Information in this catalog is subject to change as a result of new or revised curricula, laws, policies or regulations.

The information in this Sierra College publication is provided as a service to students. This catalog (text, graphics, and/or images) is protected by copyright and may not be modified, reused, reposted, distributed, downloaded, or otherwise used, in whole or in part, except as provided herein, without the express written permission of Sierra College. You may download content, or print copies of the information, only for your own personal, noncommercial use. All other rights are reserved.

© 2013 Sierra College
5000 Rocklin Road, Rocklin, CA 95677
(916) 624-3333
WELCOME

A Sierra College Publication

Information in this catalog is subject to change as a result of new or revised curricula, laws, policies or regulations. Contact the Office of Instruction for catalog revisions, (916) 660-7503.

The information in this Sierra College publication is provided as a service to students. This catalog (text, graphics, and/or images) is protected by copyright and may not be modified, reused, reposted, distributed, downloaded, or otherwise used, in whole or in part, except as provided herein, without the express written permission of Sierra College. You may download content, or print copies of the information, only for your own personal, noncommercial use. All other rights are reserved.

This catalog may be purchased from Sierra College Bookstores. Please call (916) 660-8200 for further information.

© 2013 Sierra College

COVER PHOTOGRAPHY BY DARYL STINCHFIELD

www.sierracollege.edu
Mission Statement
Sierra College provides a challenging and supportive learning environment for students having diverse goals, abilities and needs interested in transfer, career and technical training, and lifelong learning. The College’s programs and services encourage students to identify and to expand their potential. Sierra College students will develop the knowledge, skills and abilities to become engaged and contributing members of the community.

Vision Statement
We will challenge ourselves and our community to become fulfilled citizens in a global environment by contributing to and engaging in the thoughtful application of knowledge guided by respect for others and the world in which we live.

Core Values
The following core values will establish our ethical principles and will guide our institutional decision-making. Sierra College will:
1. Support and model excellence in teaching, learning, scholarship, and creativity.
2. Provide the tools for continuing success in an ever-changing world.
3. Provide, and demonstrate the value of, an inclusive community.
4. Demonstrate collaboration in decision making.
5. Foster active citizenship in our community, our nation, and our world.
6. Create and nurture meaningful connections to our community.
7. Recognize that students are active participants in their education.
8. Support and demonstrate the sustainable use of all resources.
Student Learning Outcomes
Student learning outcomes state the expected knowledge, skills, and abilities students possess as a result of utilizing services and completing a course, a certification or a degree. At Sierra College, instructional programs define student learning outcomes for their content areas and link them to courses, certificates and degrees. Student learning outcomes for individual programs may be found on the Sierra College website. The general education sequence supports students' attainment of the college's institutional outcomes, as do the student learning outcomes for student services. These outcomes align with our district mission, support our vision, and reflect our core values.

Institutional Outcomes
Students attend Sierra College for a variety of reasons. Based on their own educational goals and experiences, students will develop skills in the following areas:

Communication
1. Read—Use active reading skills to comprehend and interpret information and ideas from a variety of texts, including academic prose (such as textbooks, literature, primary and secondary sources, and scholarly journals), technical documentation (such as manuals, charts, graphs, and reports), and media sources (such as newspapers, magazines, websites and online databases).
2. Write—Communicate thoughts, ideas, and information effectively in writing in a variety of modes and for a variety of purposes. Accurately and persuasively convey information and ideas using logic, reasoning, and effective rhetorical strategies. Use correct grammar, spelling, punctuation, diction, style, and format.
3. Listen—Demonstrate active listening skills in classroom, community, personal, and professional situations. Interpret and respond appropriately to verbal and nonverbal communication in a variety of contexts.
4. Dialogue—Interact in a variety of dynamic situations by assessing the needs of the audience, creating a message, adapting to audience feedback, and responding appropriately. Through dialogue, build mutual understanding with individuals from various backgrounds.

Technology and Information Competency
1. Demonstrate Technical Literacy—Efficiently and accurately use current computer and other relevant technologies to acquire, process, and present information. Organize and maintain records.
2. Apply Technology—Use computer applications and other technologies in the learning process, real-world scenarios, and the workplace. Organize and maintain records.
3. Access Information—Recognize the need for information; choose and narrow topic. Formulate search questions. Gather, organize, and discriminate among various sources of information.
4. Evaluate and Examine Information—Filter information for relevance and accuracy. Apply criteria to determine credibility. Utilize data gathered to draw conclusions. Construct meaning from expanding and conflicting information. Credit sources according to academic standards.

Critical and Creative Thinking
1. Inquire—Identify and understand questions or problems across disciplines and in practical applications. Develop hypotheses.
2. Analyze—Investigate and assess the validity or relevance of arguments, claims, or contentions supported by data, observation, experience, testing or analysis. Distinguish fact from opinion. Develop an interpretation with an awareness of different views and reasoning.
3. Problem Solve—Use sound reasoning to specify solutions and consequences. Test hypotheses using methods appropriate to the problem (such as the scientific method, mathematical reasoning, and principles of logic).
4. Express—Acquire an appreciation and involvement in the creation or performance of works of fine art, craft, music, drama, and/or culture. Participate in games, sports, dance, and outdoor pursuits based on individual interests and capabilities.

Citizenship
1. Ethics—Develop and apply ethical reasoning and decision making skills in academics, in the workplace, and in global and local communities. Value honesty, civility, empathy, interpersonal competence, social responsibility, and peaceful conflict resolution.
2. Diversity—Recognize, understand, and respect diversity of belief, culture, value, ability, gender, race, age, and sexual orientation.
3. Sustainability/Global Awareness—Develop values and behaviors that respect the natural environment. Evaluate social justice issues and identify social responsibilities to elicit social change. Recognize the ethical implications of political, social, and economic institutions.
4. Personal Responsibility—Accept personal responsibility by recognizing oneself as the principal cause for opportunities and experiences. Effectively develop, apply and manage a healthy physical lifestyle and emotional well-being; self-motivate through planning and acting to accomplish goals. Recognize the value of life-long learning.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester 2013</strong></td>
<td></td>
</tr>
<tr>
<td>Aug. 12</td>
<td>Last Day to Apply for Fall 2013</td>
</tr>
<tr>
<td>Aug. 26</td>
<td>INSTRUCTION BEGINS</td>
</tr>
<tr>
<td>Aug. 31–Sept. 2</td>
<td>Holiday (Labor Day)</td>
</tr>
<tr>
<td>Sept. 8</td>
<td>Last Day to Add Full-Semester Class</td>
</tr>
<tr>
<td></td>
<td>Last Day to Drop from Full-Semester Class without Receiving a “W”</td>
</tr>
<tr>
<td></td>
<td>Last Day to Drop from Full-Semester Class and Receive a Refund</td>
</tr>
<tr>
<td>Sept. 9</td>
<td>Census Date</td>
</tr>
<tr>
<td>Sept. 20</td>
<td>Deadline to Initiate Credit By Examination (Challenge)</td>
</tr>
<tr>
<td>Sept. 27</td>
<td>Last Day to Request Pass/No Pass Grading for Full-Semester Class</td>
</tr>
<tr>
<td>Oct. 1</td>
<td>Last Day to Request December 2013 Degree or Certificate</td>
</tr>
<tr>
<td>Nov. 5</td>
<td>Last Day to Withdraw from Full-Semester Class and Receive a “W”</td>
</tr>
<tr>
<td>Nov. 11</td>
<td>Holiday (Veterans Day)</td>
</tr>
<tr>
<td>Nov. 28–30</td>
<td>Holiday (Thanksgiving)</td>
</tr>
<tr>
<td>Dec. 14</td>
<td>Semester Ends</td>
</tr>
<tr>
<td>Dec. 24–Jan. 1</td>
<td>Campus Closed</td>
</tr>
<tr>
<td><strong>Spring Semester 2014</strong></td>
<td></td>
</tr>
<tr>
<td>Jan. 5</td>
<td>Last Day to Apply for Spring 2014</td>
</tr>
<tr>
<td>Jan. 20</td>
<td>Holiday (Dr. Martin Luther King, Jr. Day)</td>
</tr>
<tr>
<td>Jan. 27</td>
<td>INSTRUCTION BEGINS</td>
</tr>
<tr>
<td>Feb. 9</td>
<td>Last Day to Add Full-Semester Class</td>
</tr>
<tr>
<td></td>
<td>Last Day to Drop from Full-Semester Class without Receiving a “W”</td>
</tr>
<tr>
<td></td>
<td>Last Day to Drop from Full-Semester Class and Receive a Refund</td>
</tr>
<tr>
<td>Feb. 10</td>
<td>Census Date</td>
</tr>
<tr>
<td>Feb. 14–17</td>
<td>Holiday (Presidents’ Weekend)</td>
</tr>
<tr>
<td>Feb. 21</td>
<td>Deadline to Initiate Credit By Examination (Challenge)</td>
</tr>
<tr>
<td>March 3</td>
<td>Last Day to Request May and/or August 2014 Degree or Certificate</td>
</tr>
<tr>
<td>March 3</td>
<td>Last Day to Request Pass/No Pass Grading for Full-Semester Class</td>
</tr>
<tr>
<td>April 11</td>
<td>Last Day to Withdraw from Full-Semester Class and Receive a “W”</td>
</tr>
<tr>
<td>April 14–19</td>
<td>Spring Break</td>
</tr>
<tr>
<td>May 22</td>
<td>Commencement—Nevada County Campus</td>
</tr>
<tr>
<td>May 23</td>
<td>Commencement—Rocklin Campus</td>
</tr>
<tr>
<td>May 24</td>
<td>Semester Ends</td>
</tr>
<tr>
<td>May 26</td>
<td>Holiday (Memorial Day)</td>
</tr>
<tr>
<td><strong>Summer 2014</strong></td>
<td></td>
</tr>
<tr>
<td>June 9</td>
<td>INSTRUCTION BEGINS</td>
</tr>
<tr>
<td>July 4</td>
<td>Holiday (Independence Day)</td>
</tr>
<tr>
<td>Aug. 2</td>
<td>End of Summer Classes</td>
</tr>
</tbody>
</table>

This calendar is subject to change. Each short-term or fast-track class has its own add, drop, withdrawal, refund, and pass/no pass grading deadlines. Contact a campus Admissions and Records Office or check the Sierra College website for registration information.
Mission Statement and Institutional Outcomes . . . . 4
2013-2014 Academic Calendar . . . . . . . . . . . . . . . 6
A Brief History of Sierra College . . . . . . . . . . . . . . . 8
General Information . . . . . . . . . . . . . . . . . . . . . . . . . 10
Admission. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 12
Matriculation and Registration . . . . . . . . . . . . . . . . 14
Academic and Transfer Credit Programs . . . . . . . . . . 18
Student Enrollment and Attendance. . . . . . . . . . . . . . 21
Academic Regulations . . . . . . . . . . . . . . . . . . . . . . . . 22
Student Services and Resources . . . . . . . . . . . . . . . . 31
Financial Aid . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 38
Student Activities . . . . . . . . . . . . . . . . . . . . . . . . . . 41
Degree and Certificate Information . . . . . . . . . . . . . . 42
Associate Degree Requirements . . . . . . . . . . . . . . . 44
Degree Programs . . . . . . . . . . . . . . . . . . . . . . . . . . . 46
Certificate Programs . . . . . . . . . . . . . . . . . . . . . . . . 48
California State University G.E. Breadth . . . . . . . . . 50
IGETC–Intersegmental General Education
Transfer Curriculum. . . . . . . . . . . . . . . . . . . . . . . . . 52
Transferable Courses to CSU System. . . . . . . . . . . . . 54
Transferable Courses to UC System . . . . . . . . . . . . . . 56
Course Disciplines and Abbreviations . . . . . . . . . . . . 57
Understanding Course Descriptions . . . . . . . . . . . . . 58
Course Descriptions and Programs . . . . . . . . . . . . . . . 60
Students’ Rights and Responsibilities . . . . . . . . . . . . . 260
Academic Freedom Policy . . . . . . . . . . . . . . . . . . . . . 273
Administration, Faculty and Staff. . . . . . . . . . . . . . . 274
Advisory Committees . . . . . . . . . . . . . . . . . . . . . . . . 287
Maps . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 292
Index . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 295
The origin of Sierra College is somewhat uncertain. Some have said that the College may have begun with the establishment of Sierra Normal College and Business Institute in 1882. It was a small, private college at the location of today’s Placer High School in Auburn. Most think that Sierra College is an outgrowth of the Placer Union High School District.

In 1914, the Placer Union High School District was born, stretching from Loomis to Lake Tahoe. That same year, college-level classes were offered. The new college was named Placer Junior College. It was the fourth oldest junior college in California at the time and only one of nine statewide; the faculty numbered four.

Due to enrollment loss caused by World War I, Placer Junior College was abandoned by 1920, but the college idea never completely died. In 1936, the college was reestablished, again in Auburn, with the enthusiastic support of local voters. It is 1936 that Sierra College uses as its official date of birth.

Three wings of buildings were constructed to serve primarily Placer Junior College, but Placer High School students shared many of the facilities, instructors and organizational structure with the new college. Enrollment numbered about 100 and the college athletes went by the name “Spartans.” The college grew steadily and by 1938, 200 students were enrolled.

Enrollment crested at 282 in 1939, but events quickly overtook the college in the 1940s. The 1941 attack on Pearl Harbor essentially ended enrollment by men as many went off to serve their country. Additionally, enrollment dropped significantly when Japanese-Americans were forced into internment camps. The student population dropped to 53 by 1943. The college eliminated the “Junior” from its name, becoming Placer College.

The war’s end brought returning veterans, the end of internment, and the GI Bill of Rights. Enrollment in the post-war years exploded as a result. 1946 saw 467 students—about half were veterans. 856 were enrolled in 1949 and the Placer College facility was bursting at the seams. The College had reached full capacity, and efforts to find a new college location began. Area population continued to grow and the need for new facilities grew acute. In 1953, Placer College was renamed Sierra College and its athletes gained a new nickname—the “Wolverines.”

In 1957, the new Sierra Junior College District successfully passed a bond measure to pay for new facilities. In 1958, a site selection committee considered thirty-five possible locations and the present Rocklin site was chosen.

By 1961, the new Rocklin campus opened and enrollment reached 1,500. In 1962, Nevada County joined Placer County in forming a huge new Sierra Junior College District, which then had more square miles—3,200—than students.

Enrollment boomed in the 1960s. By the end of the decade, Sierra College boasted 100 full-time faculty members and nine new campus buildings. Enrollment was nearly 4,000. However, as fast as new facilities could be
robotics. The groundbreaking Sierra College Press is widely regarded as the only complete academic press operated by a community college in the United States.

Sierra College’s outstanding academic reputation, excellent technologies and training programs, and updated facilities led to increases in student enrollment. Projections of future “for credit” enrollment top 25,000.

The Sierra Community College District includes all of Placer and Nevada Counties and part of El Dorado and Sacramento Counties. In recent years, Placer and Nevada Counties have been two of California’s fastest growing areas.

The College District continues to experience dramatic growth and change. The future is bright as new technologies evolve, offering greater educational accessibility for students—both today and tomorrow.

Since its first days, the promise of Sierra College has been to provide a challenging and supportive learning environment for students having diverse goals, abilities, and needs interested in transfer, career and technical training, and lifelong learning. The College continues this mission as it adapts to meet the ever-changing needs of students.
Accreditation

Sierra College is accredited by the Accrediting Commission for Community and Junior Colleges (ACCJC), which operates under the Western Association of Schools and Colleges, and is authorized to operate under the U.S. Department of Education through the Higher Education Opportunity Act of 2008. ACCJC may be contacted at 10 Commercial Boulevard, Suite 204, Novato, CA 94949, (415) 506-0234, www.aacjc.org.

Accreditation is a voluntary system of self regulation developed to evaluate overall educational quality and institutional effectiveness, providing assurance to the public that Sierra College meets the Standards; the education earned is of value to the student who earned it; and employers, trade or profession-related licensing agencies, and other colleges and universities can accept a student’s credential as legitimate.

In 2010, Sierra College’s accreditation was reaffirmed. The college is engaged in preparing the application for the reaffirmation of accreditation culminating in the fall 2013 ACCJC site visit.

Instructional Programs

General Education: A range of courses to help students gain breadth of knowledge about the environment, natural sciences, social and behavioral sciences, humanities, English, communication and analytical thinking, awareness of cultural differences, and the importance of maintaining health and fitness.

Educational Programs: Organized sequences of courses leading to a defined objective, a degree, a certificate, a diploma, a license, or transfer to another institution of higher education.

Transfer Curriculum: Courses that meet general education and lower-division major requirements equivalent to the first two years at a four-year university to which students may transfer with junior standing.

Career and Technical Education: Certificates and degrees designed to prepare students for entry into professional level employment opportunities, or update job skills in the rapidly changing workplace.

Basic Skills: Both nondegree-applicable credit courses and noncredit courses in reading, writing, computation, and English as a Second Language (ESL).

Contract Course: Course offered under a contract pursuant to Educational Code 78021 with a public or private agency, corporation, association, or other organization.

Center for Applied Competitive Technologies (CACT):
Serves small to medium sized manufacturing and technology companies by providing technical assistance, technology transfer, and workforce training. Services are delivered via demonstration sites, workshops, and business consulting. For further information see the website at www.sierracollegetraining.com/cact.php.

Community Education Program: Provides convenient classes and activities to meet the needs and interests of our diverse community for enrichment and personal and professional growth. The Kaleidoscope schedule of not-for-credit, fee-based classes is published in spring, summer, and fall. Classes are offered in areas of business, career, computers, creative arts, food and wine, health, home and garden, and many other current interest subjects. Additionally, special activities such as sports camps, motorcycle training, bus trips and extensive travel are offered. Classes are open for the admission of adults and those minors who, in the judgment of the governing board, may benefit from the program. Students shall be charged a fee not to exceed the cost of maintaining the classes. For further information see the Community Education website at www.sccommed.org.

Distance Learning: Online and television courses which allow students to complete college studies from the convenience of their home. Online courses may be accessed from anywhere at anytime through an Internet connection. Hybrid courses, which are a combination of online and on-ground formats, are also offered. Television courses are broadcast live and distributed to various cable companies within the District, streamed live on the Internet, and available on iTunes U. Students interact with the professor via telephone.

Field Trips: Trips sponsored by the various instructional divisions to provide students with the enriching experience of visiting such locations as the Sierra Nevada, the ocean, and the desert. Additional fees may be assessed.

Internship Program: Work site learning which provides students an opportunity for hands-on experience, application of classroom learning and exploration and development of skills and knowledge in a particular field or profession. Sierra College offers a two-level internship program. The lower level, called Internship 94, is a Career Exploration internship in which the primary focus is for a student to learn more about a particular field or profession, without extensive previous knowledge or experience. The upper level placements, called Internship 95, are designed for advanced students to expand their knowledge and skills in an area related to their college major.
Osher Lifelong Learning Institute (OLLI): Provides non-credit, tuition-free instruction specifically designed to serve the interests of adults 55+ years of age. Classes are short term, typically four to six weeks in length. A variety of course topics are offered, including art, film, fitness, music, nutrition, and literature. For further information see the OLLI website at www.sierracollege.edu/olli.

Short-term or Fast-track Classes: Classes not a full semester in duration. Each class designated short-term or fast-track has its own add, drop, withdrawal, refund, and pass/no pass deadlines.

Student Services
Counseling Services: Professional counselors provide assistance with vocational and academic assessments, career planning, course advisement, transfer assistance and personal counseling.

Support Services: Services include admissions and records, financial aid, scholarships, housing, tutoring, EOPS/CARE, CalWORKs, TRiO, health services and support for disabled students, international students and veterans.

Governance
The Sierra College community determines its educational and other policies through a shared governance process involving students, classified support staff, faculty and administration. A senate formed by each group advocates the group’s interests. Each organization represents its constituency with a formal voice in determining educational policy, procedures, and regulations as well as coordinating representatives on committees and councils.

The Student Senate actively represents the students in the College’s committee work and planning. The organization also promotes student activities and clubs as well as providing information on current events for the student body.

The Classified Senate represents the College’s support staff on professional matters.

The Academic Senate, under authority from Title 5 of the California Code of Regulations, represents all faculty on academic and professional matters.

The Management Senate represents educational administrators, supervisory, and confidential employees on professional matters.

The Strategic Council consists of five representatives from each of the constituency groups. The purpose of the Council is to present and discuss the concerns and interests of the constituent groups; to collaborate with the Superintendent/President by conveying the interests of the constituent groups on the strategic direction of the college; to share in decision-making by advising the Superintendent/President in the development of policies and procedures; and to assist in disseminating information to the college community.

The Board of Trustees is the elected governing body of the Sierra Joint Community College District and has the final authority to establish policy for current and long-range educational plans and programs, promote orderly growth and development, and ensure fiscal responsibility. Board Policies and Administrative Procedures may be found at www.sierracollege.edu/about-us/board/policies.

Advisory Committees
To insure that meaningful curricula in the two-year career technical programs are maintained, advisory committees, comprised of specialists in the subject matter area, meet to advise on program emphasis and change. See individual committee membership, page 287.

Sierra College Foundation
The Foundation was established in 1972 to recognize and encourage charitable gifts from alumni, parents, friends, community members, and businesses in support of Sierra College students and programs. As an independent, non-profit corporation dedicated to project development, student assistance and educational achievement, the Foundation is supported by financial contributions (cash, stocks, planned gifts, memorials, bequests, real estate, trusts) and activities (wine and food tastings, auctions, golf tournaments, dinners, the auto fair and other fund-raising events). The Foundation is working to establish an endowment to generate funds in perpetuity to help students in need—a “9-1-1 Fund” that helps students facing one-time emergencies (e.g., car repairs, temporary housing, medical care, food, book vouchers) so that students may remain in school. Donations are channeled toward student assistance and scholarships, technology upgrades, facility projects and other campus needs. For information, check the website at www.sierracollege.edu/foundation, call the Foundation Office at (916) 660-7020, or write to the Sierra College Foundation, 5000 Rocklin Road, Rocklin, CA 95677.

Speakers Bureau
The Speakers Bureau is designed to acquaint community members with Sierra College and its fine staff. Faculty and staff are available to address a variety of timely subjects at meetings of community groups and organizations. For information, contact Marketing/Public Relations, (916) 660-7272.
Eligibility
Admission to Sierra College is open to any person who:
1. Has a high school diploma, GED, or passed the high school proficiency examination, or
2. Is over 18 years of age and capable of profiting from instruction.

Admission Procedures
All new students and students returning to Sierra College after an absence of one or more semesters must submit an application for admission prior to registering for classes. Sierra College has application deadlines for the fall and spring semesters. Students applying after a deadline will be admitted for the subsequent term. Electronic applications are available online at www.sierracollege.edu. Paper applications, also available in Spanish and Russian, may be obtained at a campus Admissions & Records Office. Additional admission information in Spanish and Russian is also available online. High school and college transcripts are not required for admission; however, students are encouraged to bring copies when they meet with counselors for advising.

Each semester the college offers registration opportunities to those who file an application for admission and complete the matriculation process. Dates are published online or may be obtained by calling (916) 660-7340 or (530) 274-5302.

Residency Requirements
For the purpose of determining tuition and enrollment fees, Sierra College students are subject to the legal residence restrictions established by the California legislature. Residency is determined at the time of admission and requires a statement of legal residence. Supporting documentation may also be required.

California residency shall be established for students who qualify under one of the following conditions:
1. If 19 years of age or over, has resided in California and has “manifested the intent” to make California their residence for at least one year and one day prior to the beginning of the semester.
2. If 18 years of age and both the student and the student’s parent or legal guardian have resided in California and have “manifested the intent” to make California their residence for at least one year and one day prior to the beginning of the semester.
3. If under 18 years of age and the student’s parent or legal guardian has resided in California and has “manifested the intent” to make California their residence for at least one year and one day prior to the beginning of the semester.

Any student not meeting one of the above requirements will be classified a nonresident. Regulations allow certain students to apply for nonresident tuition waivers. Contact the Admissions & Records Office for further information.
Nonresident students who wish to reapply for resident status must submit a residency reclassification petition by the end of the semester in question. Residency documents should be submitted to a campus Admissions & Records Office the semester prior to the change of status.

**International Students**

International students attend Sierra College from around the world. Each semester more than 47 different countries are represented at the college. Regardless of TOEFL scores, all students take assessment tests to determine placement in appropriate courses. Based on test results, college-level and/or ESL courses will be recommended. Assistance with the application and registration process is provided by the International Students Office (ISO), located in the J Building, Room 8. Contact the ISO directly for application materials at (916) 660-7330, email internationalstudents@sierracollege.edu or access international student information and application forms on the college web site at www.sierracollege.edu/int.

International students wishing to apply for study to the college on an F-1 visa must submit the following to the International Students Office:

1. A completed Sierra College International Student Application.
2. Meet at least one of the following English Language Requirements:
   - Score at least 133 CBT (Computer Based Test), 450 PBT (Paper Based Test), or 45 iBT (Internet Based Test) on the TOEFL exam.
   - OR
   - Enroll in the "English as a Second Language" (ESL) program at Sierra College. This requirement is waived for students from countries that use English as the primary language in their educational systems.
3. An official bank statement (in English) dated within three months indicating that there are sufficient funds available to cover tuition expenses (minimum $17,000.00 U.S. dollars).
4. Official transcripts translated into English indicating successful completion at a secondary school equivalent to completion of an American high school and transcripts from any colleges or universities attended.
5. A copy of valid passport (photo page).
6. A non-refundable application processing fee of $100.00 payable to Sierra College in the form of a MasterCard or Visa credit card, wire transfer, cashier's check, or check drawn on a U.S. bank (do not send cash). The $100.00 will be credited toward tuition at the time of registration.

**Priority Application Deadlines:**

- Fall semester ................................... July 1
- Spring semester .......................... December 1
- Summer sessions ............................... May 1
  (for students transferring from another U.S. college)

**NOTE:** Prior to arriving in the United States, prospective students shall submit to Sierra College proof of freedom from tuberculosis dated no more than 90 days before the start of classes. This report must be professionally translated to English.

**Mandatory Sierra College Health Insurance:** All international students attending Sierra College must purchase mandatory health insurance. There are no exceptions, even for students who have health insurance through their home countries.

**Other Important Health Information:** When traveling from country to country, a student may be exposed to different diseases. Sierra College strongly encourages the following immunizations: Tetanus, Measles and Rubella.

**Academic Enrichment Program**

Sierra College provides special part-time admission to students who:
- have completed the tenth grade;
- are at least 15 years of age;
- have a GPA of 3.0 or above; and
- assessed into the appropriate transfer level courses.

Students must attend a high school which has a current Academic Enrichment Compliance form on file in the Admissions Office. Home schooled students or those attending a charter school must have an affidavit indicating they are legally home schooled or attending a charter school.

Students must submit a Sierra College application for admission, an Academic Enrichment Permission form, and an official high school transcript each semester. Enrollment must be recommended by the school principal or counselor, and have the consent of a parent or guardian. Students should be counseled by the high school staff to determine the courses in which they should enroll. Enrollment is limited to a maximum of 7 units per semester; specific courses in which students may not enroll are published online on the Academic Enrichment Restricted Course List. Students admitted under these provisions are subject to all college rules and regulations and are not eligible for student employment. Contact a campus Admissions & Records Office for more information.
The Board of Governors of the California Community Colleges is reviewing draft regulations for implementation of the Student Success Act of 2012, which will increase student access and success through the provision of core matriculation services. The existing matriculation requirements are undergoing revision. See the Sierra College website or a counselor for updates.

Matriculation means, “The steps one takes to get to and through college.” At Sierra College, Matriculation is an agreement between the college and each student as to the steps both will take to help ensure the student succeeds.

Agreement:
Sierra College will:
• Assess students’ basic educational skills and career goals
• Orient students to the college’s programs, services and policies
• Provide top-quality instruction and services
• Offer a wide variety of courses
• Offer services to support students’ education
• Follow up on students’ progress toward educational goals

Students will:
• Participate in Assessment and Orientation
• Declare an educational goal
• Meet with a counselor to design an educational plan
• Attend classes and complete assigned coursework
• Seek out support services as needed
• Strive to make progress toward goals

Counseling: Students meet with a counselor to develop their educational plans. Counselors may also refer students to support services and answer specific questions and concerns.

Exemptions: Some students are exempt from the requirements of Matriculation. Nevertheless, students are encouraged to avail themselves of these services. Students are exempt if they meet any of the following criteria:
• Hold an associate or higher degree;
• Apply with a selected educational goal of “educational development;”
• Apply with a selected educational goal of “maintain certificate or license;” or
• Apply with a selected educational goal of “advance in current job/career.”

Students who have completed assessment at another college can have that step waived by submitting the assessment results to a campus Assessment or Counseling Office.

Challenges or Appeals to Matriculation: Students may request a waiver of any matriculation requirement due to extraordinary circumstances; or may review the regulations covering matriculation and file a complaint if the student believes any of these regulations are not being met. All complaints, appeals, or requests for information should be directed to the Counseling Office in the Winstead Center on the Rocklin campus.

Enrollment Priorities
Enrollment priority is provided for students enrolling at Sierra College for the purpose of degree or certificate attainment, transfer to a four-year college or university, or career advancement. Students must:
• have completed orientation, assessment, and developed a student education plan;
• be in good academic standing, first semester academic or progress probation, or be making satisfactory semester progress with a grade point average of 2.0 or higher;
• have completed less than 100 units at Sierra College excluding non-degree applicable English as a Second Language courses, basic skills courses, or special classes designed to address the educational limitations of students with disabilities.

Registration priority shall be provided to students in the order of priority listed below (within each category, priority is assigned by number of units completed at Sierra College): 1. Foster youth or former foster youth up to 24 years of age; veterans or members of the Armed Forces of the United
States who are California residents and received honorable, general, or other than honorable discharge; and members or former members of the State Military Reserve within 15 years of leaving state or federal active duty.

2. Students eligible for and receiving services through Disabled Students Programs and Services (DSPS) or Extended Opportunity Programs and Services (EOPS).

3. CalWORKS students, TRiO students, international students, and intercollegiate student athletes.

4. Continuing students, returning students, and Ghidotti Early College High School students.

5. New students.

6. Students who have lost enrollment priority.

7. All other students, including Academic Enrichment students.

Enrollment priority for any student shall be lost at the first registration opportunity for either of the following reasons:

1. The student is placed on academic and/or progress probation for two consecutive semesters and is subject to dismissal. (An automatic appeal will be granted for any student making satisfactory semester progress by earning a semester GPA of 2.0 or higher.)

2. The student has earned 100 or more degree-applicable units at Sierra College.

Students who are placed on academic or progress probation, or who have earned 75% or more of the 100 unit limit will be notified of the potential for loss of enrollment priority.

Enrollment Priority Appeals

Students may appeal the loss of priority enrollment status due to extenuating circumstances, or where a student with a disability applied for, but did not receive reasonable accommodation in a timely manner. Contact an Admissions & Records Office for further information.

Class Registration

Students may register at the designated date and time or at any time thereafter during scheduled hours of registration. Students are encouraged to use mySierra web registration at www.sierracollege.edu during their scheduled time to ensure the best possible course selection. Contact Admissions & Records in Rocklin at (916) 660-7340 or Nevada County at (530) 274-5302.

Disabled students (physical, hearing, or learning) should contact the Disabled Students Programs and Services Office to make arrangements for advising and registration.

Waitlists

20-space waitlists are established for every class offered by Sierra College. When a class reaches maximum enrollment, eligible students may add themselves to the waitlist. When a space in the class becomes available, the first student on the waitlist will receive notification through mySierra email. The student will then have 48 hours to register. If the student does not register, they will be removed from the waitlist and the next student on the list will be sent an email notification. This process will continue until all available seats are filled. It is recommended that students regularly monitor their email and waitlist status.

Students remaining on a waitlist after the class begins must attend the class. Faculty adding students on the first and/or second day of class will give priority to students in waitlist order. Students failing to appear for the first and second class meetings will lose their place on the waitlist.

For more information, read the waitlist FAQs on the website or contact an Admissions and Records Office.

Add/Drop Period

Registration is available during the first two weeks of the fall and spring semesters. Permission to add must be obtained from the class professor. The professor supplies each student with a 4-digit add code that allows the student to add the course through mySierra web registration or in person at a campus Admissions & Records Office. All fees must be paid at the time of registration. Refer to the website for registration details and deadline dates and times.

Note: Students must complete the matriculation process prior to registering for classes. Under no circumstances will class registration be processed after the withdrawal deadline.
Nonresident Student Tuition
Under state law, all community colleges are required to charge tuition to out-of-state residents and international students. The charge for the 2013-2014 catalog year is $190.00 per unit. Nonresident tuition is in addition to the enrollment fee.

Legislation allows an exemption from nonresident tuition for students meeting the following requirements:
- Attended a California high school for at least three years; and
- Graduated from a California high school, earned a California GED, or passed the California high school proficiency examination.

Undocumented aliens are also eligible for this waiver if, in addition to the above criteria, they have applied for legalization or intend to do so as soon as they become eligible. Contact an Admissions & Records Office for information.

Payment Information
Fees and tuition are due at the time of registration. Students are given a ten calendar day grace period, after which they will be dropped from classes for nonpayment. Students registering less than ten days before the beginning of the semester must pay all fees prior to the first day of the term.

Fees and Holds
Students owing fees after the start of a semester will have holds placed on their records. Students with holds for unpaid fees, fines, etc., must clear the holds before any future registration will be permitted. Sierra College reserves the right to use methods permitted by law to collect fees due, including referral to a collection agency. For further information, visit www.sierracollege.edu/payment.

Enrollment Fee
Sierra College charges a State-mandated enrollment fee of $46.00 per unit each semester. Fees, especially those established by the California State Legislature, are subject to change.

Recipients of CalWORKs, SSI/SSP, General Assistance, or qualified dependents of deceased or disabled veterans may be exempt from the enrollment fee. Check with the Financial Aid Office at least one week prior to registration for fee credits, fee waivers, grants and other means of financial assistance.

Health Fee
The mandatory health fee provides enrolled students with a range of medical services at the Sierra College Health Centers. The health fee is charged as follows:
- $19.00 per semester for students enrolled in fall or spring semester class(es);
- $16.00 for students enrolled in summer session class(es)

Exemptions are given for:
- Recipients of Board of Governor’s fee waivers, Methods “A” and “B”;
- Students enrolled exclusively in contract education classes, noncredit classes, or Public Safety In-Service Training classes;
- Students enrolled in the District’s Academic Enrichment Program;
- Students exclusively auditing classes;
- Students who are dependent upon prayer for healing (contact an Admissions & Records Office for the exemption form prior to registration).

Instructional Materials Fee
Students may be required to provide instructional materials for a credit or noncredit course, or purchase such materials from Sierra College. Approved instructional materials and related fees are published in the schedule of classes. Instructional Materials Fees are collected at the time of registration.

Nonresident Student Capital Outlay Fee
In addition to the enrollment fee and nonresident student tuition, nonresident students must pay a Nonresident Student Capital Outlay Fee of $6.00 per unit. This fee is mandatory unless students can show “economic hardship.” Students wishing to apply for an economic hardship waiver must submit the completed paperwork to an Admissions & Records Office.

Definition of Economic Hardship: Victim of persecution or discrimination in the foreign country in which the applicant is a citizen and resident, or who is a recipient of benefits under the Temporary Assistance for Needy Families program, the Supplemental Income/State Supplementary Program, or a general assistance program.
Parking Fee
Every vehicle using the Rocklin, Nevada County, or Tahoe-Truckee campus parking facilities must display a valid parking permit, clearly visible through the driver-side, front windshield of the vehicle, or a valid DMV disabled person license plate or placard. Permits may be purchased through mySierra. Students receiving financial aid may be eligible to purchase a permit for a reduced fee. Contact the Financial Aid Office for details.

Regular Semester Fee:
- Standard Permit—Rocklin and Nevada County: $50.00
- Standard Permit—Tahoe-Truckee: $30.00
- Standard Permit—Financial Aid Eligible: $25.00
- Carpool Permit: $35.00
- Motorcycle Permit: $13.00

Summer Session:
- Standard Permit—All Campuses: $25.00
- Standard Permit—Financial Aid Eligible: $25.00
- Carpool Permit: $25.00
- Motorcycle Permit: $5.00

Daily permits are available for $3.00 per day at permit dispensers located in parking lots.

Parking permits are non-transferable. A parking permit does not guarantee that a parking space will be available. Citations will be issued to vehicles without permits and for violations of district policy and state law. For more information regarding parking fees, rules, or refunds, contact the Parking and Security Services Office at (916) 660-7120, or visit the website at www.sierracollege.edu.

Student Body Photo ID Card/Activity Sticker
Students who have paid all registration fees are eligible for Student Body Photo Identification Cards. The cards are issued at either the Rocklin, Nevada County or Tahoe-Truckee Campus Admissions & Records Office. Students are required to have the photo ID to check out materials at the Sierra College Library and to use the Mathematics Laboratory, Testing Center, and Instructional Laboratories. There is no fee for the ID card.

A Student Body Activity Sticker may be purchased each fall and spring semester for $10.00. The sticker, when affixed to the ID card, provides student discounts at campus activities, performances, and athletic events, discounts at local participating businesses, and access to wireless Internet service at specific locations on campus. The sticker may be purchased through mySierra. Contact the Rocklin Campus Life Office at (916) 660-7380 for further details including refund information.

Student Center Fee
The mandatory Student Center Fee is designated solely for the purpose of funding and operating a student center. The fee, charged for the fall and spring semesters, is $1.00 per unit, to a maximum of $5.00 per semester. Exemptions are given to:
- Recipients of Board of Governor’s Fee Waivers; and
- Students enrolled exclusively in noncredit courses.

Additional Semester Expenses*
The following are approximate costs of other fees and expenses for a full-time student for one semester:
- Room and Board (on-campus): $3,500.00
- Books and Supplies: $1,400.00
- Transportation (by car): $400.00
- Personal (clothes, recreation, etc.): $900.00

*These are estimates and are subject to change. Personal expenses vary with individual needs and tastes.

Refunds
Enrollment, health and student center fees are refundable to students who are dropped or drop themselves from full-term classes by the published deadline. For specific short-term class refund deadlines, students should refer to their printed student schedule/bill, check their mySierra account, contact their professor or contact an Admissions & Records Office. Note: Refunds are not issued to students who drop or are dropped from classes by their professors after the census day.

Nonresident Student Tuition is refundable for reduction of unit load if the student withdraws from full-semester classes during the first two weeks of a semester. Short-term classes have their own deadlines.

One-half of Nonresident Student Tuition is refundable if the student withdraws from Sierra College within the first six weeks of a semester, or the first two weeks of a summer session.

Parking Permit—Applications for refunds will be accepted during the first two weeks of a semester or the first three days of a summer session. Applicants must present their parking permit to a campus Parking & Security Services Office along with a completed parking refund request form. Allow six weeks for refund.

American Opportunity and Lifetime Learning Education Tax Credits
In accordance with the Taxpayer Relief Act of 1997, Sierra College mails Tax Form 1098-T at the end of January to each student who paid enrollment fees in the prior calendar year and who was officially enrolled as of the course census date. This information is also provided to the IRS. It is the student’s responsibility to provide proof of payment in accordance with IRS regulations. Please check with a tax preparer to determine if you are eligible for either of these tax credits or contact the IRS directly at (800) 829-1040 or at www.irs.gov. The records of students who have chosen an assigned identification number are not reported.
Advanced Placement Examination
Sierra College accepts Advanced Placement Examinations passed with a score of three or higher. Currently enrolled students may be awarded up to six units of credit per exam upon submission of official exam results. The amount of credit awarded is based on the recommendations of the American Council on Education. Credit is awarded for a Sierra College course or courses; as general education credit toward one or more areas of the associate degree; or as elective credit.

Transfer students are cautioned that, regardless of Sierra College policy, some institutions determine Advanced Placement credit based on their own local policies and may recalculate credit. For further information please consult a counselor. To request credit, students must submit a General Student Petition and request that the College Board send official Advanced Placement Examination results to a Sierra College Admissions & Records Office (College Code 4697).

Air Force ROTC
Air Force Reserve Officer Training Corps is available to Sierra College students through a program offered at California State University, Sacramento. The CSUS Department of Aerospace Studies offers three- and four-year programs leading to a commission in the United States Air Force. All coursework is completed on the CSUS campus. Qualified students may compete for a very limited number of nationwide scholarships. Application to the program should be no later than the first semester of the sophomore year. Juniors may apply under certain conditions. Contact the CSUS Recruiting Flight Commander at (916) 278-7315 for information.

College-Level Examination Program (CLEP)
Students with scores of 500 or better on College-Level Examination Program (CLEP) tests covering the general areas of Social Sciences and History, Humanities and Natural Sciences may receive 6 units of elective credit for each
The CSU GE-Breadth and IGETC courses are approved annually for the academic year. If a course is taken before it is approved or after it is removed, it cannot be used to satisfy CSU or UC transfer general education. The CSU GE-Breadth and IGETC course lists for all California Community Colleges are available at www.assist.org.

Students must request that a General Education Certification or an IGETC Certification be sent to the transfer institution along with the final Sierra College transcript.

Students pursuing majors with extensive lower-division unit requirements, such as Engineering, are advised to focus on completing the pre-major requirements while meeting minimum admission requirements. See a counselor for more information on either of these transfer general education certification programs.

Honors Courses
Many courses offered at Sierra College may, with the instructor’s permission, be taken for Honors credit. Students who are interested in a more challenging classroom experience may contract with a willing instructor for honors credit. Completion by a student of the honors contract together with an earned course grade of A or B will result in a notation on the student's transcript indicating that the course was passed "With Honors." For more information, visit www.sierracollege.edu/student-services/specialized-programs/honors.

International Transcript Acceptance
Students wishing to receive credit at Sierra College for courses completed at an international institution must request and pay for an evaluation of their international transcript(s) through one of the following agencies:
- Educational Records Evaluation Service
- International Education Research Foundation, Inc.
- World Education Services, Inc.

The evaluation must include a course by course review which determines semester unit value, grade and lower/upper division status. In most cases, students are granted elective credit only for lower division course work completed at international institutions. No credit is granted for upper-division courses. Students wishing to be granted credit for specific general education/learning skills or major courses must submit course descriptions in English with course substitution petitions.

Military Service Credit
A veteran who was on active duty one year or longer and received an honorable discharge may request that 5 units of military training credit be applied to the Health Education/Physical Education associate degree requirement. Credit has no bearing on the student’s GPA and may not transfer to a four-year university. To request credit, students must submit a copy of their DD-214 to an Admissions & Records Office or the Veterans Office. Students must
submit an application for admission before military credit may be awarded.

Veterans receiving VA educational benefits through the Sierra College Veterans Services Office must apply for military credit by the end of their second semester of enrollment, regardless of the number of units completed at Sierra.

**Study Abroad**
Since the Study Abroad Program began at Sierra College in 1986, a number of our students have pursued summer or semester studies in Argentina, Australia, Austria, China, Costa Rica, England, France, Greece, Italy, Mexico, Peru, and Spain. Students have earned credit for academic work while learning about another culture through direct experience.

Courses are taught by Sierra College faculty, with foreign instructors teaching as necessary. Most courses taught abroad transfer to four-year colleges and universities throughout the U.S. as part of the articulated California Community College curriculum.

To learn about foreign study opportunities, contact Christine Vona, Study Abroad Coordinator, (916) 660-8026.

**Transfer Articulation Agreements**
Sierra College maintains formal articulation agreements with many transfer colleges and universities. These agreements specify how courses will be accepted at the transfer institutions. Articulation agreements with California State University and University of California campuses may be viewed at www.assist.org; this information should be interpreted with the assistance of a Sierra College counselor.

**Transfer Credit Acceptance**
Official transcripts from regionally accredited institutions will be evaluated for all lower-division degree-applicable credit courses. Appropriate units and subject content will be applied to major and general education areas to meet graduation requirements. Students who completed courses at other colleges should meet with a counselor to determine which courses fulfill Sierra College’s degree or certificate requirements.

Transfer credit is also used to fulfill prerequisite requirements. To ensure timely and accurate posting of transfer units to your Sierra College record, please submit a sealed official transcript to a campus Admissions & Records Office.

**2 + 2 Articulation Program**
2+2 Articulation is a planned process linking programs and services to assist students in making smooth transitions from secondary to postsecondary levels without experiencing delays or duplication of learning. 2+2 articulation agreements have been developed with many area high school and ROP programs which make it possible for students to gain college credit for specified courses once they have enrolled at Sierra College and have completed other requirements of the agreement. Contact the Career and Transfer Connections Office for further information.
Attendance

Regular attendance and participation in all classes are important student obligations. Attendance is an integral part of student success.

**Attendance at First Class through Census Date:** Students must attend the first scheduled meeting of each class in which they are enrolled or risk being dropped by the professor. Instructors shall clear their rolls of inactive students not later than the end of the last business day before the census day (typically Monday of the third week for full-term classes). Students who are dropped or drop themselves by the published, class-specific Add/Drop deadline are entitled to a refund.

Attendance during the Semester/Session: A professor has the right to drop any student who has accumulated excessive absences. Generally, excessive absences are defined as 10% of the total hours of class time or the equivalent of two weeks of a full-term class. The application of excessive absences may vary by department and/or instructor according to the demands of the curriculum. Any exceptions to this policy will be communicated to students by professors in the class syllabus. A student dropped by a professor in error may petition for reinstatement to the class. Following the Add/Drop deadline, students who choose to stop attending class(es) retain the responsibility of officially withdrawing themselves from the class(es).

Dropping and Withdrawing from Classes

Students may drop or withdraw from classes online through mySierra or in person at a campus Admissions & Records Office. Students should refer to the website for specific drop and withdrawal deadlines.

Full-term classes dropped by the Add/Drop deadline (within the first two weeks of the semester) will not appear on the student’s academic record. Short-term and summer session classes have class-specific deadlines which can be found on the student schedule/bill, by checking mySierra, or by verifying with an Admissions & Records Office. Instructors shall clear their rolls of “no show” and inactive students not later than the end of the last calendar day before the census day. Students who are dropped or drop themselves by the Add/Drop deadline are entitled to a refund.

Classes withdrawn from after the add/drop period will appear on the student’s record and cannot be removed. It is the student’s responsibility to withdraw from classes that they do not wish to attend and to verify that they are no longer enrolled.

A student may withdraw up until the withdrawal deadline for the class. Students enrolled after the last day to withdraw will receive a grade for the class. Students are limited to receiving a “W” and/or a substandard grade (“D”, “F”, “NC”, “NP”) no more than three times for the same course. After the third such enrollment attempt, students will be blocked from additional enrollment. (Military withdrawals are not included in this limitation.)

Enrollment Status

Students are responsible for their enrollment status at all times. Credit is not given for courses in which a student is not officially enrolled. For purposes of student enrollment verifications, a full-time student is one enrolled in 12 or more units during a semester. A half-time student is one enrolled in 6–11.5 units and a part-time student is one enrolled in less than 6 units. For the summer session, 4 units is considered full-time; however, this does not apply in the determination of financial aid eligibility.

Illness or Emergency Leaves of Absence

Sierra College does not grant medical leaves of absence. Students who are absent for at least two consecutive weeks due to illness should obtain written documentation from their care provider to give to class professors. Regardless of illness, the student is responsible for all missed assignments and examinations.

Open Courses

It is the policy of Sierra College that, unless specifically exempted by statute, every course offered and maintained by the District shall be fully open to enrollment and participation by any person who has been admitted to the college and who meets such prerequisites established pursuant to Title 5.

Overlapping and Multiple Course Enrollment

Students may not enroll in credit courses which meet at the same or overlapping time. Also, students may not enroll in more than one class section of the same course in the same semester or session. This is also true of courses designated as repeatable, unless the class sections don’t have overlapping timeframes.
Academic Renewal

Past substandard academic performance may not, for a variety of reasons, be reflective of a student’s subsequent demonstrated ability. Academic renewal permits the alleviation of all or part of such substandard academic performance at Sierra College in cases where the past work may impair the student's progress toward a legitimate educational or career goal. Grades approved for renewal will remain on the student’s transcript; however, the grades will no longer be included in the computation of the student’s GPA.

A request for academic renewal must meet the following guidelines:
1. The student must have completed a minimum of 18 units with a cumulative grade point average of 2.5 or higher in all courses attempted since taking the courses to be alleviated.
2. A minimum of 12 months must have elapsed since the substandard grades were earned.
3. The number of units alleviated may not exceed 30 units, or be in excess of the number of units satisfactorily completed by the student since taking the courses to be alleviated, whichever is lower.
4. Academic Renewal can only be applied to “D” and “F” grades.

A student seeking academic renewal must meet with a Sierra College Counselor to complete an Academic Renewal petition. The petition must be signed by the counselor before it is submitted to a campus Admissions & Records Office. If any of the required 18 units are earned at another college, an official transcript must be submitted with the petition. The Academic Standards Committee will review the request. For further information, contact a counselor.

Academic Probation: A student who has attempted at least 12 units at Sierra College and has earned a cumulative grade point average of less than 2.0 in all units attempted, shall be placed on academic probation. “All units attempted” is defined as all units of credit for which the student is enrolled at Sierra College. Students on academic probation may be held to a student educational plan developed with a counselor. Probation is posted on the student’s permanent record.

Progress Probation: A student who has enrolled in at least 12 units at Sierra College and has entries of “W,” “I,” “NC” or “NP” in fifty percent or more of the total units attempted, shall be placed on progress probation. Students on progress probation may be held to a student educational plan developed with a counselor. Probation is posted on the student’s permanent record.

Academic Standing

President’s Honor Roll: Full-time students earning a grade point average of 3.5 or better are included on the President’s Honor Roll each semester. To qualify, students must complete 12 or more units of graded work (A, B, C, D, or F) at Sierra College. Credit by Examination and courses taken Pass/No Pass do not count toward this requirement.

Dean’s List: Full-time students earning a grade point average of 3.0 to 3.499 are placed on the Dean’s List. To qualify, students must complete 12 or more units of graded work (A, B, C, D, or F) at Sierra College. Credit by Examination and courses taken Pass/No Pass do not count toward this requirement.

Dismissal:

Students on academic probation shall be subject to dismissal if their cumulative grade point average is less than 2.0 in all units attempted in each of two consecutive semesters*, excluding summer.

Students who are on progress probation shall be subject to dismissal if the percentage of “W,” “I,” “NC” and “NP” units reaches or exceeds fifty percent in each of two consecutive semesters* attended. Students making satisfactory semester progress by earning a semester grade point average of 2.0 or higher are not subject to dismissal.

Upon notification of dismissal, the student will not be eligible to enroll in any classes for one semester. Dismissal is posted on the student’s permanent academic record.

*For the purpose of dismissal, semesters shall be considered consecutive on the basis of the student’s enrollment after the drop date, as long as the break in enrollment does not exceed one full semester.

Dismissal Appeal: Students may request exceptions to
A $15 per unit non-refundable audit fee will be charged unless enrolled in 10 or more units and requesting to audit 3 units or less. Students auditing a class without simultaneous enrollment in any other class are not eligible for services at a campus health center. Contact an Admissions & Records Office for an audit petition and further information.

Credit By Examination (Challenge Petition)
Students may request to challenge a course offered by the college if they have prior knowledge or experience in the subject area. To be eligible to challenge a course, a student must:
1. Currently be registered and in good standing;
2. Currently be enrolled in at least one course other than the course being challenged;
3. NOT be enrolled in the course being challenged;
4. Not have completed nor enrolled in a more advanced course;
5. Have obtained approval of the challenge request from both the course professor and division dean;
6. Not have challenged more than 15 units; and
7. Complete at least one course other than the course being challenged.

A course in which a student enrolls and receives a grade of “D,” “F,” “NC,” “NP,” or “I,” may not be challenged at a later date, nor may a course be challenged again to improve the grade. Units received through the challenge process do not count toward the 12 units in residence required for the associate degree or the full-time enrollment necessary for honor roll determination. Note: Some private institutions
who gains access to grade records without authorization.

The removal or change of an incorrect grade from a student’s record shall only be done pursuant to Education Code 76232 or by alternative method that ensures that each student shall be afforded an objective and reasonable review of the requested grade change.

Provisions will be made to allow another faculty member to substitute for the instructor if the student has filed a discrimination complaint, if the instructor is not available or where the district determines that it is possible that there may have been gross misconduct by the original instructor. Students who are requesting a grade change due to alleged harassment or discrimination shall refer to Administrative Procedure 3435. In the case of fraud, bad faith or incompetence, the final determination concerning removal or change of grade will be made by the Dean, Student Services. In all cases, the instructor who first awarded the grade will be given written notice of the change.

**Change of Grade from Evaluative Symbol to Evaluative Symbol**

Students wishing to challenge an evaluative grade received in a course (A, B, C, D, F, P, NP) must submit a change of grade request within one year after completing the course for which the grade change is being requested. After this period, if there are extenuating circumstances (i.e., verified cases of accidents, illnesses, or other circumstances beyond the control of the student), a change of grade request may be submitted to the Academic Standards Committee; however, the period for a request may not exceed three years after the completion of the course:

**Procedures Within One Year:**

- A student shall file a Grade Change Petition with an Admissions and Records Office within one year after completing the course. Specific reasons for the request must be stated.
- The petition must be approved and signed by the appropriate instructor and dean. The instructor must cite a reason consistent with one of the conditions in Education Code 76224.
- Approved grade change petitions will be processed by the Admissions and Records Office.

**Procedures After the First Year, but Within Three Years:**

- If there are extenuating circumstances, a student shall file a Grade Change Petition with an Admissions and Records Office up to but no later than three years after the completion of the course. Specific reasons for the request must be stated.
- The petition must be approved and signed by the appropriate instructor and dean. The instructor must cite a reason consistent with one of the conditions in Education Code 76224.
- Approved grade change petitions will be processed by the Admissions and Records Office.

**Directory Information**

Directory information includes name, address, phone number, date and place of birth, major, participation in officially recognized activities and sports, weight and height of athletic team members, dates of attendance, degrees and awards received and most recent previous school attended. Upon request, the college may release this information to military recruiters and the media. Students who do not wish this information to be released must contact an Admissions & Records Office during the first two weeks of the semester or the first three days of summer session.

**Grade Changes**

The instructor’s determination of student grades shall be final except in cases of mistake, fraud, bad faith, or incompetence. “Mistake” may include, but is not limited to, clerical errors and errors made by an instructor in calculating a student’s grade. “Fraud” may include, but is not limited to, inaccurate recording or change of a grade by any person who gains access to grade records without authorization.

The removal or change of an incorrect grade from a student’s record shall only be done pursuant to Education Code 76232 or by alternative method that ensures that each student shall be afforded an objective and reasonable review of the requested grade change.

Provisions will be made to allow another faculty member to substitute for the instructor if the student has filed a discrimination complaint, if the instructor is not available or where the district determines that it is possible that there may have been gross misconduct by the original instructor. Students who are requesting a grade change due to alleged harassment or discrimination shall refer to Administrative Procedure 3435. In the case of fraud, bad faith or incompetence, the final determination concerning removal or change of grade will be made by the Dean, Student Services. In all cases, the instructor who first awarded the grade will be given written notice of the change.
Change of Grade from Evaluative Symbol to Non-Evaluative Symbol

To change an evaluative grade (A, B, C, D, F, P, NP) to a non-evaluative symbol (W, MW, I, IP), an extenuating circumstance must be verified in writing. Extenuating circumstances are verified cases of accidents, illnesses, or other circumstances beyond the control of the student. A request for a change of grade to a non-evaluative symbol may not exceed three years after the completion of the course.

Procedures Within Three Years:
• A student shall file a Grade Change Petition with an Admissions and Records Office indicating the specific change requested.
• The petition must be supported and signed by the appropriate instructor.
• The student must attach sufficient documentation proving an accident, illness, or extenuating circumstances beyond the control of the student.
• The Admissions & Records Office will validate the required data and confirm the satisfaction of the conditions specified by California Code of Regulations, Title 5, Section 55025.
• The petition will be forwarded to the Academic Standards Committee for consideration.

Change of Grade from Evaluative or Non-Evaluative Symbol to a Drop
• The student shall file a No Show Petition with the Admissions & Records Office indicating the specific change that is requested.
• The petition must be filed within 30 days after the end of the class or by June 30th of the academic year in which the grade was received, whichever is earlier.

Grade Points and Units

The unit of work at Sierra College is the semester hour. Courses require a minimum of three hours of student work per week, per unit for the equivalent of an 18 week semester. One unit of lecture requires one hour of class time and two hours of outside study or homework per week. As laboratory courses require minimal study/work outside of class, one unit of laboratory requires three hours of class time per week. Expected hours per week may be adjusted based on the length of the term. All college work is measured in terms of both quantity and quality. The measure of quantity is the unit and the measure of quality is the grade point.

Grade points are awarded as follows:
Grade of A—4 points per unit;
Grade of B—3 points per unit;
Grade of C—2 points per unit;
Grade of D—1 point per unit;
Grade of F—0 points per unit.
Grade point average (GPA) is calculated by dividing the total number of grade points by the total number of units attempted.

Nondegree-applicable credit courses shall not be included in calculating student degree-applicable grade point average.

Grading and Academic Record Symbols

Pursuant to section 55023 of Title 5, the grading practices of the District shall be as follows:

Evaluative Symbols
A = Excellent
B = Good
C = Satisfactory
D = Less than satisfactory
F = Failing

Non-Evaluative Symbols
P = No Pass (less than satisfactory or failing); units not counted in grade point average; has the same meaning as “CR,” as that symbol was defined prior to the Summer 2009 term.
NP = No Pass (less than satisfactory or failing); units not counted in grade point average; has the same meaning as “NC,” as that symbol was defined prior to the Summer 2009 term.
I = Incomplete academic work for unforeseeable, emergency and justifiable reasons at the end of the academic term; not used in calculating units attempted or for grade points.
IP = The In Progress symbol denotes that the class extends beyond the normal end of an academic term. It indicates that work is in progress but that assignment of an evaluative symbol must await its completion.
RD = The Report Delayed symbol is used when there is a delay in reporting the grade of a student due to circumstances beyond the control of the student.
W = Withdrawal from class or college is authorized through two-thirds of the course term. The academic record of a student who remains in class beyond that date must reflect a grade other than a “W.” Courses dropped prior to census, or its equivalent for short-term courses, will not appear on the student’s academic record.
MW = Military Withdrawal. Military withdrawal is assigned when a student who is a member of an active or reserve United States military service receives orders compelling a withdrawal from courses. Upon verification of such orders, military withdrawal may be assigned at any time after the Add/Drop period. Military withdrawal shall not be counted in progress probation, dismissal calculations, or in calculating the permitted number of withdrawals.

Since professors have the responsibility for evaluating student performance and assigning final grades, students are encouraged to discuss their grades with professors at any time. All grades are final and are not subject to change except as outlined in Education Code Section 76224.

Grades will be available approximately four weeks after the end of each semester. Students may access grades on the Sierra College website at www.sierracollege.edu.
Incomplete Academic Work
If, due to unforeseeable, emergency and justifiable reasons, a student has not completed academic work at the end of a semester/session, an incomplete “I” symbol may be requested. It is the primary responsibility of the student to request an incomplete. A student may obtain an Incomplete Petition from a campus Admissions & Records Office and submit it to the professor for approval. If approved, the professor will file a written record of the conditions for removal of the “I” and the grade assigned in lieu of its removal. The student may not re-enroll in the course, but instead works with the professor to complete the required academic work no later than one year after the end of the term in which the incomplete was assigned. The student must submit a grade change petition upon completion of the work. A final grade will be assigned when the work stipulated has been completed and evaluated, or when the time limit for completing the work has passed.

Incomplete symbols will not be used in calculating units attempted nor for grade points.

Pass/No Pass Grading
“Pass/No Pass” grades exist to permit students to attempt a class in which they are interested but feel the risk of failure may be high. Students may elect to take one class per term on a pass/no pass basis unless the catalog expressly limits the grading for a particular course to a letter grade only (A, B, C, D, F). It is important to keep in mind that some CSU and UC campuses may have limitations on the number of pass/no pass courses that may be used to meet degree requirements. The UC system allows a maximum of 14 semester units taken pass/no pass to satisfy the minimum admission requirement of 60 transferable semester units. Pass/No Pass grading is subject to the following regulations:
1. The course must be outside the student’s major.
2. Students must submit a Pass/No Pass petition by the end of the first 30% of the class term. Check on mySierra or with a campus Admissions & Records Office for deadlines.
3. A grade of “A,” “B,” or “C” will become a “P” (Pass); a grade of “D” or “F” will become an “NP” (No Pass).
4. Units earned with a P grade are not used to calculate grade point averages.
5. Units attempted for which NP is recorded are used in determining probation and dismissal.
6. A non-repeatable class in which a P was received may not be repeated. A class in which an NP was received may be repeated on a Pass/No Pass basis only.
7. Once the class has begun, the filed petition for Pass/No Pass cannot be withdrawn nor the decision be reversed; however, changes in major may result in P/NP grades being changed to letter grades after review by the Academic Standards Committee.

Prerequisites, Corequisites and Advisories
It is the intent of Sierra College to guide students to courses in which they will have the greatest chance of academic
success. Therefore, some courses listed in this catalog have either a prerequisite, a corequisite, or advisory preparation. If no prerequisite, corequisite or advisory information is indicated there are no conditions of enrollment. The following are the definitions for prerequisites, corequisites and advisory preparation:

“Prerequisite” means a condition of enrollment that students are required to meet in order to demonstrate current readiness for enrollment in a course or educational program. “C” is the designated minimum grade for prerequisite courses.

“Corequisite” means a condition of enrollment consisting of a course that students are required to simultaneously take in order to enroll in another course.

“Advisory” means a condition of enrollment that students are advised but not required to meet before or in conjunction with enrollment in a course or educational program.

Prerequisite/Corequisite Appeal Procedures

Students who have met a prerequisite in high school or at another college, may submit transcripts for review and prerequisite clearance. All documents, including the Pre-requisite Clearance form (available online), should be submitted to the Assessment Center, emailed to assessment@sierracollege.edu, faxed to the Rocklin campus at (916) 630-4513, or faxed to the Nevada County campus at (530) 274-5307. Results are available within 3-5 business days after submission and are accessible online via mySierra.

Prerequisite/Corequisite Appeal forms may be obtained at the following locations:
- Assessment Center
- Counseling Centers
- Academic Division Offices.

The Prerequisite/Corequisite Appeal form must be submitted to the appropriate academic division office for the prerequisite/corequisite being appealed. The appeal will be reviewed within 5 working days, and the results will be accessible online via mySierra. If approved, the student will be permitted to enroll in the class.

Remedial Coursework Limit

Students are limited to no more than thirty (30) semester units of credit for remedial coursework. These nondegree-applicable basic skills credit courses are taught in reading, writing, computation, and English as a Second Language, and are numbered in the 500 series. Students enrolled in English as a Second Language, and students identified by the District as having a learning disability are exempted from the unit limitation. In addition, students may petition for a waiver of the unit limitation if they show significant, measurable progress toward the development of skills appropriate to enrollment in degree-applicable credit courses. For further details, contact a counselor.

Student Course Repetition

Course repetition occurs when a student, who has previously received an evaluative symbol in a credit course, re-enrolls in that course and receives an evaluative symbol.

- Students may not repeat a course if a grade of “C” or better was earned, unless the course is identified as repeatable in the course description. An exception may be granted for extenuating circumstances or lapse of time.
- Students may repeat a course determined to be legally mandated regardless of whether substandard academic work has been previously recorded. Such courses may be repeated for credit any number of times. Students may re-enroll in courses that the District has determined to be required by statute or regulation as a condition of paid or volunteer employment. Students may be required to provide evidence that they are required to re-enroll as a condition of their paid or volunteer employment. The grade received by the student each time will be included in calculations of the student’s grade point average.
- Students may petition to re-enroll in a course as a result of a significant change in industry or licensure standards as necessary for the student’s employment or licensure.
- Students with disabilities may enroll multiple times in courses designated as “special classes” when an individualized determination verifies that such repetition is required as a disability-related accommodation.
- Students are allowed to enroll more than once in an occupational work experience course for a total of no more than 16 semester units. Occupational Work Experience includes all courses numbered 95 and Personal Development 94. The grade received each time shall be included for purposes of calculating the student’s GPA.
- A non-repeatable course may be attempted up to a maximum of three times per credit course if a substandard grade (“D,” “F,” “NC,” “NP”) or a withdrawal (“W”) was earned. Enrollment attempts include any combination of withdrawals and substandard grades. (Note: military withdrawals are not included.) An exception may be granted for extenuating circumstances.
- When course repetition occurs, the last grade (“A,” “B,”
“C,” “D,” “F”) and credit earned will be included in the computation of the grade point average.

- Courses that are repeated are recorded on the student’s permanent academic record using the appropriate symbol for repetition.
- Annotating the permanent academic record is done in such a manner that all work remains legible, insuring a true and complete academic history.
- Nothing will conflict with Education Code Section 76224 pertaining to the finality of grades assigned by instructors, or with Title 5 or district procedures.
- Courses offered for a variable number of units must be repeated for the same or greater number of units.

**Course repetition due to extenuating circumstances**

A student may petition to repeat a course based on a finding that the student’s previous attempt (whether sub-standard grade, passing grade, or withdrawal) was, at least in part, the result of extenuating circumstances. Extenuating circumstances are verified cases of accident, illness or other circumstances beyond the control of the student.

The petition is filed with an Admissions & Records Office and must indicate the extenuating circumstances warranting the repeat along with counselor and/or instructor review, verification and recommendation. When repetition is approved, the previous grade and credit will be disregarded in computing the student’s GPA.

**Course repetition due to significant lapse of time**

A student may be permitted or required to repeat a course one time in which a “C” or better grade was earned if:

1. There has been a significant lapse of time since the grade was received. Significant lapse of time is defined as a minimum of seven years; each discipline has the authority to institute significant lapse of time as less than seven years by program and/or course. A list of exceptions is maintained in the Instruction Office; or
2. The District has established a recency prerequisite for a course or program; or
3. An institution of higher education to which a student wishes to transfer has established a recency requirement that the student cannot satisfy without repeating the course.

When a student needs to repeat an active participatory course due to significant lapse of time, each repetition attempt will be counted toward the established repetition limits. However, if a student has already exhausted the number of permitted repetitions, then one additional repetition due to significant lapse of time may be permitted.

When a course is repeated due to significant lapse of time, the new grade and unit(s) will be included in the student’s grade point average and total units completed. The grade and unit(s) from a previous attempt will be disregarded.
Courses Designated as Repeatable
Under special circumstances, courses may be designated as repeatable. When a course is repeated, the grade received each time shall be included for purposes of calculating the student’s grade point average. The following types of courses may be designated as repeatable:

- Courses for which repetition is required to meet the major requirements of CSU or UC for completion of a bachelor’s degree;
- Intercollegiate athletics courses; and
- Intercollegiate academic or vocational competition courses.

Students are allowed to repeat these courses up to three times for a total of four enrollments. This enrollment limitation applies even if the student receives a substandard grade or “W” during one or more of the enrollments in such a course, or the student petitions for repetition due to extenuating circumstances.

Courses formerly designated as repeatable “activity” courses are now defined as “active participatory courses.” These courses have individual study or group assignments as the basic means by which learning objectives are obtained. Student enrollment in active participatory courses in physical education, visual arts, and performing arts may not be repeated unless they meet one of the three criteria listed above.

Active participatory courses in physical education, visual arts, and performing arts that are related in content include groups of distinct courses with similar primary educational activities that have been separated into skill levels or variations and are separated with different student learning objectives or outcomes for each level or variation. Students are limited to four enrollments within each of these course groupings.

Student Records
Student records are maintained in the Admissions & Records Office. Students are responsible for regularly checking their mySierra account to ensure receiving registration and financial aid information.

Family Educational Rights and Privacy Act (FERPA)
Sierra College maintains student records and privacy in accordance with the Family Educational Rights and Privacy Act (FERPA) of 1974, as amended. FERPA sets forth requirements regarding the privacy of student records and protects students’ rights to inspect and review their education records, to request to amend their education records, and to limit disclosure of personally identifiable information contained in education records.

Student education records are defined as records, files, documents and other materials that contain information directly related to a student, and are maintained by the
institution or by a party acting for the institution. Education records are NOT: sole possession records, law enforcement unit records, employment records, medical records, or post-attendance records.

Student education records that are personally identifiable will not be released to a third party without the student’s written consent unless one of the following situations applies:

• To college faculty, staff and administrators with a legitimate educational interest in the information.
• In response to a request for directory information.
• To Federal, State and local education authorities involving an audit, evaluation or compliance with education programs.
• Agents acting on behalf of the college (e.g., National Student Loan Clearinghouse).
• In connection with processing financial aid.
• Accrediting institutions.
• To comply with a judicial order or subpoena.
• In connection with a health or safety emergency if the information will assist in resolving the emergency.

Transcripts
Students may request official academic transcripts through the following methods:

• Online at www.sierracollege.edu/admissions. Standard service requires five to seven business days to process upon receipt of a signed authorization form. The first two transcripts ever requested are free of charge; additional transcripts may be ordered at a cost of $7.00 per transcript. Domestic and international Federal Express service is available at a cost of $18.00-$41.00 per transcript.
• In-person, on-demand transcripts are available immediately at the Rocklin campus for $20.00 per transcript.
• Mail-in transcript requests are processed for a fee of $5.00 per transcript.

Processing times do not include U.S. Postal Service mailing time. For more information on ordering transcripts, please visit the website or contact a campus Admissions & Records Office, (916) 660-7340 or (530) 274-5302.

Unofficial transcripts are available through mySierra, or free of charge at an Admissions & Records Office.

Unit Overload
Students may not enroll in more than 18 units without submitting an overload request. To be granted an overload of up to 20 units, a student must:

1. Have completed 12 or more units with a 3.0 GPA.
2. Not be on probation.
3. Be eligible for ENGL 1A by assessment or satisfactory completion of ENGL A, ESL 30W, or equivalent.
4. Meet the reading proficiency requirement by assessment or satisfactory completion of ENGL 1B, 1C, 11, 50, N; ESL 30R; HIST 35; PHIL 4; or equivalent.

If a student’s GPA is 2.8–2.9 and all other requirements have been met, student must have completed 30 or more college units.

If a student wishes to enroll in more than 20 units, in addition to the above listed requirements, a student must have completed 18 or more units, of which 15 units must have been completed in a single semester. The request will be reviewed for approval by the Dean, Student Services.
Academic Foundations Program
The Academic Foundations Program is a combination of courses and support services that help students succeed in college and beyond. Students build skill level and knowledge in reading, writing, math, ESL, basic computer applications and finding, retrieving and evaluating information. The program provides:

- Placement in appropriate courses through assessment testing;
- Counselors who map out schedules that help students accomplish their goals;
- Courses with a slower pace, more one-on-one time with instructors and more labs and instructional assistants to provide extra help;
- Coordination between instructors and support services staff to provide students with learning disabilities testing, free one-on-one tutoring, drop-in Writing Center assistance and more;
- Instructors who meet periodically throughout the semester for training and discussion in order to help maximize students’ learning; and
- Workshops throughout the semester that help students improve their skills in many different areas.

Students enter the program primarily through assessment testing. After taking the assessment tests, students make an appointment for a one-hour orientation session, followed by a one-on-one appointment with a counselor who helps them enroll in courses suited to their particular skill level.

Even if students assess into higher-level courses, they can still choose to enroll in Academic Foundations courses in order to master concepts and achieve greater academic success across the curriculum.

For more information, call (916) 660-7224. Also, see “Remedial Coursework Limit” in this catalog.

Courses in the program include:

- CIS 1, 30 ..............basic computer skills
- CIS 5, 20 ..............keyboarding and document processing
- CIS 37 .................basic online skills
- ENGL 501, A, N .......writing
- ENGL 560, 570, 50 ......reading
- ESL 500, 510, 520, ......writing, grammar,
- 530, 540. ..............reading, listening
- LRDS 610 ..............learning disabilities assessment
- LIBS 10A, 10B ..........finding information
- MATH 581 ..............arithmetic
- MATH 582 ..............pre-algebra
- MATH A .................basic algebra
- PDEV 1 .................college success
- PDEV 6 .................career and life planning
- PDEV 8 .................introduction to college
Assessment Center
The Assessment Center provides reading, English and mathematics skill assessments. Assessment testing helps to determine skill level and is used to recommend appropriate course placement.

The Assessment Center also clears prerequisites for students who have taken a prerequisite course in high school or at another college. See “Prerequisites, Corequisites and Advisories” in this catalog for further information.

All first-time college students must take the assessment tests which are offered by appointment only. After the application for admission has been processed and the student identification (ID) number has been received, students may schedule an assessment appointment online via mySierra. Students may also call for an appointment:
- Rocklin Campus .......... (916) 660-7430
- Nevada County Campus (530) 274-5303
- Tahoe-Truckee Campus .(530) 550-2225

Students must provide photo identification at the assessment testing appointment. Results are available immediately after testing and are accessible online via mySierra.

Transfer students who have completed assessment at other colleges may send results to the Assessment Center, email to assessment@sierracollege.edu, fax to the Rocklin campus at (916) 630-4513, or fax to the Nevada County campus at (530) 274-5307. Sierra College student ID number and contact information must be included on all submitted documents. Results must be received by the Assessment Center 5 days prior to the student registering for classes.

Sierra College Bookstores
The Sierra College Bookstores are committed to providing the highest quality service to meet the needs of students, faculty, staff and the community of Sierra College.

Textbooks for classes at all campuses may be ordered online at http://whywaitforbooks.com. Sierra College merchandise, including t-shirts, sweatshirts, and Wolverine gift items may also be ordered online. Refund/return policy information is available at any location.

Selling Books: Books may be sold back at any time for up to 50% of the original selling price. The best time to sell is at the end of each semester when the bookstore purchases textbooks for the upcoming term. A Sierra College Student Body ID is required. No receipt is necessary and it doesn’t matter where the books were purchased. Instructor and international editions cannot be sold.

Rocklin Campus Bookstore hours and information:
Monday—Thursday, 7:30 a.m.–6:30 p.m., Friday, 7:30 a.m.–2:00 p.m. Extended hours—first and last week of each semester; check the website for current hours. For further information call (916) 660-8200.

Nevada County Campus Bookstore hours and information:
Monday—Thursday, 9:00 a.m.–1:00 p.m., 2:00 p.m.–6:30 p.m. Extended hours—first and last week of each semester; check the website for current hours. For further information call (530) 274-5305.

Tahoe-Truckee Campus Bookstore Services: Books for Tahoe-Truckee classes are available at the Rocklin Campus Bookstore or can be ordered online. Each semester the bookstore offers a free delivery day at the Tahoe-Truckee campus for students who ordered textbooks from the bookstore’s website. At the end of each semester, bookstore staff buy books from students at the Tahoe-Truckee campus. See the website for free delivery day and book buy back dates and times. For further information call (916) 660-8200.

Cafeteria/Campus Dining
The Rocklin Campus Cafeteria is housed in the Campus Center. Hot and cold food service available in the cafeteria includes: deli bar, grill, pizza and a coffee bar. Hours are subject to change; see the website for current hours.

The Nevada County Campus Cafeteria, located in the “C” building, provides a variety of food services Monday through Thursday, including vending machines.

CalWORKs
The CalWORKs program provides support services focused on helping Temporary Assistance for Needy Families (TANF)/cash aid recipient students obtain the necessary education and skills to begin and enhance their career growth and achieve long-term economic self-sufficiency. The program provides eligible students with counseling, work study opportunities for on-campus employment, assistance with campus services and referrals to public and private agencies as needed. The CalWORKs program objective is to assist students in achieving their educational and
often as part of their regular study time and to take advantage of the materials and activities available to them. Members of the community who wish to use the computerized career information systems may access these resources for a fee. For additional information about Career Connections, email careerconnections@sierracollege.edu, call (916) 660-7481 for the Rocklin Campus, call (530) 274-5303 for the Nevada County Campus, or visit www.sierracollege.edu/careerconnections.

Sierra College Child Development Services
Sierra College offers several child development programs for students and the nearby community. The Sierra College Child Development Centers serve as teacher training lab sites for Sierra College students pursuing careers working with children and families. Students are supervised by staff and faculty. All programs are staffed by certificated, nurturing teachers who view learning as an active process where children learn best and gain self-confidence when ample opportunities exist for direct hands-on experiences and decision making in a planned “play” oriented curriculum.

Sierra College offers State Preschool Programs at no cost to income eligible families. State Preschool serves 3 to 5 year olds and operates two sessions on the Rocklin campus, as well as two at Rock Creek Elementary in Auburn, and one at Cirby Elementary School in Roseville. State Preschool sites operate a three-hour morning and a three-hour afternoon session.

During the school year, the Nevada County Campus Child Development Center operates a Head Start/State Preschool program as well as a fee-based program for preschoolers, ages 3 through 5. In addition, a full year Early Head Start Toddler program enrolls children, ages 18 - 36 months. The Little Orchard Preschool on the Rocklin Campus is a private fee-based year-round program. It is open from 7:00 a.m. to 6:00 p.m. Monday through Friday. The program is designed for children from 2 to 5 years of age. Enrollment is determined on a first-come, first-served basis, serving the community and children of Sierra College students and staff. The center also offers preschool sessions.

For hours of operation and further information, contact the individual sites:
Sierra College Child Development Center,
Rocklin Campus State Preschool, (916) 660-8240
Nevada County Campus Child Development Center,
Grass Valley, (530) 274-5350
Cirby State Preschool, Roseville, (916) 783-0776
Rock Creek State Preschool, Auburn, (530) 823-0380
Little Orchard Preschool, Rocklin Campus,
(916) 624-3553

Cooperative Agencies Resources for Education (CARE)
The CARE program provides services for those EOPS students who are single heads of household, receiving
CalWORKs cash aid, and have at least one child under the age of fourteen. Students may also be eligible if a dependent child in the family receives CalWORKs cash aid.

CARE students may receive, in addition to the services provided to EOPS students, an additional financial aid grant to be used for educationally related expenses such as child care, textbooks/school supplies, and transportation. Contact the Rocklin EOPS office at (916) 660-7366, or the Nevada County EOPS office at (530) 274-5306 for further information and application assistance.

Counseling Services
Sierra College counselors provide academic advising, career and personal counseling to students and prospective students. Typical areas of concern to students are choosing majors or careers that are appropriate to their interests, abilities and values; coping with personal problems that may be causing stress and selecting courses in the proper sequence to meet requirements and educational goals. Counselors also teach classes designed to facilitate personal growth, college success and career exploration. See the Personal Development department in this catalog. In-person counseling is available by appointment and on a drop-in basis at each of the following locations. For appointment information call:
- Rocklin Campus (916) 660-7400
- Nevada County Campus (530) 274-5303
- Tahoe-Truckee Campus (530) 550-2225

Online counseling services are available through the online counseling center on the website.

Disabled Students Programs & Services
Additional support services are available to disabled students to ensure an equal opportunity to participate in the educational process at Sierra College. The goal is to help psychologically, physically and learning disabled persons achieve their educational objectives through counseling and other appropriate services.

For the Rocklin Campus or Roseville Gateway Center, call (916) 660-7460.
For the Nevada County Campus or Tahoe-Truckee Campus, call (530) 274-5330.

Distance Learning
Online, Television and Hybrid Courses
Distance learning courses are full-credit courses which allow students to complete college studies from the convenience of their own home. These courses are especially appealing to students with busy schedules who have a difficult time coming to campus on a regular basis. Online courses may be accessed from anywhere at anytime through an Internet connection. Instructors typically distribute course content on a weekly basis and require students to maintain a high level of interaction throughout the course. Television courses are broadcast live from the Rocklin Campus Library and are distributed to cable companies within the District, streamed live on the Internet, and archived for two weeks on our iTunes U site. Students are able to interact with their professor during the live class via telephone. Hybrid courses, which are a combination of online and on-ground formats, are also offered.

Distance learning support and test proctoring are located in the Learning Resource Center on the Rocklin and Nevada County campuses, and in the library on the Tahoe-Truckee campus. For more information, go to http://lrc.sierracollege.edu/dl.

Extended Opportunity Programs and Services (EOPS)
EOPS is a student success program that provides access to a college education and assistance with reaching an educational/career goal for those individuals affected by language, economic and social disadvantages. Eligible students may receive academic, career and personal counseling, specialized orientation, free tutoring, financial aid, guidance, priority registration, help with the cost of books, transportation assistance, cafeteria meal cards and other services designed to support the student to stay in school and achieve their goals.
Students must meet certain income and educationally disadvantaged criteria to receive services. Contact the Rocklin EOPS office at (916) 660-7366 or the Nevada County EOPS office at (530) 274-5306 for further information and application assistance.

Health Services
Sierra College Health Centers offer a wide variety of services. Nurse practitioners, mental health counselors and a physician staff the clinics. Students are encouraged to utilize these services, which include:
- Education about healthy living and disease prevention
- Evaluation and treatment of students, who are ill, injured or need family planning
- Referrals to on-campus and community resources
- Laboratory testing
- Mental health counseling
- Immunizations
- Some prescriptions at reduced cost.

Students must be registered in and actively attending classes to be eligible for services at a health center.

The Rocklin Campus Health Services Clinic is located in the Winstead Center. For further information call (916) 660-7490.

The Nevada County Campus Health Services Clinic is located in N3-101. For further information call (530) 274-5317.

Housing
Sierra College is one of the few community colleges in California that offers the unique experience of residence hall community living. North Hall is a two-story co-ed residence hall. A total of 121 students live in double occupancy rooms; two double rooms share a bathroom. Facilities that are available for residents include a large recreation room, kitchenette and laundry room. Basic utilities are included as well as a meal plan for use in the cafeteria.

In-room telephones are each student’s responsibility. Since campus housing is limited, applications should be filed as early as possible. Campus housing applications and information may be obtained by calling the Housing Office at (916) 660-7389 or online at www.sierracollege.edu/housing. The Housing Office is located in the Z Building.

Student On-Campus Job Center
The Financial Aid office at the Rocklin Campus and at the Nevada County Campus assist currently enrolled Sierra College students in obtaining part-time jobs on campus.

Currently, the college offers three on-campus employment programs. These are:
- **Federal Work Study**—Students must qualify under Federal guidelines by completing the FAFSA.
- **District Student Help**—This program is to assist students who do not qualify for Federal Work Study. Students must be enrolled in at least six units and maintain a 2.0 GPA.
- **CalWORKs Work Study**—Students must be currently receiving TANF or CalWORKs Assistance.

All programs pay on the Temporary Employee wage scale. Each program has special enrollment and academic requirements.

For further information regarding these programs, contact the Rocklin Financial Aid office at (916) 660-7317 or the Nevada County Campus at (530) 274-5346.

Learning Disabilities Program
The Learning Opportunities Center
Sierra College offers a strong support program for students with verified learning disabilities. Services are provided to assist students in developing the skills they need to meet the academic demands of college and benefit fully from their educational experience.

A learning disability affects the information processing systems of individuals with average or above intelligence. This interference may affect intake, retention, retrieval, or expression of information. Students are evaluated individually through the LRDS 610 assessment course. The following support services are then provided for eligible students:
- Individual education plans
- Perceptual Development Program
- Test taking facilitation
- Compensatory learning strategies
- Computer Assisted Instruction
- Accommodations as needed
- Priority registration

Sierra College is committed to supporting learning disabled students in reaching their academic or vocational goals. For further information regarding this program please call the Rocklin Campus at (916) 660-7450, or the Nevada County Campus at (530) 274-5330.

Library/Learning Resource Center
The Rocklin Campus Library occupies a 68,000 square foot building, with seating for more than 600. Reference and research information can be obtained electronically through EBSCOhost, JSTOR and other full-text electronic products, including a growing eBook collection.

The open-stack book collection contains more than 113,000 volumes, and print subscriptions to over 140 periodicals are maintained. The College also has access to over 20,000 electronic books which can be viewed at any time from students’ homes. The online research databases contain more than 7,000 full-text magazines, journals and newspapers, including many years of back files. An online catalog provides records for the collections at the Nevada County, Tahoe-Truckee, and Rocklin campuses. A media laboratory is available for use by all members of the campus community. The media collection contains both videos and DVDs; most are captioned.

An open access computer laboratory is available to registered students. On the ground floor of the Rocklin Campus
Parking and Security Services
The District Parking & Security Services Office is located in room U-13 on the Rocklin Campus. Parking & Security Services at the Nevada County Campus is located in the N1 Building. Security Officers are responsible for enforcing parking regulations, responding to emergencies, locking/unlocking facilities, providing public assistance, and providing security escorts. Information regarding security policies and campus crime statistics, as required by the Clery Act, is available online at www.sierracollege.edu.

Dial 911 for an emergency, or dial extension 7120 for a non-emergency, from any of the help phones located throughout the Rocklin and Nevada County campuses. To contact the Rocklin office from non-campus phones, dial (916) 660-7120. The Nevada County Campus Parking & Security Services office may be reached at (530) 274-5323.

Transfer Services
Transfer services are provided through Career & Transfer Connections in the Winstead Center at the Rocklin campus. Resources and services are available to all students. Transfer Services facilitates the transition from Sierra College to a baccalaureate college or university. Services are designed to reduce the complexity of transferring by using articulation and transfer agreements, transfer workshops, career and major preparation workshops, and transfer college fairs.

Admission counselors from local universities, such as CSU Sacramento and UC Davis, visit the Rocklin campus regularly to meet individually with students and provide information about admission, specific majors, general education requirements and transfer procedures. Additional university admission advising may be available via online or phone appointments.

Career & Transfer Connections maintains electronic catalog information for California public and private schools, and out-of-state universities.

Sierra College has Transfer Admission Guarantee (TAG) programs with UC Davis, UC Irvine, UC Merced, UC Riverside, UC San Diego, UC Santa Barbara, and UC Santa Cruz. Meeting eligibility requirements for a TAG necessitates careful course planning. Students who are considering transfer to the University of California are advised to meet regularly with a Sierra College counselor for advisement.

For information about transfer, contact Career & Transfer Connections at the Rocklin campus at (916) 660-7481 or email transferservices@sierracollege.edu. For information about transfer at the Nevada County Campus call (530) 274-5303.

Tutorial Services
The Learning Center provides students with the academic support needed to achieve success. Students determine their need for tutoring and a professor or counselor recommends that the student seek tutorial assistance. Free tutorial services are provided to Sierra students if they are
enrolled in the course(s) for which a tutor is requested.
Students do not need to be failing a course to receive tutorial assistance; in fact, students very often seek tutor assistance to maintain understanding or to further expand their information base.

Students who have received grades of A or B in various subjects are encouraged to inquire as to the possibility of becoming paid tutors.

For further information, contact the Rocklin Campus Learning Center at (916) 660-7220, Learning Resource Center, Room 444; or the Nevada County Campus Learning Center at (530) 274-5308, Room N2-202, or see our website at www.sierracollege.edu.

Veterans Services

The Sierra College Veterans Services Office provides assistance to veterans and their dependents who are eligible for various educational benefits. The Sierra College Veterans Services Office is located at the Rocklin campus, Building L. The phone number is (916) 660-7470.

Students receiving GI Bill benefits are subject to the following general policies and requirements:
• Completion of the Matriculation process, which includes assessment in reading, English and mathematics, attending orientation and meeting with the Sierra College Veterans Counselor. New students must complete these requirements before the start of their first semester.
• Official transcripts from all prior colleges, universities and training institutes must be submitted to the Sierra College Veterans Services Office.
• All prior college work must be evaluated for prior credit reporting. For this reason, it is best to order transcripts from previous colleges as early as possible.
• A veteran’s educational goal/objective must be declared upon application for VA educational benefits.
• Each program change requires an appointment with the Veterans Counselor to obtain an education plan.
• Academic progress toward the stated degree objective must be satisfactory. For details, see the Probation and Dismissal sections of this catalog. Failure to maintain a 2.0 GPA may result in termination of benefits.
• Adds, drops, changes of address, etc., must be reported to the Veterans Services Office.

Veteran Dependent Exemption: Those children and spouses of U.S. veterans with service connected disabilities or U.S. veterans who died in service or from service-connected disabilities may be eligible for a college fee waiver. For more information contact your county Veterans Services Office or the California Department of Veterans Affairs.

Writing Center

The Sierra College Writing Centers provide students with professional support and guidance in all writing projects, regardless of course level or assignment complexity. Students may come to the Writing Center, Learning Resource Center, Room 424, at the Rocklin Campus, or Room N2-202 at the Nevada County Campus, for these services.

The Writing Center staff is committed to helping all students complete writing assignments successfully and on time, regardless of the student’s academic preparation or language background. For further information, call (916) 660-8093 or (530) 274-5265.
Sierra College’s Financial Aid programs stem from a belief that student aid services should facilitate and foster the successful academic participation of financially needy students. As part of the commitment to help students have a positive college experience, the Financial Aid Office provides this information to help students better understand their relationship with financial aid.

State and federal regulations allow community colleges participating in financial aid programs discretion when establishing college specific policies and procedures. It is the goal of the Financial Aid Office to provide students with the most current policy information affecting their financial aid while at Sierra College. As new state or federal regulations take effect or college practices evolve, this policy will be updated and posted on the website.

The main Financial Aid Office is located at the Rocklin Campus; for information call (916) 660-7310. For assistance at the Nevada County Campus, call (530) 274-5346.

**Application Process**

To apply for financial aid, all students must complete a Free Application for Federal Student Aid (FAFSA). The FAFSA uses federal formulas to establish financial need. Sierra College’s Federal School Code is 001290.

**Who Should Apply:** Any student who plans to attend Sierra College and is either a citizen or an eligible non-citizen of the United States may apply for financial aid. All financial aid recipients must maintain the Financial Aid Satisfactory Academic Progress standards of the College.

**Priority Dates:** Financial aid funds are limited. Therefore, Sierra College has established a priority filing date of March 2. Students whose FAFSAs are completed by this date are considered for all financial aid programs available at Sierra College. Those filed after March 2 will typically only be considered for a Pell Grant and/or a Direct Student Loan. The FAFSA should be filed as soon as possible to assure availability of funds when registration fees are due.
**Financial Aid Satisfactory Academic Progress**

Federal regulations require that all financial aid recipients make financial aid satisfactory academic progress and remain in good academic standing. At Sierra College, academic progress is reviewed at the end of each semester. Students who do not complete any units in the semester will be terminated from financial aid as soon as grades are available.

**Determining Enrollment Status:** Prior to each financial aid disbursement, the Financial Aid Office verifies the number of units in which students are enrolled. For fall 2013, students must be enrolled in all units by September 8, 2103. For spring 2014, students must be enrolled in all units by February 9, 2014.

Enrollment status is defined as the number of units in which a student is enrolled at the final disbursement for the semester. Completed units mean that credit was received for the enrolled classes. Classes in which a student receives an “F,” “I,” “NP,” “MW,” or “W” are not counted as completed units for satisfactory academic progress, but are counted as units attempted.

To be considered as making satisfactory progress, students must complete 75% of all enrolled courses with a 2.0 cumulative GPA. The following number of units are required based on enrollment status.

<table>
<thead>
<tr>
<th>Enrollment Status</th>
<th>Required Unit Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time (12+ units)</td>
<td>at least 9 units</td>
</tr>
<tr>
<td>3/4 time (9–11.5 units)</td>
<td>at least 8 units</td>
</tr>
<tr>
<td>1/2 time (6–8.5 units)</td>
<td>at least 6 units</td>
</tr>
<tr>
<td>Less than 1/2 time (0.5–5.5 units)</td>
<td>all enrolled units</td>
</tr>
</tbody>
</table>

Units earned through credit by examination are not counted for financial aid purposes.

**Maximum Time Length and 90 Unit Limitation:** Federal regulations allow students to receive aid for 150% of the published length of an undergraduate program. Because students can earn a degree by completing 60 units, students may receive aid for a maximum of 90 units, including accepted transfer units. Up to 30 units of remedial coursework and all ESL coursework are deducted. Students terminated from financial aid due to the 90 unit limit may appeal to the Financial Aid Advisory Committee (FAAC).

**Repeated Coursework:** Repeated coursework that falls under the following conditions cannot be included in enrollment status for Title IV Federal Aid eligibility:

- Repeating a previously passed course more than twice. A grade of D or better is considered passing.
- Repeating a previously passed course due to failing other coursework.

**Remedial (including ESL) Coursework:** Remedial and ESL courses are considered the same as credit courses for tuition, full-time academic standing, and SAP, and are included in the 75% completion requirement. Financial aid may be paid for a maximum of 30 remedial units.
Transfer Units: It is the student’s responsibility to request transcripts from previously attended institutions if choosing to apply any units toward the current educational objective. Upon the student’s request, transcripts from regionally accredited colleges will be evaluated and all units applicable to the current educational objective will be counted when calculating the maximum time length for financial aid. All units attempted, even if earned before the student was receiving financial aid will be considered toward the maximum time length.

Definitions

Good: Students are considered in good standing if they complete at least 75% of all enrolled units and earn a 2.0 GPA or higher for the semester.

Warning: Students are placed on warning status if they complete less than 75% of all enrolled units for the semester, but complete at least .5 unit. Students are removed from warning at the end of the next semester if they complete at least 75% of their units with a 2.0 GPA.

Termination: Students are terminated if they complete zero units or if they were on warning from a previous semester and then completed less than 75% of the courses for which aid was provided or if their cumulative GPA was less than 2.0.

Probation: Students are placed on probation if they receive an approved reinstatement petition. Students may continue on probation if their cumulative GPA is below 2.0 but their term GPA is above 2.0. This is considered making progress term-by-term. Students may be removed from probation if they complete at least 75% of their units and achieve a cumulative GPA of 2.0. Students placed on financial aid probation are not eligible for student loans.

Reinstatement: Students may reinstate by completing a semester of at least six units with at least a 2.0 term GPA. Students must notify the Financial Aid Office when grades are posted.

75% Completion Rate: Students must pass at least 75% of their coursework each semester.

Financial Aid Termination: Students exceeding their maximum time length (90 attempted units), not completing the required number of units, or earning a cumulative grade point average of less than 2.0 will be terminated from financial aid. Students terminated because of insufficient units completed or a GPA deficiency will not receive further financial aid until they have filed and received an approved Reinstatement Petition.

Appeal Procedures: Any student who has been terminated from financial aid may submit a written appeal to the Financial Aid Advisory Committee (FAAC). Appeals are reviewed and approved or denied based on individual circumstances and the student’s proposed course of action. If approved, financial aid may only be provided for courses listed on the Student Education Plan.

Students reaching the maximum time length of 90 units attempted may submit a written appeal to the FAAC. If approved, financial aid will be given for a specific length of time.

Financial Aid Disbursement

All financial aid is disbursed to students through the Bursar’s Office. Financial aid funds will first be used to satisfy any student debt owed to Sierra College. Any remaining balance goes directly to the student by the disbursement method selected by the student (debit card, direct deposit, or paper check). Debit cards and checks are sent to the mailing address on file with Admissions and Records.

The first disbursement of financial aid (grants, federal student loans, and scholarships) to eligible students is the week following the add/drop period. For the fall and spring semesters, this is the end of the third week of the semester. For students who apply or complete their files after the third week, financial aid is usually ordered once a week. Orders are processed Monday mornings and direct deposit is normally completed by Friday evening of the same week. Allow additional time for new debit cards and paper checks to be received in the mail.

Pell Grants must be paid at the level of units in which students are enrolled at the end of the add/drop period for the semester. Students adding a class after the add/drop deadline will not receive Pell funds for the additional units.

Federal Direct Student Loans are issued in two disbursements. If a student loan covers fall and spring, the second disbursement will be available the third week of the spring semester, as long as the student is eligible and enrolled in 6 or more units. If the student loan covers only one semester, the second disbursement will be available after the withdrawal deadline has passed, as long as the student is still enrolled in 6 or more units.

Students who are first-time, first-year borrowers must wait until 30 days after the semester has begun to receive their first disbursement.

Scholarships are issued in two disbursements; half for fall and half for spring.

Selective Service

All males under the age of 26 must register with the Selective Service. Failure to do so may jeopardize students’ eligibility for federal financial aid.
Associated Students of Sierra College
All students become members of the Associated Student Body upon enrolling at Sierra College and are guaranteed equal and unbiased representation by the elected representatives of the Student Senate.

Student Government
Student activities at Sierra College are managed by the Associated Students of Sierra College (ASSC). The officers of the ASSC constitute the Student Senate and represent the Associated Students in promoting student activities and clubs and provide student representation. The ASSC also participates in decisions affecting students and promotes understanding and cooperation between the students, the Board of Trustees and the faculty and administrators of Sierra College. The elected officials consist of President, Vice-President, Treasurer, Chief of Staff, Public Relations Officer, Programs Director, Campus Liaison and twelve Student Senators. Students at the Nevada County Campus also have an opportunity to serve on the Student Senate. All students are encouraged to participate in student government while at Sierra College. The student government office for the Rocklin Campus is located in the J Building, next to the Campus Center. For information at the Nevada County Campus, contact the Campus Life Office at (916) 660-7380. All students are invited to attend Student Senate meetings.

Athletics
Sierra College supports opportunities for student athletes to continue their pursuit of individual goals academically and athletically by providing a quality program of intercollegiate competition for men and women. Wolverine teams compete in the following:

- **Men’s Sports**—baseball, basketball, football, golf, swimming, tennis, water polo and wrestling
- **Women’s Sports**—basketball, golf, soccer, softball, swimming, tennis, volleyball and water polo

Sierra College is a member of the California Community College Athletic Association and competes in the Big 8 Conference and the Northern California Football Association’s Valley Conference. Other members of the Big 8 Conference include American River, Cosumnes River, Diablo Valley, Modesto, Sacramento City, San Joaquin Delta and Santa Rosa. Other football teams competing in the Valley Conference include College of the Sequoias, Fresno City, Reedley, San Joaquin Delta and West Hills.

Any student interested in participating should check with the various coaches or the athletic director regarding special rules covering residence, number of units carried, transfers, etc. For information, call (916) 660-8100.

Honor Society
Sierra College students who have completed 12 units of degree applicable credit at Sierra College with a 3.5 GPA are eligible to join the college’s Beta Mu Zeta chapter of Phi Theta Kappa International Honor Society of the Two Year College. The purpose of Phi Theta Kappa is to recognize and encourage scholarship among two-year college students. Phi Theta Kappa provides opportunities for the development of leadership and service, for an intellectual climate for exchange of ideas and ideals, for lively fellowship for scholars and eligibility to apply for Phi Theta Kappa Transfer Scholarships. For additional information, contact Tim Haenny, Campus Life Coordinator, or visit www.sierracollege.edu/programs/honors.htm.
Associate in Arts/Associate in Science Degrees

Students planning to graduate with an Associate in Arts (AA) or an Associate in Science (AS) degree must:

1. Complete major requirements with grades of "C" or better.
2. Complete a minimum of 60 degree-applicable semester units, 12 of which must be completed at Sierra College. (Units received through Credit by Examination do not count toward this requirement.)
3. Earn a minimum grade point average of at least 2.0 in all degree-applicable coursework.
4. Complete one of the following three general education patterns:
   a. Associate Degree Requirements (pages 44-45),
   b. California State University General Education Breadth Requirements (CSU GE) (pages 50-51), or

Associate in Arts for Transfer/Associate in Science for Transfer Degrees

The following requirements apply for AA-T or AS-T degrees:

1. Completion of major requirements with grades of "C" or better.
2. Completion of 60 CSU-transferable semester units, 12 of which must be completed at Sierra College. (Units received through Credit by Examination do not count toward the 12-unit residency requirement.)
3. A minimum grade point average (GPA) of at least 2.0 in all CSU-transferable coursework. While a minimum of 2.0 is required for admission, some majors may require a higher GPA.
4. Certified completion of either the California State University General Education Breadth Requirements (CSU GE) (pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC) (page 52-53).

Certificates of Achievement

A Certificate of Achievement is designed to demonstrate that a student has completed coursework and developed capabilities relating to career or general education. Certificates of Achievement require a minimum of 18 units. Students must:

1. Earn grades of "C" or better in all required courses.
2. Complete at least 50% of the required coursework at Sierra College. (Units received through Credit by Examination do not count toward this requirement.) Certificates of Achievement are recorded on student transcripts.

Gainful Employment Disclosure Information: The U.S. Department of Education requires colleges to disclose certain information about Title IV eligible certificate of achievement programs that “prepare students for gainful employment in a recognized occupation.” The information is intended to assist current and prospective students as they make career and educational choices. Specific information for each certificate program is located at www.sierracollege.edu/gainfulemployment.

Skills Certificates

A Skills Certificate is an acknowledgement that a student has attained a specified set of competencies within a career and technical education program, either in preparation to enter the field or upgrade of skills required for continued employment. Skills Certificates require a minimum of 6 units and a maximum of 17.5 units. Students must:

1. Earn grades of “C” or better in all required courses.
2. Complete at least 50% of the required coursework at Sierra College. (Units received through Credit by Examination do not count toward this requirement.) Skills certificates are not recorded on student transcripts.

Catalog Rights

To fulfill Sierra College degree and certificate requirements, students may choose the catalog in force either upon their entry or exit from Sierra College, whichever is in the best interest of the student. Students who are pursuing a major developed for the first time during their attendance at Sierra College may also choose the catalog in force the first year the major was offered.

To maintain the above listed catalog rights, students must be enrolled in at least one semester or session per calendar year. Enrollment is defined as a Sierra College academic record showing a final grade or non-evaluative symbol (A, B, C, D, F, W, MW, P, NP, or I).

When a student breaks enrollment at Sierra College for a full calendar year without receiving a degree or certificate, the student will be required to meet the catalog requirements in force upon the student’s return enrollment or the catalog in force at the time the degree or certificate is granted.
Students beginning enrollment at Sierra College during the summer have entry catalog rights for the prior academic year, not the upcoming academic year.

Regardless of catalog rights, a course may be used to satisfy a general education requirement if it was approved for the general education area at the time the course was successfully completed and the course complies with Title 5 regulations.

Catalog rights do not apply to entrance requirements for programs (e.g., Nursing).

**General Education Reciprocity**

Title 5 outlines and defines general education subject areas that each California Community College must include. As many students attend more than one college, and the courses that are locally approved for a particular GE area vary among colleges, Sierra College grants reciprocity for all lower-division general education designated courses completed at California Community Colleges, California State Universities, and University of California campuses, provided the courses comply with Title 5 regulations.

**Associate Degree for Transfer Reciprocity**

For AA-T and AS-T degrees, reciprocity will be granted for those courses taken at other California community colleges in Transfer Model Curriculum (TMC) aligned degrees, provided that the transfer courses appear in the same specific area in the major pattern. The flexibility to move courses between areas is dependent upon the parameters defined in the individual TMC. TMC templates are maintained on the California Community Colleges Chancellor’s Office website. If there are any questions about course applicability, the discipline faculty must make the determination.

**Double-Counting**

Sierra College encourages double-counting, which is the practice of allowing students to use a course to satisfy both a general education requirement and a major requirement. While a course may be listed in multiple general education areas, it may only be used to satisfy one general education requirement.

**Honor Graduates**

Upon graduation, students are recognized with honors when they have completed all degree-applicable credit courses with a cumulative grade point average of 3.5 or better. Other lower-division college coursework posted to the Sierra College transcript is included in this GPA calculation.

**Degree and Certificate Petitions**

Students desiring an associate degree or certificate must file a petition with a campus Admissions & Records Office by the following semester deadlines:

- December 2013 ................. October 1, 2013
- May or August 2014 .............. March 3, 2014

Students requesting a duplicate diploma must submit a $10.00 fee per diploma. Students requesting a duplicate certificate must submit a $5.00 fee per certificate.
I. General Education Breadth Requirements

A. Natural Sciences (For an A.S. degree: must complete a laboratory science. Laboratory courses are underlined.)

| Life Sciences: Agriculture 156, 163, 198, 200; Anthropology 1, 1/1L, 10; Astronomy 7; Biological Sciences 1, 2, 3, 4, 5, 6, 7A/7B, 8A/8B, 10, 11, 14, 15, 21, 22, 24, 33, 35, 36, 44, 55, 56, 56/56L; Environmental Studies & Sustainability 1, 6, 10; Psychology 140, 140/140L. |
| Physical Sciences: Agriculture 221; Astronomy 2, 2/11, 5, 5/11, 5/14, 7, 10, 10/11, 10/14, 25; Chemistry 1A, 1B, 2A, 2B, 3A, 3B; Earth Science 1, 1/1L, 2, 3, 3/3L, 6, 7, 10, 10/10L, 14, 15, 15/15L; Environmental Studies & Sustainability 1, 6, 7, 10; Geography 1, 1/1L, 4; Mathematics 30; Mechatronics 1; Physics 10, 10/11, 105, 105/105L, 110, 110/110L, 205, 205/205L, 210, 210/210L, 215, 215/215L. |

B. Social and Behavioral Sciences

Behavioral Sciences:

- Anthropology 2, 4, 5, 6, 9, 12, 14, 27; Communication Studies 1, 3, 5, 7, 8, 10, 15, 21;
- Environmental Studies & Sustainability 1; Geography 3; Human Development & Family 1, 4, 9, 21, 22, 25; Humanities 3;
- Journalism 20A; Nutrition & Food Science 10, 14; Psychology 100, 103, 104, 105, 106, 107, 108, 110, 127, 130, 150, 160, 170; Social Science 10, 13; Sociology 1, 2, 3, 4, 5, 20, 24.

Social Sciences:

- Administration of Justice 50; Agriculture 196, 198, 215; Business 49; Economics 1A, 1B; Fashion 15;
- Geography 2, 3, 5; History 4A, 4B, 17A, 17B, 18A, 18B, 19A, 19B, 20, 21, 22, 23, 24, 27, 35, 50, 51; Political Science 1, 2, 3, 4, 7, 9, 12, 16, 27; Psychology 170; Social Science 20, 25, 30, 35, 40, 50; Sociology 10, 27; Women & Gender Studies 1, 4.

C. Humanities

Fine Arts:


Literature and Language:

- Applied Art & Design 12; Communication Studies 10, 12; Deaf Studies 1, 2, 3, 4; Drama 21;
- English 1B, 24, 27, 29, 30A, 30B, 32, 33, 34, 35, 37, 38, 40, 41, 42, 44, 45, 46A, 46B, 47A, 47B, 48; French 1, 2, 3, 4;
- German 1, 2; History 4A, 4B; Human Development & Family 44; Humanities 5, 10, 15, 17, 20, 21, 26; Italian 1, 2, 3;
- Japanese 1, 2; Philosophy 2, 4, 6, 10, 13, 15, 20, 21, 27, 30, 50, 60, 65; Social Science 50; Spanish 1, 2, 3, 4, 15, 16, 17.

D. Language and Rationality

1. English Composition: English 1A, 2, 12, English as a Second Language 40W. (completion with a grade of “C” or better)

2. Communication and Analytical Thinking: Business 85; Communication Studies 1, 2, 3, 5, 7, 8, 10, 21; Computer Science 10; English 1B, 1C, 11, 24; History 35; Journalism 20A; Mathematics B, D, 8, 10, 12, 13, 15, 16A, 16B, 17, 18, 20, 24, 29, 30, 31, 32, 33, 42; Philosophy 4, 12; Psychology 105, 142; Sociology 15.

E. Health Education/Physical Education

- Administration of Justice 60; Health Education 1, 2, 10; Health Sciences 2, 7, 20; Human Development & Family 61; Nursing Assistant 3; Nutrition & Food Science 5, 10, 13, 14; Personal Development 70; Physical Education 3A, 3B, 5A, 5B, 6, 7, 8, 9, 10, 11, 13, 14, 16, 17, 19, 22, 23, 26, 27A, 27B, 29, 30, 32, 35, 36, 39, 42, 51B, 51C, 51D, 53, 54, 55, 56A, 56B, 57, 59, 64, 65, 66, 68, 69, 71, 72, 73, 74, 75, 80, 81, 83, 84, 85, 87, 88, 93, 94, 200; Psychology 130, 150; Recreation Management 70, 71, 72; Sociology 5.

continued on next page
F. Multicultural Studies

| Anthropology 2, 4, 7, 9, 14, 27; Art 1D, 1E, 1F, 1G; Business 55; Communication Studies 7, 10; Deaf Studies 3, 4, 10; English 24, 27, 47A, 47B; French 3, 4; Geography 2, 3, 5; History 17A, 17B, 18A, 18B, 19A, 19B, 20, 21, 23, 24, 27, 50, 51; Human Development & Family 25; Humanities 3, 9, 10, 11, 26, 27; Italian 3; Japanese 1, 2; Music 11; Philosophy 13,15, 27; Political Science 7, 9, 27; Psychology 103, 127; Registered Nursing 24; Social Science 10, 13, 20, 25, 30, 35, 40, 50; Sociology 3, 10, 27; Spanish 3, 4; Women & Gender Studies 1, 2, 3, 4. | 3 |

II. Learning Skills

Courses used to fulfill learning skills requirements may also be used to satisfy major and/or general education requirements.

A. Writing: Completion of one of the following courses with grade of “C” or better:

| English 1A, 2, 12; English as a Second Language 40W. | 0 |

B. Reading: Demonstrated proficiency by ONE of the following:

| 1. Completion of one of the following courses with grade of “C” or better: English 1B, 1C, 11, 50, N; English as a Second Language 30R; History 35; Philosophy 4; OR |
| Possession of either a bachelor or higher degree from a U.S. regionally accredited institution; OR |
| *Satisfactory score on exam (no college units granted). | degree, exam or course (0–6) |

C. Oral Communications: Demonstrated proficiency by ONE of the following:

| 1. Completion of one of the following courses with grade of “C” or better: Business 85, 102; Communication Studies 1, 2, 3, 5, 8; Drama 10A, 10B; English as a Second Language 40L; Personal Development 9; OR |
| *Written petition certifying acceptable experience and an oral performance to demonstrate proficiency (no college units granted). | petition or course (0–3) |

D. Mathematics: Demonstrated proficiency by ONE of the following:

| 1. Completion of one of the following courses with grade of “C” or better: Mathematics B; Mathematics D or higher; Psychology 142; Sociology 15; OR |
| *Completion of one year (or block schedule equivalent) of Algebra II or Integrated Mathematics III or higher level mathematics in high school with grades of “C” or better (no college units granted); OR |
| *Minimum score on ACT of 25 or SAT of 560 (no college units granted). | exam or course (0–6) |

TOTAL GENERAL EDUCATION AND LEARNING SKILLS UNITS ............................................... 20–35

III. Major

Minimum of 18 units in a group of courses described in the catalog. Courses must be completed with grades of “C” or better. ........... 18-44

IV. Electives

Any additional degree-applicable credit courses. ............................................................................ 0-22

GRADE POINT AVERAGE: cumulative GPA of 2.0 or better in all degree-applicable coursework

TOTAL DEGREE-APPLICABLE UNITS REQUIRED FOR A.A. or A.S. DEGREE

(At least 12 of the 60 degree-applicable units must be completed at Sierra College.
Units received through Credit by Examination do not count toward this requirement.) ................................. 60

*See Counselor for details.

Notes:
1. Credit for only one course from English A, N, 50, 50L, or 60 may be applied toward the degree.
2. See page 42 for Catalog Rights.
3. The associate degree general education pattern does not meet transfer general education requirements.
4. Students pursuing an AA-T or AS-T are required to complete the CSU General Education Breadth or IGETC pattern.
5. While a course might satisfy more than one general education breadth requirement (Areas A–F), it may not be counted more than once for these purposes.
6. A course may be used to satisfy both a general education breadth requirement and a major requirement.
7. Students may check their degree status using DegreeWorks; access is through the Academic Tools tab on mySierra.
ASSOCIATE DEGREES

Administration of Justice
  (a) Law Enforcement: AA, AS
  (b) Courts: AA, AS
  (c) Corrections: AA, AS

Agriculture
  (a) Sustainable Agriculture: AS

Applied Art & Design
  (a) Graphic Design: AA, AS
  (b) Illustration: AA, AS
  (c) Multimedia: AA, AS

Art
  (a) Art History: AA
  (b) Studio Art: AA

Automotive Analysis: AA, AS

Biological Sciences
  (a) Biological Sciences: AS
  (b) Watershed Ecology: AS

Business
  (a) Accounting: AA, AS
  (b) Administrative Professional: AA, AS
  (c) Business Administration: AA, AS
  (d) Business Entrepreneurship: AA, AS
  (e) General Business: AA, AS
  (f) Management: AA, AS
  (g) Marketing: AA, AS
  (h) Real Estate: AA, AS

Chemistry: AS

Communication Studies
  (a) Communication Studies—General: AA, AS
  (b) Communication Studies—Graphic Design: AA, AS
  (c) Communication Studies—Multimedia: AA, AS
  (d) Communication Studies—Photography: AA, AS

Computer Information Systems
  (a) Administrative Technical Support: AA, AS
  (b) Computer Applications: AA, AS
  (c) Networking: AA, AS
  (d) Virtual Office Professional—Administrative: AA, AS
  (e) Virtual Office Professional—Technical Support: AA, AS
  (f) Virtual Office Professional—Web Management: AA, AS

Computer Science
  (a) Computer Science: AA, AS
  (b) Management Information Systems: AA, AS

Construction Technology
  (a) Residential Building Construction: AA, AS

Deaf Studies: American Sign Language: AA

Drafting and Engineering Support
  (a) Architectural/Civil: AA, AS
  (b) Mechanical/Civil: AA, AS

Drama
  (a) Theater Arts: AA

Earth Science
  (a) Geology: AS

Education
  (a) Liberal Studies—Elementary Education: AA

Engineering: AA, AS

English: AA

Environmental Studies and Sustainability: AS

Fashion
  (a) Fashion Industries: AS

Fire Technology: AA, AS

History: AA

Human Development and Family
  (a) Early Childhood Education: AA, AS
  (b) Early Childhood Education—Master Teacher: AA, AS
  (c) Early Childhood Education—Site Supervisor: AA, AS

Humanities
  (a) Asian Studies: AA
  (b) Diverse Perspectives: AA
  (c) General: AA

Liberal Arts
  (a) Arts and Cultures: AA

Mathematics: AA, AS

Mechatronics Technology: AA, AS

Music: AA, AS

Natural Science: AA, AS

Nursing, Registered: AA, AS

Philosophy: AA

Photography: AA, AS

Physical Education: AA, AS

Physics: AS

Psychology: AA, AS

Recreation Management: AA, AS

Social and Behavioral Sciences: AA, AS

Welding Technology: AA, AS

Women’s Studies: AA
California Community Colleges offer associate degrees for transfer to the California State University system. These degrees are designed to provide a clear pathway to a CSU major and baccalaureate degree. Those California Community College students awarded an AA-T or AS-T degree are guaranteed admission with junior standing within the CSU system and given priority admission consideration to their local CSU campus or to a program that is deemed similar to the community college major. This priority does not guarantee admission to specific majors or campuses. For more information about Associate Degrees for Transfer, go to www.adegreewithaguarantee.com.

**Degree Programs**

- Administration of Justice: AS-T
- Anthropology for Transfer: AA-T
- Art History for Transfer: AA-T
- Business Administration for Transfer: AS-T
- Communication Studies for Transfer: AA-T
- Early Childhood Education for Transfer: AS-T
- English for Transfer: AA-T
- Geology for Transfer: AS-T
- History for Transfer: AA-T
- Mathematics for Transfer: AS-T
- Philosophy for Transfer: AA-T
- Physics for Transfer: AS-T
- Political Science for Transfer: AA-T
- Psychology for Transfer: AA-T
- Sociology for Transfer: AA-T
- Studio Arts for Transfer: AA-T
A Certificate of Achievement is designed to demonstrate that a student has completed coursework and developed capabilities relating to career or general education. Certificates of Achievement require a minimum of 18 units.

**Agriculture:**
- (a) Sustainable Agriculture

**Applied Art & Design:**
- (a) Graphic Design
- (b) Illustration
- (c) Multimedia

**Automotive Technology:**
- (a) Air Conditioning & Body Electrical
- (b) Alignment & Brake
- (c) Automatic Transmission
- (d) Automotive Engine Machining
- (e) Emission & Driveability Tune-up
- (f) Master Automotive Technician
- (g) Powertrain

**Biological Sciences:**
- (a) Watershed Ecology

**Business:**
- (a) Accounting
- (b) Administrative Professional
- (c) Business Entrepreneurship
- (d) General Business
- (e) Management
- (f) Marketing
- (g) Real Estate

**Computer Information Systems:**
- (a) Administrative Technical Support
- (b) Computer Applications
- (c) Networking
- (d) Virtual Office Professional—Administrative
- (e) Virtual Office Professional—Technical Support
- (f) Virtual Office Professional—Web Management

**Computer Science:**
- (a) Embedded Systems
- (b) Web Programming

**Construction Technology:**
- (a) Residential Building Construction

**Deaf Studies: American Sign Language**

**Drafting & Engineering Support:**
- (a) Architectural/Civil
- (b) Mechanical/Civil

**Engineering:**
- (a) Civil Engineering Technology
- (b) General Engineering Technology

**Fashion:**
- (a) Fashion Industries

**Fire Technology**

**Human Development & Family:**
- (a) Early Childhood Education Teacher

**Mechatronics Technology**

**Nutrition and Fitness Trainer**

**Photography**

**Recreation Management:**
- (a) Recreation Specialist

**Welding**

**Sierra College Catalog 2013–2014**
www.sierracollege.edu
A Skills Certificate is an acknowledgement that a student has attained a specified set of competencies within a career and technical education program, either in preparation to enter the field or upgrade of skills required for continued employment. Skills Certificates require a minimum of 6 units and a maximum of 17.5 units.

**Agriculture:**
(a) Sustainable Agriculture Business

**Applied Art and Design:**
(a) Digital Illustration  
(b) Graphic Design  
(c) Video Production and Editing  
(d) Visual Arts and Media  
(e) Web Design

**Automotive Technology:**
(a) Entry Level Automotive Service and Repair

**Business:**
(a) Small Business

**Computer Information Systems:**
(a) Computer Basics  
(b) Microsoft Office Specialist  
(c) Web Site Production

**Drafting and Engineering Support:**
(a) Architectural Drafting Specialist  
(b) Drafting Essentials  
(c) Mechanical Drafting Specialist

**Drama:**
(a) Costuming  
(b) Stagecraft

**English as a Second Language:**
(a) English as a Second Language Academic Preparedness

**Environmental Studies and Sustainability:**
(a) Photovoltaic  
(b) Photovoltaic Advanced

**Fashion:**
(a) Fashion Design  
(b) Fashion Merchandising

**Geography:**
(a) Geographic Information Systems (GIS)

**Human Development and Family:**
(a) Early Childhood Education Associate Teacher

**Library Science:**
(a) Library Media Technician

**Mechatronics:**
(a) Electro-Mechanical

**Photography:**
(a) Alternative Processes in Photography  
(b) Color Photography  
(c) Digital Imaging  
(d) Landscape Photography  
(e) Narrative Photography  
(f) Photographic Processes  
(g) Portrait, Fashion and Wedding Photography

**Welding Technology:**
(a) Gas Metal Arc Welding  
(b) Gas Tungsten Arc Welding  
(c) Metal Fabricator and Designer  
(d) Shielded Metal Arc Welding  
(e) Welding Entrepreneurship
A. English Language Communication and Critical Thinking (One course in each of areas A1, A2 and A3)

A1. Oral Communication:
Business 85; Communication Studies 1, 2, 3, 5.

A2. Written Communication:
English 1A; English as a Second Language 40W.

A3. Critical Thinking:
Communication Studies 2; English 1B, 1C, 11; History 35; Philosophy 4, 12.

B. Scientific Inquiry and Quantitative Reasoning (Minimum of one course in each of areas B1, B2 and B4, plus one corresponding laboratory component required from either area B1 or B2; laboratory courses are underlined)

B1. Physical Science:
Agriculture 221; Astronomy 2, 2/11, 2/14, 5, 5/11, 5/14, 7, 10, 10/11, 10/14, 25; Chemistry 1A, 1B, 2A, 2B, 3A, 3B; Earth Science 1, 1/1L, 2, 3, 3/3L, 7, 10, 10/10L, 14, 15, 15/15L; Environmental Studies & Sustainability 7; Geography 1, 1/1L, 4; Mechatronics 1; Physics 10, 10/11, 105, 105/105L, 110, 110/110L, 205, 205/205L, 210, 210/210L, 215, 215/215L.

B2. Life Science:
Agriculture 156, 200; Anthropology 1, 1/1L, 10; Biological Sciences 1, 2, 3, 4, 5, 6, 7A & 7B*, 8A & 8B*, 10, 11, 14, 15, 21, 22, 33, 35, 36, 44, 55, 56, 56/56L; Psychology 140, 140/140L.

B3. Laboratory Activity:
One of the courses selected from area B1 or B2 must include a related laboratory. Laboratory courses are underlined.

B4. Mathematics/Quantitative Reasoning:
Mathematics 8, 10, 12, 13, 15, 16A, 16B, 17, 18, 20, 24, 29, 30, 31, 32, 33, 42; Psychology 142; Sociology 15.

* Students must complete the series for CSU General Education Certification.

C. Arts and Humanities (Minimum of one course in each of areas C1 and C2)

C1. Arts:
Applied Art & Design 60; Art 1A, 1B, 1C, 1D, 1E, 1F, 2, 4A, 4B, 5A, 6C, 7A, 8A, 9A, 10, 11, 12A, 17, 19, 34, 40A; Drama 10A, 13, 16A; English 37, 38, 40, 42; Fashion 12; Humanities 1, 2, 3; Music 2, 6A, 9A, 10, 11, 12A, 12B, 13, 46, 47, 48, 50, 54; Photography 10, 60A, 65; Social Science 50.

C2. Humanities:
Applied Art & Design 12; Communication Studies 12; Deaf Studies 1, 2, 3, 4, 10; English 1B, 18, 19, 20, 21, 24, 27, 29, 30A, 30B, 32, 33, 34, 35, 37, 38, 40, 41, 44, 45, 46A, 46B, 47A, 47B, 48; French 1, 2, 3, 4; German 1, 2; History 4A, 4B, 17A, 17B, 19A, 19B, 20, 21, 22, 23, 24, 27, 50, 51; Human Development & Family 44; Humanities 1, 2, 3, 4, 9, 10, 11, 15, 17, 20, 21; Italian 1, 2, 3; Japanese 1, 2; Philosophy 2, 6, 10, 13, 15, 20, 21, 27, 30, 35, 60, 65; Social Science 25; Spanish 1, 2, 3, 4, 15, 16, 17; Women & Gender Studies 3.

D. Social Sciences (Minimum of one course each in at least two areas, D0 through D9)

D0. Sociology and Criminology:
Administration of Justice 50; Human Development & Family 22; Psychology 103; Social Science 10; Sociology 1, 2, 3, 4, 10, 20, 24, 27; Women & Gender Studies 4.

D1. Anthropology and Archeology:
Anthropology 2, 4, 5, 6, 7, 9, 12, 27.

D2. Economics:
Agriculture 215; Economics 1A, 1B.

D3. Ethnic Studies:
Anthropology 4, 7; History 23; Humanities 3; Social Science 10, 13, 20, 25, 30, 35, 40, 50; Sociology 3.

D4. Gender Studies:
Anthropology 27; History 27; Humanities 9, 27; Political Science 27; Sociology 5, 10, 27; Women & Gender Studies 1, 2, 3, 4.

D5. Geography:
Geography 2, 3, 5.

D6. History:
D7. Interdisciplinary Social or Behavioral Science:
- Agriculture 19B; Anthropology 4, 14; Communication Studies 7, 8, 10, 15; Environmental Studies & Sustainability 1;
- Geography 2; Human Development & Family 1, 4, 9, 21, 22; Nutrition & Food Science 10; Psychology 105, 106, 110;
- Social Science 10, 13, 50; Sociology 1, 2, 4, 20.

D8. Political Science, Government and Legal Institutions:
- Administration of Justice 50; Business 49; Geography 2; History 4A, 4B; Political Science 1, 2, 3, 4, 7, 8, 9, 12, 16, 27;
- Social Science 40.

D9. Psychology:

E. Lifelong Learning and Self-Development (Minimum of 3 semester units, with no more than one unit from physical activity)

| Biological Sciences 6, 55; Environmental Studies & Sustainability 6, 10; Health Education 2, 10; Human Development & Family 1, 9, 21, 22, 61; Nutrition & Food Science 10, 13; Personal Development 6, 70; Physical Education 83, 84; Psychology 100, 104, 106, 108, 110, 127, 130, 150; Sociology 4, 5. Physical Activity (1 unit maximum) Physical Education 3A, 3B, 5A, 5B, 6, 7, 8, 9, 10, 11, 13, 14, 16, 17, 19, 22, 23, 26, 27A, 27B, 29, 30, 36, 39, 42, 51B, 51C, 51D, 53, 54, 55, 56A, 56B, 57, 64, 65, 66, 69, 71, 72, 73, 74, 75, 85, 87, 93, 94, 200; Recreation Management 70, 71. | 3 |

CSU Graduation Requirement in United States History, Constitution and American Ideals (This CSU graduation requirement may be met before or after transfer to a CSU campus. Minimum of 6 units chosen from one of the following course combinations, A-G)

| A. History 17A and History 17B. |
| B. History 17A and History 20. |
| C. History 17A and Political Science 1. |
| D. History 17B and History 27. |
| E. History 17B and Political Science 1. |
| F. History 20 and History 27. |
| G. History 27 and Political Science 1. |

* Courses may be used to fulfill both the CSU General Education Breadth requirements and the CSU graduation requirement in U.S. History, Constitution and American Ideals.

MINIMUM LOWER-DIVISION GENERAL EDUCATION UNITS

| 39 |

Additional upper-division general education units at the California State University campus

| 9 |

Minimum general education units to obtain Bachelor’s degree

| 48 |

NOTES:
1. CSU admission eligibility requires that each course fulfilling areas A1, A2, A3 and B4 is completed with a grade of “C” or better.
2. While a course may be listed in multiple areas, it may only be used to satisfy one area requirement. (The U.S. History, Constitution and American Ideals graduation requirement is not part of CSU GE Breadth. Courses used to fulfill CSU GE Breadth may also be used to fulfill the U.S. History, Constitution and American Ideals graduation requirement.)
3. Students with Advanced Placement (AP), College-Level Examination Program (CLEP), and/or International Baccalaureate (IB) examinations should check with a counselor to verify application of the examinations to the appropriate general education areas.
4. Courses on this CSU General Education Breadth list are approved annually for the academic year, which begins with the Fall 2013 semester and remains valid through Summer 2014. If a course is taken before it is approved or after it is removed, it cannot be used to satisfy CSU GE Breadth. See www.assist.org for up-to-date as well as historical course approval information.
5. Students pursuing majors with extensive lower-division unit requirements, such as Engineering, are advised to focus on completing the pre-major requirements while meeting minimum admission requirements. Consult with a counselor to determine the most appropriate transfer path.
6. To qualify as an upper-division transfer, students must complete a minimum of 60 CSU transferable semester units (a maximum of 70 units will be accepted), with a 2.0 grade point average or higher in all transferable college units attempted.
7. CSU Sacramento requires: A 2.0 GPA in general education courses (except as noted above); and a foreign language for graduation.
8. The CSU Sacramento English 20 graduation requirement can be satisfied by completing Sierra’s English 1B or 1C. Either of these courses may “double count” to meet the English 20 graduation requirement and the CSU General Education Breadth requirement for area A3.

Effective Fall 2011, completion of CSU General Education Breadth fulfills Sierra College associate degree general education and learning skills requirements.
1. **English Communication**  
(CSU: 3 courses, 9 semester/12–15 quarter units, one course each from areas 1A, 1B, & 1C)  
(UC: 2 courses, 6 semester/8–10 quarter units, one course each from areas A & B)  

<table>
<thead>
<tr>
<th>Area</th>
<th>Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A. English Composition</td>
<td>English 1A.</td>
<td>6–9</td>
</tr>
<tr>
<td>1B. Critical Thinking-English Composition</td>
<td>English 1B, 1C.</td>
<td></td>
</tr>
<tr>
<td>1C. Oral Communication (UC transfer students do not have to fulfill this area; CSU transfers must.)</td>
<td>Communication Studies **1, 2, 3, **5.</td>
<td></td>
</tr>
</tbody>
</table>

2. **Mathematical Concepts and Quantitative Reasoning** (1 course, 3 semester/4–5 quarter units)  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics **12, **13, **15, **16A, **16B, **18, **20, **29, **30, **31, 32, 33, **42; Psychology **142; Sociology 15.</td>
<td>3</td>
</tr>
</tbody>
</table>

3. **Arts and Humanities** (3 courses, 9 semester/12–15 quarter units. At least one must be from Arts and one from Humanities.)  

<table>
<thead>
<tr>
<th>Area</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A. Arts</td>
<td>Art 1A, 1B, 1C, 1D, 1E, 1F, 1G, 10, *11; Drama 13, 16A; English 42; Music 2, 6A, 9A, **10, 11, 12A, 12B, 13; Photography *10; Social Science 50.</td>
</tr>
<tr>
<td>3B. Humanities</td>
<td>Applied Art &amp; Design 12; Communication Studies 12; Deaf Studies 3, 4, 10; English 24, 27, 29, 30A, 30B, 32, 33, 34, 35, **37, **38, 40, 41, 46A, 46B, 47A, 47B, 48; French 2, 3, 4; History 4A, 4B, 17A, 17B, 19A, 19B, 20, 21, 22, 23, 24, 27, 50, 51; Humanities 1, 2, 3, 5, *9, 10, 11, 15, 17, 20, 21; Italian 3; Japanese 2; Philosophy 2, 6, 10, 13, 15, 20, 21, 27, 30, 50, 60, 65; Social Science 25; Spanish 3, 4; Women &amp; Gender Studies *3.</td>
</tr>
</tbody>
</table>

4. **Social and Behavioral Sciences** (3 courses, 9 semester/12–15 quarter units. Courses from at least two areas 4A through 4J.)  

<table>
<thead>
<tr>
<th>Area</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>4A. Anthropology and Archaeology</td>
<td>Anthropology 2, 4, 5, 6, 7, 9, 27.</td>
</tr>
<tr>
<td>4B. Economics</td>
<td>Agriculture 215; Economics 1A, 1B.</td>
</tr>
<tr>
<td>4C. Ethnic Studies</td>
<td>Anthropology 4, 7; History 23; Social Science 10, 13, 20, 25, 30, 35, 40, 50; Sociology 3.</td>
</tr>
<tr>
<td>4E. Geography</td>
<td>Geography 2, 3, 5.</td>
</tr>
<tr>
<td>4G. Interdisciplinary, Social &amp; Behavioral Sciences</td>
<td>Agriculture 198; Anthropology 4, 14; Communication Studies 7, 8, 10, 15; Environmental Studies &amp; Sustainability 1; Human Development &amp; Family **1, 4, **9, *21, *22; Psychology *110; Social Science 13, 50; Sociology *4, 20.</td>
</tr>
<tr>
<td>4H. Political Science, Government and Legal Institutions</td>
<td>Business 49; Political Science 1, 2, 3, 4, 7, 8, 9, 12, 16, 27; Social Science 40.</td>
</tr>
<tr>
<td>4J. Sociology and Criminology</td>
<td>Administration of Justice 50; Sociology 1, 2, 3, *10, 20, 27; Women &amp; Gender Studies *4.</td>
</tr>
</tbody>
</table>

*continued on next page*
5. **Physical and Biological Sciences** (2 courses, 7-9 semester units/9-12 quarter units. One Physical Science course and one Biological Science course; one must include a corresponding laboratory. Laboratory courses are underlined.)

<table>
<thead>
<tr>
<th>Units</th>
<th>5A. Physical Science</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Astronomy 2, 2/11, 2/14, 5, 5/11, 5/14, 7, 10, 10/11, 10/14, 25; Chemistry **1A, **1B, **2A, **2B, **3A/3B; Earth Science 1, 1/1L, 2, 3, 3/3L, *7, 10, 10/10L, 14, 15, 15/15L; Environmental Studies &amp; Sustainability *7; Geography 1, 1/1L, 4; Physics **10, **10/11, **105, **105/105L, **110, **110/110L, **205, **205/205L, **210, **210/210L, **215, **215/215L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units</th>
<th>5B. Biological Science</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture *156, 200; Anthropology 1, 1/1L, 10; Biological Sciences 1, **2, **3, **4, **5, **6, **10, **11, 14, 15, *21, **22, **33, **44, **55, **56, **56/56L; Psychology 140, 140/140L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units</th>
<th>5C. Laboratory Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One of the courses selected from area 5A or 5B must include a related laboratory. Laboratory courses are underlined.</td>
</tr>
</tbody>
</table>

6. **Language Other Than English** (Proficiency) (University of California requirement. Not required of California State University transfers.) (UC transfers may fulfill this requirement by completing 6A, 6B, 6C, or 6D below)

<table>
<thead>
<tr>
<th>Units</th>
<th>6A. Completion of one of the following courses: Deaf Studies 1, 2, 3, 4; French 1, 2, 3, 4; German 1, 2; Italian 1, 2, 3; Japanese 1, 2; Spanish 1, 2, 3, 4.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6B. Completion of two years of the same foreign language in high school with grades of &quot;C&quot; or better.</td>
</tr>
<tr>
<td></td>
<td>6C. Equivalent proficiency demonstrated by a specified minimum score on College Board SAT II tests in languages other than English; or a score of 3, 4, or 5 on any languages other than English College Board Advanced Placement (AP) Examinations; or a score of 5 or higher on any languages other than English International Baccalaureate (IB) Higher Level Examinations.</td>
</tr>
<tr>
<td></td>
<td>6D. Completion of two years of formal schooling at the sixth grade level or higher in an institution where the language of instruction is not English with grades of &quot;C&quot; or better.</td>
</tr>
</tbody>
</table>

**CSU Graduation Requirement In U.S. History, Constitution and American Ideals** (6 sem. units/2 courses) (Not part of IGETC; this CSU graduation requirement may be met before or after transfer to a CSU campus.)

<table>
<thead>
<tr>
<th>Units</th>
<th>A. History 17A and History 17B.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B. History 17A and History 20.</td>
</tr>
<tr>
<td></td>
<td>C. History 17A and Political Science 1.</td>
</tr>
<tr>
<td></td>
<td>D. History 17B and History 27.</td>
</tr>
<tr>
<td></td>
<td>E. History 17B and Political Science 1.</td>
</tr>
<tr>
<td></td>
<td>F. History 20 and History 27.</td>
</tr>
<tr>
<td></td>
<td>G. History 27 and Political Science 1.</td>
</tr>
</tbody>
</table>

+Courses may be used to fulfill both the IGETC requirements and the CSU graduation requirement in U.S. History, Constitution and American Ideals.

**NOTES:**
1. Students should consult with counselors to determine the most appropriate general education patterns for their intended majors and transfer institutions.
2. Courses listed in multiple areas will not be certified in more than one area except for courses in Language Other Than English.
3. Courses taken as preparation for a major will also satisfy the corresponding portion of the IGETC requirements.
4. Each course used to fulfill IGETC requirements must be completed with a minimum grade of "C" or better.
5. Advanced placement (AP) exams can be used to satisfy all areas of IGETC except for the Critical Thinking-English Composition and Oral Communication requirements. IGETC policy is to accept a score of 3 or higher to clear one course.
6. International Baccalaureate (IB) exams can be used to satisfy all areas of IGETC except for the Area 1 requirements. IGETC policy is to accept a score of 5 or higher to clear one course.

*Indicates that course is cross-listed in two departments and can be credited only once.

**Indicates that course credit is limited by UC and/or CSU. Consult pages 54-56 of the catalog and the Counseling Office for additional information.

Effective Fall 2011, Completion of IGETC fulfills Sierra College associate degree general education and learning skills requirements.
<table>
<thead>
<tr>
<th>Course Area</th>
<th>Course Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration of Justice</td>
<td>28, 50, 51, 52, 53, 54, 55, 56, 57, 58, 62, 67, 69, 70, 72, 73, 74, 75, 76, 88, 89, 95*</td>
</tr>
<tr>
<td>Agriculture</td>
<td>28, 95*, 156, 158A, 158B, 159, 163, 164, 182, 196, 198, 200, 203, 215, 221</td>
</tr>
<tr>
<td>Anthropology</td>
<td>1, 1l, 2, 4, 5, 6, 7, 9, 10, 12, 14, 27, 28</td>
</tr>
<tr>
<td>Applied Art &amp; Design</td>
<td>12, 20, 28, 30, 44, 50, 52, 53, 54, 55, 60, 61, 62, 66, 70, 71, 75, 76, 79, 80, 83, 85, 86, 90, 95*</td>
</tr>
<tr>
<td>Art</td>
<td>1A, 1B, 1C, 1D, 1E, 1F, 1G, 2, 3, 4A, 4B, 5A, 5B, 6C, 7A, 7B, 8A, 8B, 9A, 9B, 95, 10, 11, 12A, 12B, 17, 18A, 18B, 18S, 19, 20, 21, 22, 24, 28, 31, 32, 33, 34, 40A, 40B, 41, 52, 55, 71, 95*</td>
</tr>
<tr>
<td>Astronomy</td>
<td>2, 5, 7, 10, 11, 14, 25, 28</td>
</tr>
<tr>
<td>Automotive Technology</td>
<td>28, 59, 62A, 64, 66A, 66B, 69, 71A, 75, 79, 80, 81, 95*</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>1, 2, 3, 4, 5, 6, 7A, 7B, 8A, 8B, 10, 11, 13, 14, 15, 16A through Z, 17A, 21, 22, 23, 24, 28, 30, 33, 35, 36, 44, 45, 55, 56, 56L, 95*, 301</td>
</tr>
<tr>
<td>Business</td>
<td>1, 2, 3, 9, 19, 20, 28, 40, 41, 47, 48, 49, 55, 85, 95*, 100, 101, 102, 103, 115, 116, 120, 121, 122, 123, 124, 140, 150</td>
</tr>
<tr>
<td>Chemistry</td>
<td>1A, 1B, 1X, 1Y, 2A, 2B, 2X, 2Y, 3A, 3B, 5, 12A, 12B, 28, 95*</td>
</tr>
<tr>
<td>Communication Studies</td>
<td>1, 2, 3, 5, 7, 8, 10, 12, 15, 21, 28, 30, 31A, 78, 95*, 301</td>
</tr>
<tr>
<td>Computer Information Systems</td>
<td>5, 20, 28, 30, 35, 50, 62, 65, 67, 70, 80, 87, 88, 90, 95*, 100, 115, 120, 127, 137, 141, 142, 144, 145, 347A</td>
</tr>
<tr>
<td>Computer Science</td>
<td>10, 12, 13, 21, 26, 27, 28, 39, 46, 50, 52, 54, 55, 59P, 62, 63, 66, 76A, 79, 95*</td>
</tr>
<tr>
<td>Construction Technology</td>
<td>28, 42, 44, 45, 47, 48, 60, 62, 95*</td>
</tr>
<tr>
<td>Deaf Studies</td>
<td>1, 2, 3, 4, 10, 28, 95*</td>
</tr>
<tr>
<td>Drafting and Engineering Support</td>
<td>1, 2, 5, 6, 10, 11, 12, 20, 21, 22, 28, 40, 95*</td>
</tr>
<tr>
<td>Earth Science</td>
<td>1, 1l, 2, 3, 3L, 6, 7, 10, 10L, 14, 15, 15L, 16G, 28, 50, 54A through E, 55F, 56F, 91A, 95*, 301</td>
</tr>
<tr>
<td>Economics</td>
<td>1A, 1B, 28</td>
</tr>
<tr>
<td>Education</td>
<td>7, 10, 28, 95*</td>
</tr>
<tr>
<td>Engineering</td>
<td>10, 17, 17L, 22A, 22B, 28, 35, 37, 45, 95*, 150</td>
</tr>
<tr>
<td>English</td>
<td>1A, 1B, 1C, 2, 7, 11, 12, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30A, 30B, 32, 33, 34, 35, 37, 38, 40, 41, 42, 44, 45, 46A, 46B, 47A, 47B, 48</td>
</tr>
</tbody>
</table>
Environmental Studies and Sustainability 1, 6, 7, 10, 13, 28, 30, 32, 34, 95*
Fashion 1, 2, 3, 4A, 4B, 7, 8, 12, 14, 15, 28, 95*
Fire Technology 1, 3, 4, 5, 7, 8, 10, 28, 50, 73, 74, 75, 95*, 150, 151, 152, 154, 155, 157, 158, 159, 160, 165, 166, 167 (maximum 30 units of FIRE courses excluding 95)
French 1, 2, 3, 4, 28, 300F
Geography 1, 11, 2, 3, 4, 5, 11, 12, 14, 15, 16, 28, 85, 86, 90, 91A, 91B, 92, 93, 94, 95*, 301, 351
German 1, 2, 28
Health Education 1, 2, 10
Health Sciences 3
Human Development & Family 1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, 14, 19, 21, 22, 23, 25, 28, 29, 30, 38, 40, 41, 43, 44, 46, 47, 61, 95*
Humanities 1, 2, 3, 5, 9, 10, 11, 15, 17, 20, 21, 26, 27, 28, 30, 95*
Independent Study Any course numbered 28 (all baccalaureate level)
Interdisciplinary 10
Italian 1, 2, 3
Japanese 1, 2, 28
Journalism 20A, 28, 95*
Library Science 10A, 10B, 20, 25, 28, 30, 40, 95*
Mathematics 8, 10, 12, 13, 15, 16A, 16B, 17, 18, 20, 24, 28, 29, 30, 31, 32, 33, 42
Mechatronics 1, 4, 8, 10, 14, 25, 28, 44, 54, 90, 95*
Nursing, Registered 17, 21, 22, 23, 24, 95*

Nutrition & Food Science 5, 10, 13, 14, 28, 95*
Personal Development 1, 6, 8, 9, 21, 28, 52, 70, 94*
Philosophy 2, 4, 5, 6, 10, 12, 13, 15, 20, 21, 27, 28, 30, 50, 60, 65
Physical Education 3A, 3B, 5A, 5B, 6, 7, 8, 9, 10, 11, 13, 14, 16, 17, 19, 22, 23, 26, 27A, 27B, 28, 29, 30, 32, 35, 36, 39, 42, 51B, 51C, 51D, 53, 54, 55, 56A, 56B, 57, 58, 59, 64, 65, 66, 68, 69, 71, 72, 73, 74, 75, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89A, 89B, 89C, 89F, 93, 94, 114, 200
Political Science 1, 2, 3, 4, 7, 8, 9, 12, 16, 27, 28
Recreation Management 10, 20, 30, 40, 50, 51, 60, 61, 70, 71, 72, 95*
Skill Development 1, 10, 28
Social Science 10, 13, 20, 25, 28, 30, 35, 40, 50, 300F, 300G
Sociology 1, 2, 3, 4, 5, 10, 15, 20, 24, 27, 28
Spanish 1, 2, 3, 4, 15, 16, 17, 28
Welding Technology 10, 15, 28, 30, 40, 50, 60, 70, 82, 95*
Women and Gender Studies 1, 2, 3, 4

Total of all Internship courses (any course numbered 95 and Personal Development 94) to be credited may not exceed 16 units.
<table>
<thead>
<tr>
<th>Transferable Courses to UC System</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agriculture</strong></td>
<td>28**, 156, 158A*, 158B*, 198, 200, 215, 221, 300**</td>
</tr>
<tr>
<td><strong>Anthropology</strong></td>
<td>1, 11, 2, 4, 5, 6, 7, 9, 10, 14, 27, 28**, 300**</td>
</tr>
<tr>
<td><strong>Art &amp; Design</strong></td>
<td>12, 28**, 62, 70, 75</td>
</tr>
<tr>
<td><strong>Astronomy</strong></td>
<td>2, 5, 7, 10, 11, 14, 25, 28**, 300**</td>
</tr>
<tr>
<td><strong>Astronomy</strong></td>
<td>1, 2 or 22, 3 or 33, 4*, 5*, 6*, 7A &amp; 7B*, 8A* &amp; 8B*, 10*, 11*, 14, 15, 21, 28**, 30, 34, 44*, 55*, 56*, 56L*, 300**</td>
</tr>
<tr>
<td><strong>Biological Sciences</strong></td>
<td>1, 2, 20, 48, 49</td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td>1A*, 1B*, 2A*, 2B*, 3A* and 3B*, 5, 12A, 12B, 28**</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
<td>1*, 2, 3, 5*, 7, 8, 10, 12, 15, 21</td>
</tr>
<tr>
<td><strong>Computer Science</strong></td>
<td>10, 12, 13, 21, 26, 28**, 39, 46, 50, 54, 66, 76A, 300**</td>
</tr>
<tr>
<td><strong>Economics</strong></td>
<td>1A, 1B, 28**, 300**</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>10, 17, 17L, 22B, 28**, 35, 45, 150</td>
</tr>
<tr>
<td><strong>English</strong></td>
<td>1A, 1B, 2, 18, 19*, 20, 21, 24, 27, 28**, 29, 30A, 30B, 32, 33, 34, 35, 37*, 38*, 40, 41, 42, 46A, 46B, 47A, 47B, 48, 300** (no credit for 19 if taken after 20 or 21)</td>
</tr>
<tr>
<td><strong>Human Development &amp; Family</strong></td>
<td>1*, 4, 9*, 21, 22 (maximum credit, 1 course from 1 and 9)</td>
</tr>
<tr>
<td><strong>Humanities</strong></td>
<td>1, 2, 3, 5, 9, 10, 11, 15, 17, 20, 21, 27, 28**, 300**</td>
</tr>
<tr>
<td><strong>Italian</strong></td>
<td>1, 2, 3</td>
</tr>
<tr>
<td><strong>Japanese</strong></td>
<td>1, 2, 28**</td>
</tr>
<tr>
<td><strong>Journalism</strong></td>
<td>20A</td>
</tr>
<tr>
<td><strong>Library Science</strong></td>
<td>10A*, 10B* (maximum credit, 1 course)</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>12*, 13*, 15*, 16A*, 16B*, 17*, 18*, 20*, 28**, 29*, 30*, 31*, 32, 33, 42*, 300** (maximum credit, 1 course from 12 and 29), (maximum credit, 1 course from MATH 13 and PSYC 142), (maximum credit, 1 course from 15 and 20), (maximum credit, 1 course from 16A, 30 and 42), (maximum credit, 1 course from 16B and 31), (maximum credit, 1 course from 17 and 18)</td>
</tr>
<tr>
<td><strong>Music</strong></td>
<td>2, 3A, 3B, 4A, 4B, 6A, 6B, 9A, 9B, 10*, 11, 12A, 12B, 13, 28**, 39A, 40A, 40B, 40C, 40D, 42, 46, 47, 48, 49, 50, 54, 57A, 57B, 58A, 58B, 300** (no credit for 10 if taken concurrently with or after 3A, 3B or 6A, 6B)</td>
</tr>
<tr>
<td><strong>Nutrition &amp; Food Science</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Philosophy</strong></td>
<td>2, 4, 6, 10, 12, 13, 15, 20, 21, 27, 28**, 30, 50, 60, 65</td>
</tr>
<tr>
<td><strong>Photography</strong></td>
<td>10, 60A, 60B, 75</td>
</tr>
<tr>
<td><strong>Political Science</strong></td>
<td>1, 2, 3, 4, 7, 8, 9, 12, 16, 27, 28**, 300**</td>
</tr>
<tr>
<td><strong>Psychology</strong></td>
<td>28**, 100, 103, 104, 105, 106, 107, 108, 110, 115, 127, 130, 140, 140L, 142*, 160, 170, 300** (maximum credit, 1 course from PSYC 142 and MATH 13)</td>
</tr>
<tr>
<td><strong>Recreation Management</strong></td>
<td>70*, 71* (Any or all of these RECM, ATHL and PHED activity courses combined: maximum credit, 4 units)</td>
</tr>
<tr>
<td><strong>Sociology</strong></td>
<td>10, 13, 20, 25, 30, 28**, 35, 40, 50, 300**, 300F, 300G</td>
</tr>
<tr>
<td><strong>Spanish</strong></td>
<td>1, 2, 3, 4, 17, 28**, 300**</td>
</tr>
<tr>
<td><strong>Women &amp; Gender Studies</strong></td>
<td>1, 2, 3, 4</td>
</tr>
</tbody>
</table>

*See explanation of unit limitations as noted within disciplines above.

**Transfer credit for these courses is given only after review of the course outline by the enrolling UC campus. This usually occurs after transfer and may require recommendations from faculty.
Effective Summer 2009, course subject abbreviations were changed. Transcripts continue to reflect the previous abbreviations for courses prior to Summer 2009, with all courses starting Summer 2009 listed with the new abbreviations.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration of Justice</td>
<td>ADMJ</td>
</tr>
<tr>
<td>Agriculture</td>
<td>AGRI</td>
</tr>
<tr>
<td>Anthropology</td>
<td>ANTH</td>
</tr>
<tr>
<td>Applied Art and Design</td>
<td>AAD</td>
</tr>
<tr>
<td>Art</td>
<td>ART</td>
</tr>
<tr>
<td>Astronomy</td>
<td>ASTR</td>
</tr>
<tr>
<td>Athletics</td>
<td>ATHL</td>
</tr>
<tr>
<td>Automotive Technology</td>
<td>AUTO</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>BIOL</td>
</tr>
<tr>
<td>Business</td>
<td>BUS</td>
</tr>
<tr>
<td>Chemistry</td>
<td>CHEM</td>
</tr>
<tr>
<td>Communication Studies</td>
<td>COMM</td>
</tr>
<tr>
<td>Computer Information Systems</td>
<td>CIS</td>
</tr>
<tr>
<td>Computer Science</td>
<td>CSCI</td>
</tr>
<tr>
<td>Construction Technology</td>
<td>CTR</td>
</tr>
<tr>
<td>Deaf Studies</td>
<td>DFST</td>
</tr>
<tr>
<td>Drafting and Engineering Support</td>
<td>DES</td>
</tr>
<tr>
<td>Drama</td>
<td>DRMA</td>
</tr>
<tr>
<td>Earth Science</td>
<td>ESCI</td>
</tr>
<tr>
<td>Economics</td>
<td>ECON</td>
</tr>
<tr>
<td>Education</td>
<td>EDU</td>
</tr>
<tr>
<td>Engineering</td>
<td>ENGR</td>
</tr>
<tr>
<td>English</td>
<td>ENGL</td>
</tr>
<tr>
<td>English as a Second Language</td>
<td>ESL</td>
</tr>
<tr>
<td>Environmental Studies &amp; Sustainability</td>
<td>ESS</td>
</tr>
<tr>
<td>Fashion</td>
<td>FASH</td>
</tr>
<tr>
<td>Fire Technology</td>
<td>FIRE</td>
</tr>
<tr>
<td>French</td>
<td>FREN</td>
</tr>
<tr>
<td>Geography</td>
<td>GEOG</td>
</tr>
<tr>
<td>German</td>
<td>GER</td>
</tr>
<tr>
<td>Health Education</td>
<td>HED</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>HSCI</td>
</tr>
<tr>
<td>History</td>
<td>HIST</td>
</tr>
<tr>
<td>Human Development and Family</td>
<td>HDEV</td>
</tr>
<tr>
<td>Humanities</td>
<td>HUM</td>
</tr>
<tr>
<td>Interdisciplinary</td>
<td>INT</td>
</tr>
<tr>
<td>Italian</td>
<td>ITAL</td>
</tr>
<tr>
<td>Japanese</td>
<td>JPN</td>
</tr>
<tr>
<td>Journalism</td>
<td>JRNL</td>
</tr>
<tr>
<td>Learning Disabilities</td>
<td>LRDS</td>
</tr>
<tr>
<td>Library Science</td>
<td>LIBS</td>
</tr>
<tr>
<td>Mathematics</td>
<td>MATH</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>MECH</td>
</tr>
<tr>
<td>Music</td>
<td>MUS</td>
</tr>
<tr>
<td>Nursing Assistant</td>
<td>NRSA</td>
</tr>
<tr>
<td>Nursing, Registered</td>
<td>NRSR</td>
</tr>
<tr>
<td>Nutrition &amp; Food Science</td>
<td>NUTF</td>
</tr>
<tr>
<td>Perceptual Training</td>
<td>PRCP</td>
</tr>
<tr>
<td>Personal Development</td>
<td>PDEV</td>
</tr>
<tr>
<td>Philosophy</td>
<td>PHIL</td>
</tr>
<tr>
<td>Photography</td>
<td>PHOT</td>
</tr>
<tr>
<td>Physical Education</td>
<td>PHED</td>
</tr>
<tr>
<td>Physics</td>
<td>PHYS</td>
</tr>
<tr>
<td>Political Science</td>
<td>POLS</td>
</tr>
<tr>
<td>Psychology</td>
<td>PSYC</td>
</tr>
<tr>
<td>Recreation Management</td>
<td>RECM</td>
</tr>
<tr>
<td>Skill Development</td>
<td>SKDV</td>
</tr>
<tr>
<td>Social Science</td>
<td>SSCI</td>
</tr>
<tr>
<td>Sociology</td>
<td>SOC</td>
</tr>
<tr>
<td>Spanish</td>
<td>SPAN</td>
</tr>
<tr>
<td>Welding Technology</td>
<td>WELD</td>
</tr>
<tr>
<td>Women and Gender Studies</td>
<td>WMST</td>
</tr>
</tbody>
</table>
The courses described in this catalog may not be offered every term or every year. Check the schedule of classes for the current term’s class offerings. Course outlines for all courses are on file in the Office of Instruction.

**Cross-Listed Courses**
Courses that are cross-listed in more than one discipline are noted as such under the course title, (e.g., ENGL 44 Introduction to Children’s Literature, Also known as HDEV 44). It may be completed only one time under either discipline.

**Course Numbering System**

| 0-299 | Degree-applicable credit courses (includes courses with letter designations), may be accepted by the California State Universities and the University of California system |
| 300-399 | Degree-applicable credit courses in selected topics, generally transferable to the California State Universities and in some instances to the University of California system *(Unless otherwise indicated, transfer credit for a “300” selected topics course is given only after review of the specific course outline/syllabus by the enrolling UC campus and may not be included in the UC admission decision.)* |
| 400-449 | Degree-applicable credit courses in selected topics, generally not transferable to four-year institutions |
| 500-599 | Nondegree-applicable basic skills credit courses in reading, writing, computation, and English as a Second Language (limited to 30 units); see a counselor for limitation restrictions and exemptions |
| 600-799 | Nondegree-applicable credit courses |
| 800-899 | Noncredit courses (not graded, zero unit) |

**Course Units**
Units of credit are based upon a relationship between the number of units assigned to the course and the number of lecture and/or laboratory hours or performance criteria specified in the course outline. Courses require a minimum of three hours of student work per week, including class time for each unit of credit, prorated for short-term, extended term, laboratory and/or activity courses.

**Transfer Status Designation**
The transfer status of a course is indicated at the end of the course description.

- (CSU) indicates that the course credit transfers to all of the California State University campuses.
- (CSU-with unit limitation) indicates that there is a restriction on CSU course transferability. See pages 54-55 for specific limitations.
- (CSU, UC) indicates that the course credit transfers to all of the California State University and University of California campuses.
- (CSU, UC-with unit limitation) indicates that there is a restriction on UC course transferability. See page 56 for specific limitations.

Courses that are marked (not transferable), (not degree-applicable), or (noncredit) are not transferable to a university.

**Course Prerequisites, Corequisites and Advisories**
Sierra College strives to guide students into courses in which they will have the greatest chance for academic success. The following are the definitions for prerequisites, corequisites and advisory preparation:

- **Prerequisite** means a condition of enrollment that students are required to meet in order to demonstrate current readiness for enrollment in a course or educational program. “C” is the designated minimum grade for prerequisite courses.
- **Corequisite** means a condition of enrollment consisting of a course that students are required to simultaneously take in order to enroll in another course.
“Advisory” means a condition of enrollment that students are advised, but not required, to meet before or in conjunction with enrollment in a course or educational program.

Course Hours
Each course description lists approved course hours as the total number of lecture, laboratory and/or activity hours for the semester. These hours do not include expected independent work/study done outside of class.

Course Grading
Most courses may be taken for a letter grade or on a pass/no pass basis at the student’s discretion. Courses that are restricted to specific grading are identified as such at the end of the course description. Courses that must be taken for a letter grade are noted, “letter grade only;” courses that may only be taken on a pass/no pass basis are identified with, “pass/no pass grading.” If no such identification is listed, students have the option to choose, within published deadlines, the type of grading. No more than one course may be taken on a pass/no pass basis per term.

Course Repeatability
Courses that are designated as repeatable are identified as such at the end of the course description, e.g., may be taken three times for credit. If no such notation is included, the course is not considered repeatable.

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 at the end of a course description signals that participating California community 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 SOCI 110, students at that college can be assured that it will be accepted in lieu of a course bearing the C-ID SOCI 110 designation at another community college. In other words, the C-ID designation can be used to identify comparable courses at different community colleges. 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.

**Independent Study Courses**

### 28 INDEPENDENT STUDY:

- **Units:** 1-3
- **Transferable to CSU, UC-with limitation**
- **Hours to Complete Course:** 54 hours per unit

Independent study courses may be taken one time for credit per discipline. These courses are designed for students interested in furthering their knowledge, at an independent study level, in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects.

#### Arrangements:
A student may enroll by (1) requesting a Sierra College Independent Study Project from the appropriate Division Office; (2) contacting the appropriate professor for approval; (3) submitting the completed Independent Study Project form to the Division Dean for approval and issuance of an add code; (4) submitting the approved Independent Study Project form to a campus Admissions & Records Office.

*Transfer credit for these courses is given only after review of the course by the enrolling UC campus.*

**Internship Courses**

### 95 INTERNSHIP:

- **Units:** .5-4
- **Transferable to CSU-with limitation**
- **Hours to Complete Course:** 60 hours per unit for non-paid work; 75 hours per unit for paid work. The total of all types of internship units cannot exceed 16.

#### Objectives:
Occupational Work Experience designed for advanced students to expand their knowledge and skills in an area related to their college major.

#### Arrangements:
Students must be continuing Sierra College students, have a minimum 2.0 GPA and attend a mandatory orientation. A written instructional agreement must be developed between the instructor, supervisor and student before the student is approved as an intern. Although some sites offer a wage or a stipend as compensation, most internships are unpaid.

*Total of all internship units transferred to CSU may not exceed 16.*

---

**Understanding Course Descriptions**

---

**SIERRA COLLEGE CATALOG 2013–2014**

59
ADMINISTRATION OF JUSTICE

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION
DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
FACULTY COORDINATOR: N. Willick
AREA OFFICE: Room 217, Roseville Gateway Center, Phone (916) 781-6273
FACULTY: S. Linthicum, B. Spaulding
LIAISON COUNSELORS: T. Maddux, P. Neal

The Administration of Justice program offers three areas of concentration. Each area has its own core classes everyone must complete. In addition, a minimum of six additional units must be selected from the degree concentration to complete the degree program. Courses are available in Law Enforcement, specializing in police activities including effective patrol services to the public. Courts, specializing in responsibilities to the public through the trial system. Corrections, where the deviant member of society is subjected to society’s effort to change the deviant behavior. Courses continue to be developed and modified to conform to the needs expressed by the public in each of the three areas of concentration.

TRANSFER MAJOR REQUIREMENTS in Administration of Justice are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Four-year graduates in Administration of Justice are qualified for positions in law enforcement, retail security, corrections and pre-law.

ADMINISTRATION OF JUSTICE FOR TRANSFER AS-T DEGREE

The Associate in Science in Administration of Justice for Transfer (AS-T) degree program allows students to recognize the importance of ethics and professionalism within the criminal justice field; analyze and apply legal principles to the daily operations of law enforcement, the courts and corrections; and analyze and critically evaluate information to solve problems within the criminal justice field.

The Associate in Science in Administration of Justice for Transfer degree prepares students to transfer into the CSU system to complete a bachelor’s degree in Administration of Justice. Students completing the Associate in Science in Administration of Justice for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Science in Administration of Justice for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

• completion of the major requirements with grades of C or better; and

• certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMJ 50 Introduction to Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 55 Concepts of Criminal Law</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMJ 52 Criminal Court Process</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 54 Introduction to Investigation</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 56 Introduction to Evidence</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 57 Juvenile Law and Procedure</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 58 Community and the Justice System</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 62 Introduction to Corrections</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6-7 ADDITIONAL UNITS FROM THE FOLLOWING OR ANY UNUSED COURSES FROM THE PRECEDING AREA:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100 General Principles of Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 1 Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 15 Introduction to Statistics in Sociology OR MATH 13 Elementary Statistics</td>
<td>3-4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 18-19
## ADMINISTRATION OF JUSTICE—
### LAW ENFORCEMENT CONCENTRATION
#### A.A. OR A.S. DEGREE

The Law Enforcement curriculum prepares students for a career as a peace officer. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMJ 50</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 54</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 55</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 56</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 58</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 151</td>
<td>2</td>
</tr>
</tbody>
</table>

### PLUS 6 ADDITIONAL UNITS FROM:

- ADMJ 51 Traffic Investigations and Enforcement .............. 3
- ADMJ 52 Criminal Court Process .................................. 3
- ADMJ 53 Police Field Operations ................................. 3
- ADMJ 57 Juvenile Law and Procedure .............................. 3
- ADMJ 60 Defensive Tactics for Law Enforcement .................. 1
- ADMJ 61A Firearms Familiarization ................................ 2
- ADMJ 61B Advanced Firearms ...................................... 2
- ADMJ 61C Firearms: Semi-automatics .............................. 2
- ADMJ 61D Firearms Instructor .................................... 2
- ADMJ 61E Firearms Instructor POST ............................... 2.5
- ADMJ 70 Substantive Law ........................................... 3
- ADMJ 72 Illegal Drugs—Recognition and Influence ................ 3
- ADMJ 73 Writing for Criminal Justice ............................ 3
- ADMJ 74 Computer Use in Criminal Justice ....................... 3
- ADMJ 75 Values and Ethics in Criminal Justice ................. 3
- ADMJ 76 Street and Prison Gangs ................................. 3
- ADMJ 88 Computer Forensics (also CIS 88) ....................... 3
- ADMJ 89 Fraud Examination ...................................... 3
- ADMJ 110 P.C. 832: Arrest and Control ........................... 2
- ADMJ 112 P.C. 832: Firearms ..................................... 5
- ADMJ 115 POST Modular III Training ............................. 7
- ADMJ 120 Post Modular II Training ............................... 9
- ADMJ 200 Family Violence: Spousal/Partner, Child and Elder Abuse .............................. 3

**TOTAL UNITS REQUIRED: 23**

## ADMINISTRATION OF JUSTICE—
### COURTS CONCENTRATION
#### A.A. OR A.S. DEGREE

The Courts Concentration curriculum prepares students for positions in the judicial system. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMJ 50</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 52</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 55</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 56</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 57</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 74</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 75</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 76</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 88</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 89</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 110</td>
<td>2</td>
</tr>
<tr>
<td>ADMJ 112</td>
<td>5</td>
</tr>
<tr>
<td>ADMJ 115</td>
<td>7</td>
</tr>
<tr>
<td>ADMJ 120</td>
<td>9</td>
</tr>
<tr>
<td>ADMJ 200</td>
<td>3</td>
</tr>
</tbody>
</table>

### PLUS 6 ADDITIONAL UNITS FROM:

- ADMJ 70 Substantive Law ........................................... 3
- ADMJ 73 Writing for Criminal Justice ............................ 3
- ADMJ 74 Computer Use in Criminal Justice ....................... 3
- ADMJ 75 Values and Ethics in Criminal Justice ................. 3
- ADMJ 200 Family Violence: Spousal/Partner, Child and Elder Abuse .............................. 3

**TOTAL UNITS REQUIRED: 23**

## ADMINISTRATION OF JUSTICE—
### CORRECTIONS CONCENTRATION
#### A.A. OR A.S. DEGREE

The Corrections Concentration curriculum prepares students for careers in corrections, probation and parole. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMJ 50</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 55</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 56</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 62</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 67</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 151</td>
<td>2</td>
</tr>
</tbody>
</table>

### PLUS 6 ADDITIONAL UNITS FROM:

- ADMJ 52 Criminal Court Process .................................. 3
- ADMJ 60 Defensive Tactics for Law Enforcement ................ 1

**TOTAL UNITS REQUIRED: 23**
ADMJ 53 POLICE FIELD OPERATIONS  
**Units:** 3  
*Hours: 54 lecture*  
History and development of patrol philosophy; field activities including patrol, complaints, requests for services, field interviews, searches, arrests, traffic problems, disturbances and other community or criminal incidents. 
(CSU)

ADMJ 54 INTRODUCTION TO INVESTIGATION  
**Units:** 3  
*Hours: 54 lecture*  
Fundamentals of investigation; addresses the techniques, procedures and investigation of crime, including organization of crime scene searches and recording; collection and preservation of evidence; sources of information; surveillance; interview and interrogation; follow-up investigation; resources; scientific analysis of evidence, case preparation and the role of the investigator in the trial process.  
(C-ID AJ 140) (CSU)

ADMJ 55 CONCEPTS OF CRIMINAL LAW  
**Units:** 3  
*Hours: 54 lecture*  
Historical development, philosophy of common and statutory law and constitutional provisions related to due process; definitions, classifications and general elements of crimes as applied to the administration of justice; legal research, review of case law, methodology and concepts of law as a social force and analysis of criminal liability, defense to crimes and the classification of crimes against persons, property, morals and public welfare.  
(C-ID AJ 120) (CSU, UC)

ADMJ 56 INTRODUCTION TO EVIDENCE  
**Units:** 3  
*Hours: 54 lecture*  
Origin, development, philosophy and legal basis of evidence; types of evidence; ways of presenting evidence; judicial decisions and statutory rules of evidence governing the admissibility of testimony, writings, materials and objects at a criminal trial; constitutional and procedural considerations affecting searches, seizures, admissions, confessions and methods of identification.  
(C-ID AJ 124) (CSU)

ADMJ 57 JUVENILE LAW AND PROCEDURE  
**Units:** 3  
*Hours: 54 lecture*  
Organization, functions and jurisdiction of juvenile agencies; the processing and detention of juveniles; techniques of handling juvenile offenders and victims; prevention and suppression of delinquency; diagnosis and referral; community resources; law and court procedures.  
(C-ID AJ 220) (CSU)
ADMJ 58 COMMUNITY AND THE JUSTICE SYSTEM  
Units: 3  
Hours: 54 lecture  
In-depth survey of the relationship between the criminal justice system and the community; causal and symptomatic aspects of community misunderstanding, lack of cooperation and mistrust; the concept that community relations develop through a continuing process of interaction between the criminal justice system and members of the public. Methods for understanding how such a relationship is developed, changed and maintained. Examines the complex, dynamic relationship between communities and the justice system in addressing crime and conflict with an emphasis on the challenges and prospects of administering justice within a diverse multicultural population. (C-ID AJ 160) (CSU, UC)

ADMJ 60 DEFENSIVE TACTICS FOR LAW ENFORCEMENT  
Units: 1  
Hours: 36 (18 lecture, 18 laboratory)  
Skills and techniques to address combative subjects both armed and unarmed; includes take downs, control holds, escapes, handcuffing and weapon retention or removal. (not transferable)

ADMJ 61A FIREARMS FAMILIARIZATION  
Units: 2  
Hours: 54 (27 lecture, 27 laboratory)  
Introductory course covering history of firearms, types and selection of weapons, ammunition and auxiliary equipment, firearm nomenclature, principles of safe shooting, weapon safety, maintenance and care, legal and moral aspects of weapon usage for both law enforcement and non-law enforcement and development of individual shooting skills and safety. Qualifying at the firing range with a handgun. Safety fee required. (not transferable)

ADMJ 61B ADVANCED FIREARMS  
Units: 2  
Prerequisite: Completion of any of the following: ADMJ 61A; 61C; 112; 115; 120; Basic Police Academy Course certified by California P.O.S.T.  
Hours: 54 (27 lecture, 27 laboratory)  
An advanced course further developing skills and theory introduced in ADMJ 61A, with practical applications in varied complex settings. Emphasis on further study and practice of functional testing of firearms, sight alignment adjustments and self-evaluation of shooting performance. Development of additional skills and knowledge necessary to teach firearm safety and techniques to enhance shooting skills. Safety fee required. (not transferable)

ADMJ 61C FIREARMS: SEMI-AUTOMATICS  
Units: 2  
Hours: 54 (27 lecture, 27 laboratory)  
Practical semi-automatic handgun course. Includes history and evolution of semi-automatics, types and uses, nomenclature, ammunition, marksmanship techniques, malfunctions, safety and development of individual shooting skills. Safety fee required. (not transferable)

ADMJ 61D FIREARMS INSTRUCTOR  
Units: 2  
Prerequisite: Successful completion of ADMJ 61A, 61B and 61C; or completion of ADMJ 61B and a California Commission on Peace Officer Standards and Training (POST) certified Police Academy  
Hours: 54 (36 lecture, 18 laboratory)  
Knowledge and skills to train others in firearm safety, marksmanship and range program development. Includes fundamentals of marksmanship, curriculum development, firearms safety, range management, handgun/shotgun theory and nomenclature, developing qualification courses and diagnosing shooting problems through practical shooting exercises. Firearms Instructor certificate issued for those achieving 80% on the written examination and range qualifications. (not transferable)

ADMJ 61E FIREARMS INSTRUCTOR POST  
Units: 2.5  
Prerequisite: Successful completion of a California Commission on Peace Officer Standards and Training (POST) certified Police Academy and possess a POST basic certificate  
Hours: 80 (36 lecture, 44 laboratory)  
Knowledge and skills to train police officers in firearm safety, marksmanship and range program development. Includes fundamentals of marksmanship, curriculum development, firearms safety, range management, handgun/shotgun theory and nomenclature, developing qualification courses and diagnosing shooting problems through practical shooting exercises. Firearms Instructor certificate issued for those achieving 80% on the written examination and range qualifications. Safety fee required. (not transferable)

ADMJ 62 INTRODUCTION TO CORRECTIONS  
Units: 3  
Hours: 54 lecture  
Provides a history and critical analysis of the various types of punishment, alternatives to punishment and impact of punishment on the Criminal Justice System; explanations of criminal behavior; functions and objectives of the Criminal Justice System concerned with institutionalization, probation, parole and other sentencing alternatives; critical examination of the types of correctional institutions, their clients and contemporary correctional issues. (C-ID AJ 200) (CSU)

ADMJ 67 MANAGING THE ADULT OFFENDER  
Units: 3  
Advisory: Completion of ADMJ 62 recommended  
Hours: 54 lecture  
A survey course emphasizing behavior and characteristics of male and female offenders and the role of the correctional employee. Institutional environment, inmate subcultures, values, victimology and gangs also discussed and analyzed. Population management issues, statistics, inmate rights, discipline and contemporary custody and treatment techniques identified and studied. (CSU)
ADMJ 69 INSTITUTIONAL CORRECTIONS AND CASEWORK  
Formerly known as ADMJ 63 and 66  
Units: 3  
Prerequisite: Completion of ADMJ 62 or 67 with grade of “C” or better  
Hours: 54 lecture  
Institutional security levels, operations and design. Inmate classification, institutional programs, treatment and intervention modalities and casework responsibility. Fiscal issues, legislation, current issues and societal attitudes affecting corrections. Custodial and ancillary career opportunities. Tours of various correctional institutions required. (CSU)

ADMJ 70 SUBSTANTIVE LAW  
Units: 3  
Hours: 54 lecture  
An in-depth study of penal and other codes which have an application to law enforcement. Includes misdemeanor and felony violations of the criminal statutes involving crimes against persons and property, public peace, dangerous weapons, narcotics and vice violations. (CSU)

ADMJ 72 ILLEGAL DRUGS—RECOGNITION AND INFLUENCE  
Units: 3  
Hours: 54 lecture  
Study of current drugs of abuse including identification, street terms, prices, methods of use, history and recognizing persons under the influence. Current law and law enforcement trends. Introduction to human physiology and drugs. (CSU)

ADMJ 73 WRITING FOR CRIMINAL JUSTICE  
Units: 3  
Hours: 54 lecture  
Techniques of communicating facts, information and ideas effectively in a simple, clear and logical manner in the various types of criminal justice system reports; letters, memoranda, directives and administrative reports; emphasis on criminal justice terminology, use of English and organization of information. Practical experience in note taking and report writing; presentation of testimony in court. (CSU)

ADMJ 74 COMPUTER USE IN CRIMINAL JUSTICE  
Units: 3  
Hours: 72 (54 lecture, 18 laboratory)  
An introduction to system strategies and computer techniques used by law enforcement agencies. Computer procedures, terminology and program applications that produce crime support data. Database applications found in law enforcement identification, CAD (Computer Assisted Dispatch) systems, statistics, investigations and records management systems. (CSU)

ADMJ 75 VALUES AND ETHICS IN CRIMINAL JUSTICE  
Units: 3  
Hours: 54 lecture  
Stresses the importance of values and ethics and appropriate moral judgments necessary in the administration of justice field. Provides an understanding of values and integrity which must be displayed and communication skills necessary to be an effective criminal justice practitioner. (CSU)

ADMJ 76 STREET AND PRISON GANGS  
Units: 3  
Hours: 54 lecture  
Theories of gang membership and behavior; law enforcement, community and correctional intervention; characteristics and activities of prison and street gangs; impact on correctional and law enforcement operations and society. (CSU)

ADMJ 88 COMPUTER FORENSICS  
Also known as CIS 88  
Units: 3  
Advisory: Completion of ADMJ 54  
Hours: 72 (54 lecture, 18 laboratory)  
Introduces tools and techniques of preserving and investigating digital evidence in a systematic and scientifically reliable manner using modern computer forensic software applications. Students introduced to the interpretation and analysis of recovered data for the purpose of collecting legal evidence. Exposure to data in an array of formats and applications from several computer types and operating systems as well as deleted, encrypted and damaged information. Evidence reporting practices also introduced. (CSU)

ADMJ 89 FRAUD EXAMINATION  
Units: 3  
Advisory: Completion of ADMJ 54  
Hours: 54 lecture  
Covers principles and methodology of fraud detection and deterrence. Includes topics such as skimming, cash larceny, check tampering, register disbursement schemes, billing schemes, payroll and expense reimbursement schemes, non-cash misappropriations, corruption, accounting principles and fraud, fraudulent financial statements and interviewing witnesses. (CSU)

ADMJ 95 INTERNSHIP IN ADMINISTRATION OF JUSTICE  
Units: 0.5-4  
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)
ADMJ 110 P.C. 832: ARREST AND CONTROL
Units: 2
Hours: 44 (36 lecture, 8 laboratory)
Covers ethics, courts, community relations, laws of arrest, use of force, search and seizure, investigations and arrest and control methods. Meets California Penal Code Section 832 requirement for individuals having limited Peace Officer powers to complete a training course prescribed by the Commission on Peace Officer Standards and Training (POST). No longer meets modular Police Academy requirements. (not transferable)

ADMJ 112 P.C. 832: FIREARMS
Units: 0.5
Prerequisite: California Department of Justice certification of no disqualifying criminal history background preventing attendance
Advisory: Completion of ADMJ 110 or equivalent
Hours: 24 (8 lecture, 16 laboratory)
Covers use of lethal force, shooting principles, safety guidelines and range qualifications. Meets California Penal Code Section 832 firearms requirement for individuals having limited Peace Officer powers to complete a training course prescribed by the Commission on Peace Officer Standards and Training (POST). (pass/no pass grading) (not transferable)

ADMJ 115 POST MODULAR III TRAINING
Units: 7
Prerequisite: California Department of Justice certification of no disqualifying criminal history background preventing attendance and Department of Motor Vehicles clearance
Advisory: Successful completion of ADMJ 61A or equivalent; ADMJ 73 or equivalent; and ENGL A or equivalent
Hours: 167 (107 lecture, 60 laboratory)
Satisfies Module III training requirements of the Commission on Peace Officer Standards and Training Module III. Covers professionalism and ethics, report writing, preservation of evidence, crimes against the justice system, vehicle operations, traffic enforcement, laws of search and seizure, custody, arrest/con- trol/baton, emergency care, firearms/chemical agents, community policing, information systems and cultural diversity issues. Safety and materials fees required. May be repeated for credit to meet legally mandated education/training requirements. (not transferable)

ADMJ 120 POST MODULAR II TRAINING
Units: 9
Prerequisite: Completion of Commission on Peace Officer Standards and Training Module III training standards and California Department of Justice certification of no disqualifying criminal history background preventing attendance and Entry Level Law Enforcement Test Battery with a minimum t-score of 40
Advisory: Completion of ADMJ 61C or equivalent; ADMJ 73 or equivalent; and ENGL A or equivalent
Hours: 223 (138 lecture, 85 laboratory)
Satisfies training requirements of the Commission on Peace Officer Standards and Training Level II module. Covers community relations, criminal laws, search and seizure, evidence, report writing, enforcement techniques, crime scene investigation, property crimes, crimes against persons, investigations, arrest and control, firearms/chemical agents, crimes against the justice system and cultural diversity/discrimination. Safety and materials fees required. May be repeated for credit to meet legally mandated education/training requirements. (not transferable)

ADMJ 151 ADMINISTRATION OF JUSTICE PATHWAYS
Units: 2
Hours: 40 lecture
Covers career pathways in the Administration of Justice. Includes educational planning of available degree programs, labor market research and the hiring process: development of a resume, background investigations, personal history statements, interview dynamics and hiring examinations. (not transferable)

ADMJ 200 FAMILY VIOLENCE: SPOUSAL/PARTNER, CHILD AND ELDER ABUSE
Units: 3
Hours: 54 lecture
Covers historical, cultural, psychological and social precursors and effects of the three primary forms of domestic violence: spousal/partner, child and elder abuse. Responsibilities and roles of law enforcement, prosecution, court, corrections, medical and social service professionals are studied. Crisis intervention, multi- disciplinary investigation and interviewing, forensic examination and adjudication issues are addressed. Examines other legal issues including mandated reporting and protective orders and explores both prevention and intervention resources available in the community. (not transferable)

ADMJ 300 SELECTED TOPICS IN ADMINISTRATION OF JUSTICE
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/ laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU)
ADMJ 400 SELECTED TOPICS IN ADMINISTRATION OF JUSTICE  
Units: 0.5-4  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

ADMJ 610 SPECIAL WEAPONS AND TACTICS—ADVANCED  
Units: 0.5  
Prerequisite: Completion of POST Basic Academy and employment as a Peace Officer assigned to a Special Weapons and Tactics team  
Hours: 24 (5 lecture, 19 laboratory)  
Reality based training focusing on team challenges designed to test a SWAT team’s methods and capabilities. Emphasis on team movement, hostage rescues, advanced firearms usage, physical endurance and team problem exercises. May be repeated for credit to meet legally mandated requirements. (pass/no pass grading) (not degree applicable)

ADMJ 630 PROFESSIONAL TRAINING FOR CRIMINAL JUSTICE PERSONNEL  
Units: 0.5-3  
Prerequisite: Appropriate federal and/or state certification (POST/STC) entry standards  
Hours: 54 laboratory per unit  
Satisfies required standards for law enforcement personnel in areas of knowledge, techniques and perishable skills. Emphasis on laws of arrest; search and seizure; first aid and CPR; firearms; defensive tactics; illegal drugs, officers safety; civil liability; ethics; communication skills; interview and interrogations; investigations; crime scene processing; and report writing. May be repeated for credit to meet legally mandated education/training requirements. (pass/no pass grading) (not degree applicable)

ADMJ 631 SPANISH FOR LAW ENFORCEMENT  
Units: 0.5  
Prerequisite: Completion of PC 832, Academy Module III or POST Basic Academy  
Hours: 9 lecture  
Functional Spanish course designed for Law Enforcement personnel. Students will learn the basic commands to complete a car stop, handcuffing and the Miranda advisement. (pass/no pass grading) (not degree applicable)

ADMJ 632 CRIME SCENE INVESTIGATIONS FOR THE PATROL OFFICER  
Units: 0.5  
Prerequisite: Completion of POST Basic Academy  
Hours: 16 lecture  
Fine tune the skills obtained in the Basic Academy regarding crime scene investigations for the patrol officer. Topics include fingerprinting, chain of evidence, videographing and the recognition of evidence and the importance of recording placement. (pass/no pass grading) (not degree applicable)

ADMJ 633 MEDIA RELATIONS FOR LAW ENFORCEMENT  
Units: 0.5  
Hours: 9 lecture  
Designed to prepare the line officer to work with the media and give a press release. (pass/no pass grading) (not degree applicable)

ADMJ 634 REPORT WRITING REVIEW FOR LAW ENFORCEMENT  
Units: 0.5  
Prerequisite: Completion of PC 832 (ADMJ 110), Academy Module III (ADMJ 115), or POST Basic Academy  
Hours: 9 lecture  
Course designed for law enforcement personnel who need a refresher report writing course. (pass/no pass grading) (not degree applicable)

ADMJ 635 INTERVIEW AND INTERROGATION FOR LAW ENFORCEMENT  
Units: 0.5  
Prerequisite: Completion of POST Basic Academy  
Hours: 9 lecture  
Designed to provide officers with the knowledge to recognize distinct differences between interviews and interrogations. Legal issues and how to obtain truth from suspects, witnesses and victims will also be covered. (pass/no pass grading) (not degree applicable)

ADMJ 636 BASIC TRAFFIC COLLISION INVESTIGATION  
Units: 1  
Prerequisite: Completion of POST Basic Academy  
Hours: 24 (18 lecture, 6 laboratory)  
Designed to provide officer with basic traffic collision investigation, including knowledge and skills necessary to conduct traffic collisions investigations to develop reasonable cause for establishing fault pursuant to California Vehicle Code section 40600. (pass/no pