transformations will be covered. C-ID MATH 250, CSU, UC

MATH-195  Discrete Mathematics  
4 units LR  
- 72 hours lecture per term  
- Prerequisite: MATH-193 or equivalent  
- Recommended: Eligibility for ENGL-122 or equivalent  
- Note: MATH-193 or equivalent may be taken either as a prerequisite or concurrently  
This course provides an introduction to propositional logic, induction, set theory, relations, and functions, counting and combinatorics, introduction to trees, graph theory, algorithms, and algebraic structures. The emphasis is on topics of interest to computer science students. CSU, UC

MATH-292  Analytic Geometry and Calculus III  
5 units LR  
- 90 hours lecture per term  
- Prerequisite: MATH-193 or equivalent  
This class covers the further study of limits, parametric equations, vector-valued functions, analytic geometry of three dimensions, partial derivatives, multiple integrals, and Green's, Stokes' and the Divergence theorems. C-ID MATH 230, 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. C-ID MATH 240, CSU, UC

MATH-298  Independent Study  
.5-3 units SC  
- Variable hours  
- Note: Submission of acceptable educational contract to department and Instruction Office is required.  
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

Toni Fannin, Interim 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 are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

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: 22 total minimum required units

applied music
a minimum of 2 times for a total of 2 units
MUSIC-100 Applied Music.............................................. 1

theory and musicianship
MUSIC-122 Theory and Musicianship II............................ 4
MUSIC-122* Theory and Musicianship III.......................... 4
MUSIC-222 Theory and Musicianship IV......................... 4

piano proficiency
MUSIC-150 Beginning Piano I....................................... 1*
MUSIC-151 Beginning Piano II..................................... 1*

large ensemble
plus a minimum of 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-180 Diablo Valley Masterworks Chorale................ 1
MUSIC-236 Night Jazz Band.......................................... 1
MUSIC-240 Symphonic Band......................................... 1
MUSIC-290 DVC Philharmonic Orchestra.......................... 1

*Credit by examination available recommended courses:

music literature
MUSIC-110 Music Appreciation....................................... 3
MUSIC-112 America’s Music - A Multicultural Perspective.. 3
MUSIC-114 World Music.................................................. 3
MUSIC-117 History of Rock and R&B.............................. 3
MUSIC-118 History of Jazz.............................................. 3

---

DIABLO VALLEY COLLEGE CATALOG 2017-2018 chapter four PROGRAM/COURSE DESCRIPTIONS 321
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.

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, and large ensemble. The choice of large ensemble performance and choice of voice or specific instrument in applied music 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 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 a 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>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSIC-100</td>
<td>1*</td>
</tr>
<tr>
<td>MUSIC-122</td>
<td>4</td>
</tr>
<tr>
<td>MUSIC-123</td>
<td>4</td>
</tr>
<tr>
<td>MUSIC-222</td>
<td>4</td>
</tr>
<tr>
<td>MUSIC-223</td>
<td>4</td>
</tr>
</tbody>
</table>

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSIC-135</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-136</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-140</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-162</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-166</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-240</td>
<td>1</td>
</tr>
<tr>
<td>MUSIC-290</td>
<td>1</td>
</tr>
</tbody>
</table>

| total units for the major | 24 |

*must be taken 4 times (total 4 units)

### Limitations on enrollment

Effective fall term 2013, changes to the regulations that govern community college enrollments placed limitations on the number of courses that students may take in certain disciplines within the Contra Costa Community College District. The charts below indicate which Diablo Valley College (DVC) courses are assigned to groups of courses ("families") for which limitations have been imposed. Certain courses within certain “families” may be repeated (see catalog description), however, students are limited to four enrollments within the family. Certain DVC courses are equivalent to courses at Los Medanos College and Contra Costa College. An enrollment in an equivalent course at one of those colleges will count toward the allowable four enrollments within the family.

NOTE: Diablo Valley College may offer experimental or topics courses. When appropriate, based on content, such courses will be assigned to a “family” and that enrollment will be counted as an experience within the “family”.

### MUSIC

**Family: Applied music**

- MUSIC-100 Applied Music

**Family: Repertoire/literature**

- MUSIC-255 Piano Repertoire Master Class

**Family: Class piano**

- MUSIC-150 Beginning Piano I
- MUSIC-151 Beginning Piano II
- MUSIC-250 Intermediate Piano I
- MUSIC-251 Intermediate Piano II

**Family: Class classical guitar**

- MUSIC-101 Beginning Guitar
- MUSIC-102 Intermediate Guitar
### Family: Solo improvisation
- **MUSIC-127** Jazz Theory and Improvisation
- **MUSIC-128** Jazz Theory and Improvisation II
- **MUSIC-152** Jazz Piano
- **MUSIC-171** Jazz and Popular Solo Voice
- **MUSIC-190JA** Jazz Theory and Improvisation II

### Family: Pedagogy
- **MUSIC-256** Pedagogy for Studio Music Teachers

### Family: Class vocal study
- **MUSIC-133** Opera Theater
- **MUSIC-170** Applied Voice Training
- **MUSIC-179** Intermediate Applied Voice

### Family: Classical large ensembles - Orchestra
- **MUSIC-180** Diablo Valley Masterworks Chorale
- **MUSIC-290** DVC Philharmonic Orchestra

### Family: Classical large ensembles - Choir
- **MUSIC-162** Concert Choir

### Family: Classical large ensembles - Band
- **MUSIC-240** Symphonic Band

### Family: Classical chamber ensembles
- **MUSIC-103** Guitar Ensemble
- **MUSIC-104** Advanced Guitar Ensemble
- **MUSIC-140** Wind Ensemble
- **MUSIC-142** Woodwind Ensemble
- **MUSIC-144** Brass Ensemble
- **MUSIC-166** Chamber Singers
- **MUSIC-168** Percussion Ensemble
- **MUSIC-176** String Ensemble
- **MUSIC-252** Piano Ensemble

### Family: Classical large ensembles - Jazz, pop, rock
- **MUSIC-136** Jazz Ensemble
- **MUSIC-236** Night Jazz Band

### Family: Ensembles - Jazz, pop, rock
- **MUSIC-106** Rock Theory and Improvisation I
- **MUSIC-130** Jazz Workshop
- **MUSIC-135** Vocal Jazz Ensemble
- **MUSIC-137** Jazz Combos
- **MUSIC-190RT** Rock Theory and Improvisation II
- **MUSIC-190SM** Soul Music of the 1962-1980 Era
- **MUSIC-208** Rock Theory and Improvisation II

### Family: Musical theater
- **MUSIC-134** Musical Theater Workshop
- **MUSIC-190SH** Show Choir

### Family: Performance
- **MUSIC-109** Live Music Production and Stagecraft I
- **MUSIC-190LP** Live Production Techniques
- **MUSIC-209** Live Music Production and Stagecraft II

### MUSIC-100 Applied Music
1 unit LR
- May be repeated three times
- 72 hours laboratory by arrangement per term
- Limitation on enrollment: Audition required. Specific days and times are announced in the Schedule of Classes. Students must have the ability to read written music at sight, play one instrument or sing with an accomplished level of technical facility, an accomplished level of metric and rhythmic accuracy as a soloist, and an accomplished level of intonation and/or harmonic awareness.
- Note: This course is limited to students majoring in music and intending to complete the B.A. or A.A.T. in Music, and must therefore 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).
- This course consists of individualized study of the appropriate techniques and repertoire for the specific instrument or voice being studied. The emphasis is on the progressive development of skills needed for solo performance. Achievement is evaluated through a juried performance. Students receive six hours of lessons from an instructor scheduled throughout the semester. Students are required to practice at least 3 hours per week during scheduled supervised practice hours in the department practice rooms. Students will meet an additional 12 hours during the semester for group discussion and performances. C-ID MUS 160, CSU, UC

### 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

### 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
Music

MUSIC-103 Guitar Ensemble
1 unit
- 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

MUSIC-104 Advanced Guitar Ensemble
1 unit
- 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

MUSIC-108 Rock Theory and Improvisation I
1 unit
- 60 hours laboratory per term

This course presents the basic study and performance of historical Blues, including Funk, Soul, R&B, Country, and Rock. Both theoretical and performance aspects will be covered. Small bands (guitar, bass, drums, keyboards, horns, and vocals) will be formed for class performances. Guest artists and industry experts will be featured each term. CSU, UC

MUSIC-109 Live Music Production and Stagecraft I
1 unit
- 60 hours laboratory per term

This course provides the beginning musician with basic live-show production experience. Practical applications of stage processes from load-in to load-out, including basic stagecraft, live sound, and light engineering will be presented. Guest artists and industry experts will be featured each term. CSU, UC

MUSIC-110 Music Appreciation
3 units
- 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. C-ID MUS 100, CSU, UC

MUSIC-112 America's Music- A Multicultural Perspective
3 units
- 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
- 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
- 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, Rhythm and Blues (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 presents the history of jazz music from African retentions, ragtime, stride, dixieland, swing, be-bop, and cool, to various contemporary jazz and fusion art forms. It includes a study of the cultural 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-119 The History and Culture of Hip Hop Music
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course presents the development of hip hop as a musical style and cultural movement. Students will examine key figures in hip hop, institutions, and social settings through readings, electronic media, videos, and hands-on projects. Students will also investigate how hip hop culture is not only a source of entertainment, but also a medium that analyzes and/or provides commentary regarding social, economic, political and cultural issues dealing with identity, cultural genocide, misogyny, racism, classism, materialism, freedom of speech and sexuality. CSU, UC

MUSIC-121 Introduction to Music Composition
3 units SC
- 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term
- Recommended: MUSIC-122 or equivalent
This course presents an introduction to basic techniques for music composition. Listening, reading, discussion, and composing exercises will focus student awareness on the diversity of aesthetics, styles, and techniques that exist today. CSU, UC

MUSIC-122 Theory and Musicianship I
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Note: Credit by examination option available
This course is a study of the fundamental concepts of Western music theory. These concepts are applicable to both classical and popular styles. The study addresses notation, fundamental theoretical concepts, their relationship to the evolution of musical aesthetics in Western culture, musicianship skills including sight singing, rhythmic training, ear training, dictation, and keyboard realization, and basic composition. C-ID MUS 120, MUS 125, CSU, UC

MUSIC-123 Theory and Musicianship II
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Recommended: MUSIC-122 or equivalent
This course is a study of harmony and voice leading 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, 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/18 hours laboratory by arrangement per term
- Recommended: MUSIC-122 or equivalent
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-128 Jazz Theory and Improvisation II
2 units SC
- 18 hours lecture/36 hours laboratory/18 hours laboratory by arrangement per term
- Recommended: MUSIC-127 or equivalent
This is an intermediate course for the study of jazz theory with special emphasis on 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
• Limitation on enrollment: Audition required. Specific days and times are announced in the Schedule of Classes.
This course presents the study of skills required to play jazz, including intonation, rhythmic accuracy, tone, dynamic control, style-specific articulation, phrasing, expression, sight-reading, improvisation, and practicing. A variety of styles will be studied including Medium Swing, Latin, and Fusion. Skills are developed in an ensemble setting and public performances are included. New literature will be studied each semester. CSU, UC

MUSIC-133 Opera Theater
1 unit SC
• May be repeated three times
• 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
• May be repeated three times
• 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-150  Beginning Piano I
1 unit SC
- 54 hours laboratory per term
This course provides group instruction in piano for students with no prior keyboard experience. Ensemble and solo works, basic rhythm, and fundamental keyboard and music theory skills based on major and minor five-note patterns will be covered. 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. Ensemble and solo works beyond the five-finger position will be covered. Classical and popular music will be emphasized. CSU, UC

MUSIC-152  Jazz Piano
1 unit SC
- 72 hours laboratory per term
- Recommended: MUSIC-151 or equivalent
This course provides study in the theory and practice of jazz piano through learning chords, voicings, improvisational techniques, and various idiomatic styles. CSU, UC

MUSIC-162  Concert Choir
1 unit SC
- May be repeated three times
- 72 hours laboratory per term
- Limitation on enrollment: Audition required. Specific days and times are announced in the Schedule of Classes.
This course presents 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-208  Rock Theory and Improvisation II
1 unit  SC
- 60 hours laboratory per term
- Recommended: MUSIC-108 or equivalent
This course presents the intermediate study and performance of historical Rock, including Funk, Soul, R&B, and Country. Both theoretical and performance aspects will be covered. Large bands (guitars, bass, drums, percussion, keyboards, horns, and multi vocals) will be formed for class performances. Guest artists and industry experts will be featured each term. CSU

MUSIC-209  Live Music Production and Stagecraft II
1 unit  SC
- 60 hours laboratory per term
- Recommended: MUSIC-109 or equivalent
This course provides the intermediate musician with professional level live-show production experience. Practical applications of stage processes from load-in to load-out, including professional level stagecraft, live sound, and light engineering will be presented. Guest artists and industry experts will be featured each term. CSU

MUSIC-222  Theory and Musicianship III
4 units  SC
- 54 hours lecture/54 hours laboratory per term
- Recommended: MUSIC-123 or equivalent
This course is a study of harmony and voice-leading 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-236  Night Jazz Band
1 unit  SC
- May be repeated three times
- 72 hours laboratory per term
- Limitation on enrollment: Audition required. Specific days and times are announced in the Schedule of Classes.
This course presents the study of big band jazz for performance in classroom and community settings. A variety of styles will be studied including Swing, Hip-Hop, Afro-Cuban, and Be Bop. Community outreach and public performances at jazz clubs, community events and other venues will be emphasized. Occasionally, guest artists will be featured. New literature will be studied each semester. CSU, UC

MUSIC-240  Symphonic Band
1 unit  LR
- May be repeated three times
- 72 hours laboratory per term
- Limitation on enrollment: Audition required. Specific days and times are announced in the Schedule of Classes. Students must be able to perform with rhythmic accuracy, accurate intonation, and appropriate phrasing and expression.
This course presents the study, rehearsal, and public performance of symphonic band literature, with an emphasis on the development of skills needed to perform within a symphonic band. 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, UC
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
- Limitation on enrollment: Audition required. Specific days and times are announced in the Schedule of Classes.

This class provides a weekly forum for pianists to perform solo repertoire and includes constructive comments and direction in a master class format. Students will produce four in-class and two public performances during the course. New keyboard works from the Baroque, Classical, Romantic, and Contemporary Period repertory will be studied each semester. CSU, UC

MUSIC-256 Pedagogy for Studio Music Teachers
1 unit SC
- 72 hours laboratory per term

This class presents a practical study of pedagogy for the private music studio. The course is designed for current and aspiring studio music teachers of keyboard and instrumental students. 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 populations. CSU

MUSIC-258 DVC Philharmonic Orchestra
1 unit SC
- May be repeated three times
- 72 hours laboratory per term
- Limitation on enrollment: Audition required. Specific days and times are announced in the schedule of classes.

In this course students will study, rehearse, and publicly perform 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 is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

Toni Fannin, Interim 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 engineer, recording engineer, studio director or manager, sound designer, sound technician, and tour coordinator. Many careers require more than two years of study.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.
Music industry studies

Associate in arts degree
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.

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: units
MUSX-172 Introduction to Electronic Music and MIDI ........ 3
MUSX-173 Advanced Electronic Music ....................... 3
MUSX-174 Introduction to Pro Tools .......................... 3
MUSX-175 Advanced Pro Tools ............................... 3
MUSX-181 Introduction to the Music Industry ............ 3

plus at least 9 units from:
MUSX-120 Live Sound .......................................... 3
MUSX-124 Introduction to Music Production and Multi-Track Recording ........... 3
MUSX-125 Advanced Music Production and Multi-Track Recording ............ 3
MUSX-177 Introduction to Reason ................................ 3
MUSX-178 Sound for Picture .................................... 3
MUSX-182 Songwriting I ......................................... 3
MUSX-183 Artist Development in the Music Industry ........ 3
MUSX-270 DIY Music Production and Promotion Projects ........................................ 3
MUSX-282 Songwriting II ......................................... 3
MUSX-296 Internship in Occupational Work Experience Education in MUSX ...................................... 1-4

total minimum units required 24

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.

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: units
MUSX-172 Introduction to Electronic Music and MIDI .... 3
MUSX-173 Advanced Electronic Music ....................... 3
MUSX-174 Introduction to Pro Tools ......................... 3
MUSX-175 Advanced Pro Tools ............................... 3
MUSX-181 Introduction to the Music Industry ............ 3
MUSX-182 Songwriting I ......................................... 3
MUSX-183 Artist Development in the Music Industry .... 3
MUSX-270 DIY Music Production and Promotion Projects ........................................ 3
MUSX-282 Songwriting II ......................................... 3
MUSX-296 Internship in Occupational Work Experience Education in MUSX ...................................... 1-4

plus at least 9 units from:
MUSX-120 Live Sound .......................................... 3
MUSX-124 Introduction to Music Production and Multi-Track Recording ........... 3
MUSX-125 Advanced Music Production and Multi-Track Recording ............ 3
MUSX-177 Introduction to Reason ................................ 3
MUSX-178 Sound for Picture .................................... 3
MUSX-182 Songwriting I ......................................... 3
MUSX-183 Artist Development in the Music Industry ........ 3
MUSX-270 DIY Music Production and Promotion Projects ........................................ 3
MUSX-282 Songwriting II ......................................... 3
MUSX-296 Internship in Occupational Work Experience Education in MUSX ...................................... 1-4

total minimum required units 24
MUSX-120  Live Sound  
3 units  SC  
- 54 hours lecture per term  
This course is an overview of live concert sound reinforcement. Topics include basic sound system theory and its application. It also covers individual sound system component operation, including microphones, mixers, effects, power amplifiers, and speaker systems. This course offers opportunities for hands-on experiences in troubleshooting, sound checking, and mixing sound for live performance applications. C-ID CMUS 120X, CSU

MUSX-124  Introduction to Music Production and Multi-Track Recording  
3 units  SC  
- 54 hours lecture per term  
This course is designed to give the music student a working knowledge of the principles and techniques of multi-track recording. This course will explore, analyze and evaluate contemporary music production techniques and apply these techniques to real production and recording situations. Emphasis will be on student involvement with various interrelated roles, including that of studio musician, writer/arranger, producer and sound engineer. C-ID CMUS 130X, CSU

MUSX-125  Advanced Music Production and Multi-Track Recording  
3 units  SC  
- 54 hours lecture per term  
- Recommended: MUSX-124 or equivalent  
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-150  Topics in Music Industry Studies  
.3-4 units  SC  
- Variable hours  
A supplemental course in music industry studies designed to provide a study of current concepts and problems in music industry studies. Specific topics to be announced in the schedule of classes. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.  
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. C-ID CMUS 110X, 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.  
This advanced course builds upon the knowledge and technical skills developed in MUSX-172 Introduction to Electronic Music and Musical Instrument Digital Interface (MIDI). The integration of MIDI and digital audio recording environments will be studied as well as the development of advanced post production skills needed for employment in the music recording industry. Topics will include digital audio recording and editing, effects processing, mixing, and digital audio file management and conversion, sampling, synthesis, and advanced MIDI sequencing. CSU

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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.  
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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

This is an advanced course 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 semesters. 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-176 Introduction to Ableton Live
3 units SC
- 36 hours lecture/18 hours laboratory/36 hours laboratory by arrangement per term

This course presents skills used within the music production software Ableton Live. Topics will include music sequencing, digital audio recording, software synthesis, sampling, Musical Instrument Digital Interface (MIDI), MIDI mapping, virtual effects, automation, signal flow, and mixing. 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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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. Only the first course completed will be applied toward a degree or certificate requirement. Units for both courses will apply towards the 60 units required for the degree.

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

This course presents an introduction to the music industry, including its evolution, corporate structure, and legal practices. Topics include record production, music publishing, marketing, use of music in film, television, and advertising, touring, development and implementation of business plan, and career strategies. CSU

MUSX-182 Songwriting I
3 units SC
- 54 hours lecture per term

In this course, students will study the process of songwriting. Songs will be analyzed in terms of chord structure, form, rhythm, melody, harmony, and lyrics. Original compositions and performances will be expected from all students. C-ID CMUS 150X, CSU

MUSX-183 Artist Development in the Music Industry
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent

This course presents the skills and techniques utilized by music industry professionals responsible for the identification, development, and promotion of successful artists. Tools such as identifying talent, building an artist development team, networking, and structuring a cohesive development plan are explored. Career options, such as artist management, Artists and Repertoire (A&R), sync and licensing, public relations, and social network promotions will be reviewed. This course is also designed to assist the do it yourself (DIY) musician in developing the skills and techniques used in self-management. CSU
MUSX-270  DIY Music Production and Promotion Projects
3 units  SC
• 36 hours lecture/18 hours laboratory/36 hours laboratory
by arrangement per term
• Recommended: MUSX-124, 172, 174, 181 or equivalents
This course provides students the opportunity to 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 apply the music production tools and business skills they have developed in prior semesters of the Music Industry Studies program. CSU

MUSX-282  Songwriting II
3 units  SC
• 54 hours lecture per term
• Recommended: MUSX-182 or equivalent
This course presents the continued study of the structural, rhythmic, melodic, harmonic, and lyrical components of a song. Original compositions and performances are required of all students. CSU

MUSX-295  Occupational Work Experience Education in MUSX
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in MUSX-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment Form can be accessed at www.dvc.edu/wrkrx. Incomplete grades are not awarded for this course.
MUSX-295 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

MUSX-296  Internship in Occupational Work Experience Education in MUSX
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in the MUSX-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkrx. Incomplete grades are not awarded for this course.
MUSX-296 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. 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.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.
Associate in science in nutrition and dietetics for transfer

Students completing the program will be able to...

A. analyze data and critique information in the nutritional sciences.
B. identify nutrition-related chronic diseases by applying knowledge of nutrient functions, food sources and physiological systems.
C. explain how genetics and life style factors affect nutritional and health status.
E. assess a diet for nutrient adequacy using a current computerized USDA database.

The associate in science in nutrition and dietetics for transfer offers students basic knowledge in microbiology, human anatomy and physiology, chemistry and nutrition. It 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 required term units of CSU-transferable coursework with a minimum GPA of 2.0. 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 with degrees in nutrition and dietetics find employment within a wide range of organizations, such as medical facilities, research labs, government agencies, universities, pharmaceutical companies, and the food industry. This degree is also an excellent preparation for students planning to continue training in medicine, public health and/or other allied health sciences.

The associate in science in nutrition 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 a 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.

NUTRI-115 Nutrition and Health: Personal Applications

3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
• Note: Credit by examination option available

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-130  Food and Nutrition: Cross Cultural Perspectives  
3 units  SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent  
This course examines the regional, ethnic, cultural, gender, religious, historical, and social influences on food patterns, cuisines, and health and healing, as well as how food is viewed as an expression of cultural diversity. Students will explore traditional foods of geographic areas and cultures. The geographic factors in food availability, global food issues, dietary habits, and socioeconomic influences on food culture, and nutrition problems of various ethnic groups will also be examined. The course also addresses nutrition consequences of ethnic food choices and sanitation and safety practices. CSU, UC

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 scientific concepts of nutrition related to the function of nutrients in basic life processes and current health issues with emphasis on individual needs. Course content is appropriate for majors in Dental Hygiene, Nutritional Science, Nursing and Health Science. C-ID NUTR 110, CSU, UC (credit limits may apply to UC - see counselor)

OCEANOGRAPHY – OCEAN

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

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. Students who have successfully completed OCEAN-102 should not enroll in OCEAN-101. Students who have successfully completed OCEAN-102 will not receive credit for OCEAN-101.

This course is an introduction to the geological, chemical, physical and biological aspects of the world’s oceans and interactions amongst these different aspects. Topics include: The history of oceanography; historic and modern oceanographic instruments; plate tectonics and marine geology; the marine-land interface; ecological problems of the local bay, estuary, delta and state wide water resources; oceans’ roles as a dominant influence on the earth, its climate, and the lives of its inhabitants; food, drug, and mineral energy resources from the sea; global and local ocean resource management, aquacultural techniques and practices, and preservation of marine environments; and the deep sea: properties, animals and adaptations. CSU, UC (credit limits may apply to UC - see counselor)
OCEAN-102 Fundamentals of Oceanography with Laboratory
4 units SC
- 54 hours lecture/54 hours laboratory per term
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: Students who have successfully completed OCEAN-101 should not enroll in OCEAN-102. Students who have successfully completed OCEAN-101 will not receive credit for OCEAN-102.
This course is an introduction to the geological, chemical, physical and biological aspects of the world’s oceans and interactions among them. Topics will include: the history of oceanography; historic and modern oceanographic instruments; plate tectonics and marine geology; the marine-land interface; ecological problems of the local bay, estuary, delta and state wide water resources; oceans’ roles as a dominant influence on the earth, its climate, and the lives of its inhabitants; food, drug, and mineral energy resources from the sea; global and local ocean resource management, aquacultural techniques and practices, and preservation of marine environments; and the deep sea: properties, animals and adaptations. In the laboratory, students will experience the role of the oceanographer as they prepare for, participate in, and analyze data collected on research trips to local bay environments. CSU, UC (credit limits may apply to UC - see counselor)

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
Toni Fannin, Interim 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 per term
- Note: This course is equivalent to two years of high school study.
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 per term
- Prerequisite: PERSN-120 or two years of high school study or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.
This is the second course in a sequence of Persian language courses. Topics will include understanding, speaking, reading and writing of the Persian language. The course will continue to expand vocabulary, communicative functions and structures and further examine the cultures of the Persian-speaking countries. 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
**Philosophy**

**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**

Toni Fannin, Interim 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, environmental ethics, law, politics and information technology. Most career options will require an advanced degree.

**Program-level student learning outcomes**

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at [www.dvc.edu/slo](http://www.dvc.edu/slo).

**Associate in arts degree**

**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.

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.

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.

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.

**major requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHILO-120</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-122</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-130*</td>
<td>Logic and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-224</td>
<td>History of Western Philosophy: Pre-Socratic to Medieval Period</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-225</td>
<td>History of Western Philosophy: Descartes to Present</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus at least 3 units from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHILO-140</td>
<td>Introduction to Judeo-Christian Tradition</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-141</td>
<td>Introduction to the Philosophy of Religion</td>
<td>3</td>
</tr>
<tr>
<td>PHILO-220</td>
<td>Comparative Religions</td>
<td>3</td>
</tr>
</tbody>
</table>

**total minimum required units** 18

*This course has a prerequisite of ENGL-122.*
Philosophy

Associate in arts in philosophy for transfer
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 literature.

The humanities and philosophy department views critical thinking and reflection about distinctively human issues to be central to human existence and well-being. Students who are able to think and articulate viewpoints clearly in an informed fashion not only enhance their own lives, but contribute significantly to interpersonal relationships and social existence, including in the realm of political, economic, cultural, and social institutions.

The associate in arts in philosophy 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. The associate in arts in philosophy for transfer is consistent with the mission of the community college to assist students in achieving a seamless transfer to the CSU system.

In order to earn the degree, students must:
• Complete 60 semester CSU-transferable units.
• Complete the California State University-General Education-Breadth pattern (CSU GE-Breadth); 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 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 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:
at least 3 units from:
PHILO-120 Introduction to Philosophy ......................... 3
PHILO-122 Introduction to Ethics ................................ 3

plus at least 3 units from:
PHILO-130* Logic and Critical Thinking ........................ 3
PHILO-170 Symbolic Logic ........................................ 3

plus at least 3 units from any course above not already used or:
PHILO-224 History of Western Philosophy: Pre-Socratic to Medieval Period ........................................... 3
PHILO-225 History of Western Philosophy: Descartes to Present ......................................................... 3

plus at least 6 units from any course above not already used or:
PHILO-141 Introduction to the Philosophy of Religion .......... 3

plus at least 3 units from any course above not already used or:
PHILO-220 Comparative Religions ............................... 3

18

*This course has a prerequisite of ENGL-122.

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.

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.

required courses:

PHILO-120 Introduction to Philosophy ......................... 3
PHILO-122 Introduction to Ethics ................................ 3
PHILO-130* Logic and Critical Thinking ........................ 3
PHILO-224 History of Western Philosophy: Pre-Socratic to Medieval Period ........................................... 3

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 uses of language, formal and informal fallacies, syllogistic argument forms and scientific method will be examined. Additional emphasis is placed on developing the ability to integrate the principles of critical thinking with the techniques of effective written argument. C-ID PHIL 110, 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 presents 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 reading 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, UC

**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, modal and deontic logic. C-ID PHIL 210, CSU, UC

**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. C-ID PHIL 130, 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. C-ID PHIL 140, 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 is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

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 inter-relationship 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 or equivalent
• Recommended: Eligibility for ENGL-122 or equivalent
This course is an overview of the physical sciences of astronomy, physics, chemistry and earth science. The principles studied will be used to explain current knowledge of the universe and our physical environment. CSU, UC (credit limits may apply to UC - see counselor)

PHYSC-298  Independent Study
.5-3 units  SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

PHOTOGRAPHY

See Art - ART
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-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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

A. solve problems in mechanics, including mechanical waves and fluids, using calculus.
B. solve problems in thermodynamics using calculus.
C. solve problems in electromagnetism using calculus.
D. solve problems in optics using calculus.
E. solve problems in special relativity using calculus.
F. solve problems in quantum physics, including its applications, using calculus and differential equations.

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 a 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>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-192</td>
<td>Analytic Geometry and Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-193</td>
<td>Analytic Geometry and Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-292</td>
<td>Analytic Geometry and Calculus III</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-130</td>
<td>Physics for Scientists and Engineers A: Mechanics and Wave Motion</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-230</td>
<td>Physics for Scientists and Engineers B: Heat and Electro-Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-231</td>
<td>Physics for Scientists and Engineers C: Optics and Modern Physics</td>
<td>4</td>
</tr>
</tbody>
</table>

total minimum required units 27

PHYS-110   Elementary Physics
3 units   LR
- 54 hours lecture per term
- Prerequisite: MATH-120 or MATH-120SP or equivalent
- Recommended: Concurrent enrollment in PHYS-111 and eligibility for ENGL-122 or equivalents
- Note: Students specifically interested in focusing on modern physics should take PHYS-113.

This course provides an overview of physics. Forces, motion, heat, electricity and magnetism, optics and modern physics will be discussed. This course emphasizes topics in classical physics. CSU, UC (credit limits may apply to UC - see counselor)

PHYS-111   Physics Laboratory
1 unit   LR
- 54 hours laboratory per term
- 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)
### PHYS-113  Elementary Modern Physics: From Atoms to the Big Bang
3 units  SC
- 54 hours lecture per term
- Prerequisite: MATH-120 or equivalent

This course is an introduction to the ideas of modern physics. Topics will include 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

### PHYS-120  General College Physics I
4 units  LR
- 54 hours lecture/72 hours laboratory per term
- Prerequisite: MATH-121 or equivalent
- Recommended: Eligibility for ENGL-122 or equivalent

This course is the first-term college physics for life science majors and others. It includes a lecture and laboratory study of mechanics, heat and sound. C-ID PHYS 105, CSU, UC (credit limits may apply to UC - see counselor)

### PHYS-121  General College Physics II
4 units  LR
- 54 hours lecture/72 hours laboratory per term
- Prerequisite: PHYS-120 or equivalent

This is a second term college physics course for life science majors and others. Within lecture and laboratory, the study of electricity, magnetism, light and modern physics will be covered. C-ID PHYS 110, CSU, UC (credit limits may apply to UC - see counselor)

### PHYS-124  Calculus Supplement for Physics 120
.5 unit  LR
- 9 hours lecture per term
- Prerequisite: PHYS-120 (may be taken concurrently) and MATH-182 or MATH-192 (may be taken concurrently) or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: The calculus component may be required for certain transfer majors

This course adds calculus to the mathematical techniques used in PHYS-120/General College Physics I. CSU, UC (credit limits may apply to UC - see counselor)

### PHYS-125  Calculus Supplement for Physics 121
.5 unit  LR
- 9 hours lecture per term
- Prerequisite: PHYS-121; and MATH-183 or MATH-193 (all may be taken concurrently) or equivalents
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: The calculus component may be required for certain transfer majors

This course adds calculus to the mathematical techniques used in PHYS-121/General College Physics II. CSU, UC (credit limits may apply to UC - see counselor)

### PHYS-129  Introductory Physics for Engineers
4 units  LR
- 54 hours lecture/72 hours laboratory per term
- Co-requisite: MATH-192 or equivalent (may be taken previously)
- Recommended: Eligibility for ENGL-122 or equivalent
- Note: For those students who have not recently completed a full year of high school physics, the physics department strongly recommends completion of PHYS-129 before enrolling in PHYS-130

This course is designed for engineering, physics and chemistry majors. The student will be introduced to basic vocabulary and techniques of studying physics. It presents a study of vectors, motion, forces, momentum, energy and rotating systems. One or more additional topics such as geometric optics, electricity, the atomic nature of matter or the study of fluids will be presented. CSU, UC (credit limits may apply to UC - see counselor)

### PHYS-130  Physics for Engineers and Scientists A: Mechanics and Wave Motion
4 units  LR
- 54 hours lecture/72 hours laboratory per term
- Co-requisite: MATH-193 (may be taken previously) or equivalent
- Recommended: PHYS-129 and eligibility for ENGL-122 or equivalents
- Note: For those students who have not recently completed a full year of high school physics, the completion of PHYS-129 is strongly recommended.

This course is designed for engineering and physical science majors (such as physics, chemistry, and geology). It presents 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)

### PHYS-150  Topics in Physics
.3-4 units  SC
- Variable hours

A supplemental course in physics to provide a study of current concepts and problems in physics. Specific topics will be announced in the schedule of classes. CSU
PHYS-230  Physics for Engineers and Scientists
B: Heat and Electro-Magnetism
4 units LR
• 54 hours lecture/72 hours laboratory per term
• Prerequisite: PHYS-130 or equivalent; MATH-292 (may be taken concurrently) or equivalent
• Recommended: Eligibility for ENGL-122 or equivalent
Designed for engineering and physical science majors (such as physics, chemistry, and geology), this course is a continuation of PHYS-130. It is a lecture and laboratory study of thermodynamics, electricity, and magnetism. Topics included are temperature, heat and the first and second laws of thermodynamics, kinetic theory of gases, electric field and electric potential of static charges, magnetic field of moving charges, current, voltage, resistance, capacitance, induced electric fields, Maxwell’s equations and plane electromagnetic waves. 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
• 54 hours lecture/72 hours laboratory per term
• Prerequisite: PHYS-230 or equivalent; MATH-294 (may be taken concurrently) or equivalent
• 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

Possible career opportunities
In collaboration with Plumbers and Steamfitters Union Local 159 email: info@plumbers159.org and Plumbers-Steamfitters-Refrigeration Union Local 342 www.ua342.org, DVC offers two five-year apprenticeship programs: steamfitting and plumbing. Apprenticeship is training that is designed to prepare an individual for a career in the skilled crafts and trades. Apprentices develop technical skills, experience the sharing of assignments and see how technical tasks relate specifically with theoretical knowledge and interpretation. Apprentices earn a wage while learning. Enrollment in this program is restricted. You must be registered as an apprentice with the State of California to participate in the program and accepted into the apprenticeship program by our Union partners.

Plumbers-Steamfitters-Refrigeration Union Local 342,
Joint Apprenticeship and Journeymen Training Office
935 Detroit Avenue
Concord, CA 94518-2501
925-686-0730
Plumbers and Steamfitters Local 159
1308 Roman Way
Martinez, CA 94553
800-443-0220 or 925-229-0883
email: info@plumbers159.org

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in science degree
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.
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

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.

required courses:

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLUMB-110 OSHA-CPR</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-111 Trade Mathematics</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-112 Water Supply Systems</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-113 Sewage Disposal</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-114 Plumbing System Service and Repair</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-115 Construction Management in Plumbing</td>
<td>1.5-3</td>
</tr>
<tr>
<td>PLUMB-116 Medical Gas Systems</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-117 Related Science in the Piping Trades</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-118 Beginning Drawing and Plan Reading for the Piping Trades</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-119 Advanced Drawing in the Piping Trades</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-120 Plumbing Tool Workshop I</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-121 Plumbing Tool Workshop II</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-122 Plumbing Code I</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-123 Plumbing Code II</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-124 Welding for Plumbers</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-125 Electricity for Plumbing</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-126 Gas Installation in Plumbing</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-127 Backflow Prevention</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-128 Plumbing Fixtures</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-129 Certification Preparation</td>
<td>1.5-2.5</td>
</tr>
</tbody>
</table>

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.

required courses:

<table>
<thead>
<tr>
<th>course</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLUMB-110 OSHA-CPR</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-111 Trade Mathematics</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-112 Water Supply Systems</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-113 Sewage Disposal</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-114 Plumbing System Service and Repair</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>PLUMB-115 Construction Management in Plumbing</td>
<td>1.5-3</td>
</tr>
<tr>
<td>PLUMB-116 Medical Gas Systems</td>
<td>1.5-2.5</td>
</tr>
</tbody>
</table>

| total minimum required units | 30 |

| total minimum required units | 28 |

| total minimum required units | 10 |
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.

This course covers the regulations governed by OSHA 30 that provide and recognize safe work practices. The student will receive certification in Cardio-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.

This course covers 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.

This course presents an introduction to the principles and methods of water distribution and treatment regarding water supply systems.

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 course introduces 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.

This course presents an introduction to the planning, troubleshooting and repair of plumbing systems.

PLUMB-115 Construction Management in Plumbing
1.5-3 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 course covers 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 course covers 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.

Students in this course will 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-130 Green Awareness
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 course provides an overview of “green” concepts as applied to mechanical systems and high-efficiency plumbing technologies that support water conservation.

PLUMB-131 Blueprint Reading 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.

This course introduces the interpretation of blueprints, specifications, and other construction documents for the plumbing industry.

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 is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment.

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

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

POlitical Science – Polsc
Obed Vazquez, Dean
Social Sciences Division
Faculty Office Building, Room 136

Possible career opportunities
Political science courses offer insight into events at the local, state, national, and international level. Students develop critical thinking and other useful skills for a broad range of careers including education, public service and law. Most career options require more than two years of college study.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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

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

B. describe 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.

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.

The associate in arts in political science 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.
Political science

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 a 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 Name</th>
<th>Units</th>
</tr>
</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>
</tr>
<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>
</tr>
<tr>
<td>+ at least 6 units from any course not used above or:</td>
<td></td>
<td></td>
</tr>
<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-120 Introduction to Politics
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course presents an introduction to key concepts of politics, the state, and relations between the state and individual as applied to the United States political system. Comparison of the United States system with other political systems will also be discussed. C-ID POLS 150, CSU, UC

POLSC-121 Introduction to United States Government
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
The course presents a survey of the American political framework and process. Students will examine the structure of the U.S. Constitution 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. C-ID POLS 110, CSU, UC

POLSC-127 Introduction to Law and Democracy
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course is an introduction to legal concepts in American democracy and contemporary issues: Theories of historical social injustice and movements; examination of law, social justice, democracy, government, civil rights, civil liberties, and citizenship. CSU, UC

POLSC-151 California Politics
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course provides 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
This course presents a comparative analysis of the political systems of selected foreign states. The origins and nature of politics, philosophies, and cultures and their expression in political institutions and processes are investigated. C-ID POLS 130, 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. C-ID POLS 120, 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 economies, the United Nations and other international organizations and contemporary world problems. C-ID POLS 140, CSU, UC

POLSC-252 Model United Nations
3 units LR
• 36 hours lecture/54 hours laboratory per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course introduces students to the theory and practice of international diplomacy and intergovernmental organizations (IGOs.) Focus is placed on history, structures and functions of the United Nations (UN), international bargaining and diplomacy, conflict resolution, and parliamentary procedures. Model UN will examine United States foreign and domestic policies related to the UN. Students will organize meetings modeled after the UN General Assembly, the Security Council and other organs of the UN as well as its specialized agencies and major IGOs. 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 courses sections in which they are currently enrolled. CSU

PORT-120 First Term Portuguese
5 units SC
• 90 hours lecture per term
• Note: This course is equivalent to two years of high school study.
This is a basic course in understanding, speaking, reading, and writing Portuguese. 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 Portuguese-speaking world. CSU, UC

PORT-121 Second Term Portuguese
5 units SC
• 90 hours lecture per term
• Prerequisite: PORT-120 or two years of high school study or equivalent
• Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.
This is the second term Portuguese language course. It addresses the understanding, speaking, reading and writing of the Portuguese language. The course is a continued study of basic communicative structures with an introduction to communicative functions. Students will learn the preterit and imperfect tenses, compound tenses in the indicative mode, future and conditional tenses, and present subjunctive, as well as expand their vocabulary. The course includes a continued examination of the culture of the Portuguese-speaking countries. CSU, UC
Possible career opportunities
Psychology students will find classes related to helping them understand, predict, and deal with their own behavior and that of others. Careers include psychotherapist, school psychologist, college professor, researcher, counselor and administrator. Most career options require more than two years of college study.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.
G. correctly apply statistical concepts to organize and understand data from psychological research.
H. demonstrate an understanding of biological processes underlying behavior and experience.

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.

The associate in arts in psychology 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 a 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>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYCH-101</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-215</td>
<td>Introduction to Research Methods in Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

complete at least 3 units from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course 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>
</tr>
</tbody>
</table>
complete at least 3 units from:
PSYCH-145 Critical Thinking in Psychology .................. 3
PSYCH-200 Life Span Development .................................. 3
PSYCH-225 Social Psychology ........................................ 3

complete at least 3 units from:
PSYCH-122 Psychology in Modern Life .................. 3
PSYCH-140 Psychology of African-Americans in a Multicultural Society .................. 3
PSYCH-141 Psychology of Latinos/Chicanos in the U.S. ....... 3
PSYCH-160 Psychology of Women .................................. 3
PSYCH-190 Psychology of Adolescence .................. 3
PSYCH-220 Psychology of Personality: Personal, Social, Cultural Differences .................. 3
PSYCH-230 Abnormal Psychology .................................. 3
PSYCH-240 Transpersonal Psychology .................. 3
total minimum units 18

PSYCH-101 Introduction to Psychology
3 units SC
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
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, 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
This course is an examination of various factors in the development of gender identity, including personality, social processes, biology, and culture. Topics include interpersonal relations, communication styles, and psychological similarities and differences between males and females. CSU, UC

PSYCH-190 Psychology of Adolescence
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course presents a survey of adolescent development and the psychological challenges faced by adolescents. Topics include adolescent values and attitudes; adolescent self-concept, self-esteem, and identity; adolescent sex-role socialization; parent and family influence on adolescent socialization; and 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 socio-cultural 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
- Prerequisites: 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 course examines the scientific method, operationalization of variables, inductive and deductive reasoning, experimental and non-experimental designs (including descriptive methods), experimental instrumentation, group and single-subject designs, and research ethics. Research in a variety of subfields within psychology will be utilized to demonstrate research design and the collection, analysis, interpretation, and reporting of research data. Students will perform a literature review, design an original research study, and prepare research reports using American Psychological Association (APA) style report writing. C-ID PSY 200, CSU, UC

PSYCH-220 Psychology of Personality: Personal, Social, Cultural Differences
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course examines the dynamics of personality development, adjustment, and growth. Particular emphasis is placed on contrasting the ideas and methodologies of various 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-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

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 practitioners (RCP) and the registered respiratory therapist (RT) 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: **

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSC-119</td>
<td>Fundamentals of Microbiology</td>
<td>4</td>
</tr>
<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>ENGL-122</td>
<td>Freshman English: Composition and Reading</td>
<td>3</td>
</tr>
<tr>
<td>MATH-120</td>
<td>Intermediate Algebra (or any higher level math course)</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-110</td>
<td>Elementary Physics</td>
<td>3</td>
</tr>
</tbody>
</table>
Respiratory therapy

plus at least 4 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-108</td>
<td>Introductory Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-120</td>
<td>General College Chemistry I</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total minimum units of program prerequisites** 30

**Supporting course:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYCH-200</td>
<td>Life Span Development</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total units of supporting course** 3

**Prerequisites and support course may be “in progress” at the time of application. These courses must be completed no later than the end of the spring term during the year of application.**

**Recommended course before entering the program:**

One of:

- COMM-120 Public Speaking ........................................ 3
- COMM-128 Interpersonal Communication ....................... 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.

In addition to the courses above, students must complete general education:

**Ohlone**

- Area III, Fine Arts/Humanities 3 units required
- Area V, Physical Education/Wellness 1 unit required
- Area VI, Cultural diversity One course from: ADS-155; ADJUS-130; ANTHR-120,135; COMM-125; CULN-228; DRAMA-142; ECE-144; ENGL-162, 163, 164, 166, 167, 168, 170, 173, 177, 190, 225, 262; FTVE-210, 260; GEOG-135; HIST-124, 125, 126, 127, 128, 129, 135, 136, 150, 151, 161, 170, 171; HUMAN-115, 116; MUSIC-112, 114, 115, 116; PHILO-220; PSYCH-140, 141, 160, 220; SOCIO-124, 125, 131, 135; SOCSC-120, 220
- Area VII, Information competency LS-121 required

**DVC**

- Area III, Arts and Humanities KNACT and KNDAN, 1 unit or HSCI-124, 126, 140, 164, 170
RUSSIAN – RUSS

Toni Fannin, Interim Dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

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

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

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. Students may not take a credit/no credit option for required courses and each course must be completed with a “C” grade or higher.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUSS-120</td>
<td>First Term Russian</td>
<td>5</td>
<td>90 hours lecture per term. Prerequisite: RUSS-120 or two years of high school study. Note: This course is equivalent to two years of high school study.</td>
</tr>
<tr>
<td>RUSS-121</td>
<td>Second Term Russian</td>
<td>5</td>
<td>Prerequisite: RUSS-120. Note: This course is equivalent to two years of high school study.</td>
</tr>
<tr>
<td>RUSS-150</td>
<td>Topics in Russian</td>
<td>.3-4</td>
<td>Variable hours. Prerequisite: RUSS-121 or three years of high school study. Note: This course is equivalent to two years of high school study.</td>
</tr>
<tr>
<td>RUSS-220</td>
<td>Third Term Russian</td>
<td>5</td>
<td>Prerequisite: RUSS-121 or three years of high school study. Note: This course is equivalent to two years of high school study.</td>
</tr>
</tbody>
</table>

total minimum required units 15
RUSS-221  Fourth Term Russian  
5 units SC  
- 90 hours lecture per term  
- Prerequisite: RUSS-220 or four years of high school study or equivalent  
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

This is a fourth semester course which refines understanding, speaking, reading, and writing Russian and a continuation of the study of Russian literature and history. The course expands on the study and interpretation of Russian and Soviet culture, with emphasis on current events. Verbs which express requests or questions, declensions of last names and additional uses of the instrumental case will be covered. CSU, UC

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

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

SIGN LANGUAGE – SIGN

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.

SIGN-281  American Sign Language (ASL) II  
3 units SC  
- 54 hours lecture per term  
- Prerequisite: SIGN-280 or equivalent

This course builds on basic principles and vocabulary introduced in SIGN-280. Students will further develop skills including expressive and receptive sign, the manual alphabet, facial expression, and body gestures. An emphasis will be placed on conversational skills in functional situations, continued vocabulary and grammatical expression development, and the knowledge of deaf culture and community. CSU, UC

SIGN-282  American Sign Language (ASL) III  
3 units SC  
- 54 hours lecture per term  
- Prerequisite: SIGN-281 or equivalent

This course expands vocabulary and grammatical skills, both receptive and expressive, using ASL I and II as a base. Students will further develop conversational skills in functional situations, and lead to an appreciation of the deaf culture and history. CSU, UC

SIGN-283  American Sign Language (ASL) IV  
3 units SC  
- 54 hours lecture per term  
- Prerequisite: SIGN-282 or equivalent

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

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

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

SIGN-280  American Sign Language (ASL) I  
3 units SC  
- 54 hours lecture per term  
- Recommended: Eligibility for ENGL-122 or equivalent

The course provides an introduction to American Sign Language including expressive and receptive sign, the manual alphabet, facial expression, and body gestures with emphasis is on conversational skills in functional situations. CSU, UC
SOCIAL SCIENCE – SOCSC

Obed Vazquez, Dean
Social Sciences Division
Faculty Office Building, Room 136

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
• 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
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is 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. The United State Constitution and state and local government in California will be emphasized. 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
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course presents an overview of the history of U.S. women from the Progressive Era (1890) to the present, emphasizing the commonalities of women's experiences. It examines 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. Topics of emphasis will include political, economic and cultural change in the U.S., change fostered by women, and the transformed roles of women in the family within the continuity of the United States experience. Students will analyze 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. CSU, UC

SOCSC-123 American Popular Culture
3 units
• 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

SOCSC-155 Topics in Social Science
.3-.4 units
• 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-220 Women in United States Society
3 units
• 54 hours lecture per term
• Recommended: Eligibility for ENGL-122 or equivalent
This course is a multicultural and interdisciplinary examination of women's changing roles in U.S. society. The social institutions and values that shape those roles, including federal, state, and local governments, as well as the U.S. and California Constitutions will be explored. Significant events and developments that shape the social, political, and economic status of women, as well as the importance of race/ethnicity, class, region, and sexual orientation in differentiating the experiences and opportunities for women will also be presented. CSU, UC
SOCSC-298 Independent Study
.5-3 units SC
• Variable hours
• Note: Submission of acceptable educational contract to department and Instruction Office is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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

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.

The associate in arts in sociology 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.
Sociology

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.

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 each 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: units
SOCIO-120 Introduction to Sociology 3

plus at least 6 units from:
BUS-240 Business Statistics with Probability 3
MATH-142 Elementary Statistics with Probability 4
SOCIO-121 Introduction to Social Problems 3
SOCIO-123 Introduction to Social Research 3

plus at least 6 units from any course not used above, or:
PSYCH-225 Social Psychology 3
SOCIO-122 Critical Thinking About Social and Cultural Issues 3
SOCIO-124 Gender, Culture and Society 3
SOCIO-125 Introduction to Marriage and Family 3
SOCIO-135 Introduction to Race and Ethnicity 3

plus at least 3 units from any course not used above, or:
SOCIO-131 The Urban Community 3
SOCSC-120 Women and Social Change in the United States, 1890-Present 3

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 actions, 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: SOCI-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
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 is required.
This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

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

SPANISH – SPAN
Toni Fannin, Interim Dean
Applied and Fine Arts Division
Business and Foreign Language Building, Room 204

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

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.
**Associate in arts degree**

**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.

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>
<td>5</td>
</tr>
<tr>
<td>SPAN-220</td>
<td>Third Term Spanish</td>
<td>5</td>
</tr>
<tr>
<td>SPAN-221</td>
<td>Fourth Term Spanish</td>
<td>5</td>
</tr>
<tr>
<td>SPAN-230</td>
<td>Fifth Term Spanish</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-231</td>
<td>Sixth Term Spanish</td>
<td>3</td>
</tr>
<tr>
<td><strong>total minimum required units</strong></td>
<td></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

**Associate in arts in Spanish for transfer**

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.

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.

The associate in arts in Spanish 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-Breadth pattern (CSU GE-Breadth); 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 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 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>
<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>
<td>5</td>
</tr>
<tr>
<td>SPAN-220</td>
<td>Third Term Spanish</td>
<td>5</td>
</tr>
<tr>
<td>SPAN-221</td>
<td>Fourth Term Spanish</td>
<td>5</td>
</tr>
<tr>
<td>SPAN-230</td>
<td>Fifth Term Spanish</td>
<td>3</td>
</tr>
<tr>
<td><strong>total minimum required units</strong></td>
<td></td>
<td><strong>23</strong></td>
</tr>
</tbody>
</table>

**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.
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. Students may not take a credit/no credit option for required courses and each course must be completed with a "C" grade or higher.

<table>
<thead>
<tr>
<th>List A</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN-120</td>
<td>First Term Spanish</td>
</tr>
<tr>
<td>SPAN-121</td>
<td>Second Term Spanish</td>
</tr>
<tr>
<td>SPAN-220</td>
<td>Third Term Spanish</td>
</tr>
<tr>
<td>SPAN-221</td>
<td>Fourth Term Spanish</td>
</tr>
<tr>
<td>SPAN-230</td>
<td>Fifth Term Spanish</td>
</tr>
<tr>
<td>SPAN-231</td>
<td>Sixth Term Spanish</td>
</tr>
</tbody>
</table>

List B

<table>
<thead>
<tr>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN-121</td>
</tr>
<tr>
<td>SPAN-155</td>
</tr>
<tr>
<td>SPAN-156</td>
</tr>
<tr>
<td>SPAN-157</td>
</tr>
<tr>
<td>SPAN-220</td>
</tr>
<tr>
<td>SPAN-221</td>
</tr>
</tbody>
</table>

Total minimum required units: 13

**SPAN-120** Second Term Spanish

<table>
<thead>
<tr>
<th>units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

90 hours lecture per term

• Prerequisite: SPAN-120 or two years of high school study or equivalent
• Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

This is the second course in a sequence of Spanish language courses. It addresses the understanding, speaking, reading and writing of the Spanish language. The course continues to expand vocabulary, communicative functions and structures. The course will continue the examination of the culture of the Spanish-speaking world. C-ID SPAN 110, CSU, UC

**SPAN-150** Topics in Spanish

<table>
<thead>
<tr>
<th>units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-4</td>
<td></td>
</tr>
</tbody>
</table>

• 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

<table>
<thead>
<tr>
<th>units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

54 hours lecture per term

• Note: This course does not satisfy major or general education requirements.

This is the first term of the conversational Spanish series. Basic grammar and vocabulary as well as an introduction to Spanish culture will be covered. CSU

**SPAN-156** Second Term Beginning Conversational Spanish

<table>
<thead>
<tr>
<th>units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

54 hours lecture 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

<table>
<thead>
<tr>
<th>units</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

54 hours lecture 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 per term
- Prerequisite: SPAN-121 or three years of high school study or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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. C-ID SPAN 200, CSU, UC

SPAN-221  Fourth Term Spanish
5 units  SC
- 90 hours lecture per term
- Prerequisite: SPAN-220 or four years of high school study or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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. C-ID SPAN 210, CSU, UC

SPAN-230  Fifth Term Spanish
3 units  SC
- 54 hours lecture per term
- Prerequisite: SPAN-221 or equivalent
- Note: Students may meet equivalency in a variety of ways. Students should seek assistance at Admissions and Records.

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. This course is taught entirely in Spanish. 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 is required.

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. 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

Emily Stone, Dean
Student Support Services
Student Services Center, SSC-122

Possible career opportunities
Students who earn a special education paraeducator/instructional assistant certificate of achievement or degree are prepared for entry-level employment assisting students and individuals with disabilities in education and rehabilitation settings.

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Associate in arts degree
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.
Special education

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.

**major requirements:**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE-124</td>
<td>Child Development and Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-122</td>
<td>Psychology in Modern Life</td>
<td>3</td>
</tr>
<tr>
<td>SPEDU-101</td>
<td>Introduction to Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>SPEDU-102</td>
<td>Historical Perspectives of Disabilities and the Law</td>
<td>3</td>
</tr>
<tr>
<td>SPEDU-103</td>
<td>Classroom Strategies for the Special Education Paraeducator</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus 2-4 units from:**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEDU-295</td>
<td>Occupational Work Experience in SPEDU</td>
<td>1-4</td>
</tr>
<tr>
<td>SPEDU-296</td>
<td>Internship in Occupational Work Experience Education in SPEDU</td>
<td>1-4</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>COMM-128</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>ECE-123</td>
<td>Introduction to Curriculum in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-125</td>
<td>Principles and Practices of Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-126</td>
<td>Health, Safety, and Nutrition for the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ECE-269</td>
<td>Children with Special Needs</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-120</td>
<td>Introduction to Teaching in Elementary Schools</td>
<td>3</td>
</tr>
<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>
</tbody>
</table>

**total minimum required units** 23

**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. demonstrate and understanding of how culture affects relationships among children, families, and schooling.

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 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 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 code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE-124</td>
<td>Child Development and Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-122</td>
<td>Psychology in Modern Life</td>
<td>3</td>
</tr>
<tr>
<td>SPEDU-101</td>
<td>Introduction to Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>SPEDU-102</td>
<td>Historical Perspectives of Disabilities and the Law</td>
<td>3</td>
</tr>
<tr>
<td>SPEDU-103</td>
<td>Classroom Strategies for the Special Education Paraeducator</td>
<td>3</td>
</tr>
</tbody>
</table>

**plus 2-4 units from:**

<table>
<thead>
<tr>
<th>course code</th>
<th>course title</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEDU-295</td>
<td>Occupational Work Experience in SPEDU</td>
<td>1-4</td>
</tr>
<tr>
<td>SPEDU-296</td>
<td>Internship in Occupational Work Experience Education in SPEDU</td>
<td>1-4</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>COMM-128</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>ECE-123</td>
<td>Introduction to Curriculum in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-125</td>
<td>Principles and Practices of Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE-126</td>
<td>Health, Safety, and Nutrition for the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ECE-269</td>
<td>Children with Special Needs</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-120</td>
<td>Introduction to Teaching in Elementary Schools</td>
<td>3</td>
</tr>
<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>
</tbody>
</table>

**total minimum required units** 23
SPEDU-101 Introduction to Disabilities
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course examines the historical and cultural context of disability issues and integrates international perspectives on the changing roles of people with disabilities. The legal and functional definitions of physical, communicative, sensory, psychological, neurological, and developmental disabilities will be covered. Acquired versus congenital disabilities will be differentiated, and all forms of chronic/progressive illnesses will be explored. CSU

SPEDU-102 Historical Perspectives of Disabilities and the Law
3 units SC
- 54 hours lecture per term
- Recommended: Eligibility for ENGL-122 or equivalent
This course will examine the legal rights of the disabled, beginning with historical roots of the disability movement in the United States. Essential understanding of the earliest to current legislation governing access to education in federal, state, and local legal mandates will be emphasized. CSU

SPEDU-103 Classroom Strategies for the Special Education Paraeducator
3 units SC
- 54 hours lecture per term
- Required: Eligibility for ENGL-122 or equivalent
This course explores the basic principles of pragmatic pro-social skills strategies used by the special education para-professional within the educational workplace. Students will learn effective communication techniques to facilitate and manage appropriate student behavior and learning. CSU

SPEDU-295 Occupational Work Experience Education in SPEDU
1-4 units SC
- May be repeated three times
- Variable hours
- Note: In order to enroll in SPEDU-295, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
SPEDU-295 is supervised employment that extends classroom learning to the job site and relates to the students 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

SPEDU-296 Internship in Occupational Work Experience Education in SPEDU
1-4 units SC
- May be repeated three times
- Variable hours
- Note: In order to enroll in the SPEDU-296 course, students must be interning or volunteering, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
SPEDU-296 is a supervised internship in a skilled or professional level assignment in the students 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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

SPORTS MEDICINE/ATHLETIC TRAINING
See Kinesiology theory - KINES

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

Possible career opportunities
In collaboration with Plumbers and Steamfitters Union Local 159 email: info@plumbers159.org and Plumbers-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

DIABLO VALLEY COLLEGE CATALOG 2017-2018 chapter four PROGRAM/COURSE DESCRIPTIONS 365
Steamfitting

Plumbers and Steamfitters Local 159
1308 Roman Way
Martinez, CA 94553
800-443-0220 or
925-229-0883
email: info@plumbers159.org

Program-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

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.

This program is offered in collaboration with Plumbers and Steamfitters Union Local 159 and Plumbers, Steamfitters, Refrigeration (HVACR) Union Local 342. Apprenticeship is training that is designed to prepare an individual for a career in the skilled crafts and trades. Apprentices develop technical skills, experience the sharing of assignments and see how technical tasks relate specifically with theoretical knowledge and interpretation. Apprentices earn a wage while learning. Enrollment in this program is restricted. You must be registered as an apprentice with the State of California to participate in the program and accepted into the apprenticeship program by our union partners.

This program prepares students to become steamfitters and includes an introduction to the installation, maintenance, and repair of different types of pipe systems; tool use; material applications and storage; and safety. Upon completion of the program, students will be able to install pipe systems that move liquids or gases under high pressure and use many different materials and construction techniques, depending on the type of project. They will be able to follow building plans or blueprints and instructions from supervisors to lay out the job and work efficiently with the materials and tools of the trade.

To earn an associate in science degree with a major in steamfitting, students must complete 20 out of 31 core courses to meet their individual educational and career goals. In addition they must complete General Education Option 1 (DVC General Education). Students must complete each course used to meet a major requirement with a “C” grade or higher and maintain an overall GPA of 2.5 or higher in the coursework required for the major. The associate in science degree with a major in steamfitting is not a transfer program.

DVC steamfitting students who intend to transfer must consult with a program advisor or counselor to ensure that the requirements for transfer to baccalaureate institutions of their choice are met.

complete at least 30 units from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>STMFT-110</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-111</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-112</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-113</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-114</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-115</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-116</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-117</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-118</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-119</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-120</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-121</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-122</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-123</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-124</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-125</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-126</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-127</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-128</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-131</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>STMFT-132</td>
<td>1.5-3.5</td>
</tr>
<tr>
<td>STMFT-133</td>
<td>1.5-3.5</td>
</tr>
<tr>
<td>STMFT-134</td>
<td>1.5-3.5</td>
</tr>
<tr>
<td>STMFT-135</td>
<td>1.5-3.5</td>
</tr>
<tr>
<td>STMFT-136</td>
<td>1.5-3.5</td>
</tr>
<tr>
<td>STMFT-137</td>
<td>1.5-3.5</td>
</tr>
<tr>
<td>STMFT-138</td>
<td>1.5-3.5</td>
</tr>
<tr>
<td>STMFT-140</td>
<td>1.5-2.5</td>
</tr>
</tbody>
</table>

total minimum required units 30-50

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.
This program is offered in collaboration with Plumbers and Steamfitters Union Local 159 and Plumbers-Steampfiters-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.

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.

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.

This program is offered in collaboration with Plumbers and Steamfitters Union Local 159 and Plumbers-Steampfiters-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.

Certificate of achievement
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.

This program is offered in collaboration with Plumbers and Steamfitters Union Local 159 and Plumbers-Steampfiters-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.

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.
Steamfitting

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.

This course covers the regulations governed by OSHA 30 that provide and recognize safe work practices. The student will receive 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.

This course covers 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.

This course presents an introduction to the identification of tools encountered in the industrial environment and 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.

This course presents an introduction to welding safety and theory. Student will also be introduced to plate arc welding.

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.

This course presents an introduction to oxygen and acetylene cutting and safety. The processes on how to cut for various plate thicknesses and layouts will also be discussed and practiced.

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 apprentices 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.

This course covers 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.

This course covers 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.

In this course students will Interpret, coordinate and make drawings and sketches associated with piping installation.

STMFT-120 Instrumentation 1
1.5-2.5 units LR
- Variable hours
- Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.

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.
Steamfitting

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. Student 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. Student 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. Student 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 5
1.5-3.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.

This course is an introduction to the techniques and methods for welding processes for the steamfitting apprentice. Students will learn how to identify various welding rods, electrodes, and their applications.

STMFT-133  Welding 6
1.5-3.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.

This course is an introduction to the techniques and methods for welding processes for the steamfitting apprentice. Techniques studied will include string beads on an open grooved pipe weld and proper torch positioning for advanced torch cutting.

STMFT-134  Welding 7
1.5-3.5 units  LR
• Variable hours
• Note: This program is sponsored by the International Brotherhood of Steamfitters and Plumbers and is for apprenticeship only. Course enrollment is limited to those who have been accepted by the local union responsible for the section.

This course is an introduction to the techniques and methods for welding processes for the steamfitting apprentice. The topics will include proper handling of grinders, weld coupons, 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.

This course is an introduction to the techniques and methods for welding processes for the steamfitting apprentice. Techniques studied will include single vee groove welding 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.

This course introduces the techniques and methods for welding processes for steamfitting apprentices. Topics 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.

This course is an introduction to the techniques and methods for welding processes for the steamfitting apprentice. The topics will include identification of materials, butt-weld root and filler beads, and tools needed for stainless steel welding processes.

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-level student learning outcomes
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

Certificate of achievement
CSU general education breadth

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.
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.)

**Transfer studies**

**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)

**Transfer studies**

**Program-level student learning outcomes**
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

**Certificate of achievement**
Intersegmental General Education Transfer Curriculum (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 techniques 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).

**Transfer studies**

**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)

**Transfer studies**

**Program-level student learning outcomes**
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

**Certificate of achievement**
Intersegmental General Education Transfer Curriculum (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 techniques 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).

**Transfer studies**

**Program-level student learning outcomes**
Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at www.dvc.edu/slo.

**Certificate of achievement**
Intersegmental General Education Transfer Curriculum (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 techniques 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).
WRKX-160  General Work Experience Education
1-3 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in a WRKX course, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Students may earn one unit for five hours work per week or seventy-five hours work per term. Does not meet requirements for veterans’ benefits. Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for WRKX. Students may repeat to a maximum of twelve units; an appeal will be required after three repetitions.
• Formerly COOP-160

WRKX-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

WRKX-170  Occupational Work Experience Education
1-4 units  SC
• May be repeated three times
• Variable hours
• Note: In order to enroll in a WRKX-170, students must be employed, register for the course, complete an online Employment Form, and participate in an orientation. Employment forms can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
• Formerly COOP-170

WRKX-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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

WRKX-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 WRKX-180 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at www.dvc.edu/wrkx. Incomplete grades are not awarded for this course.
• Formerly COOP-180

WRKX-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. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU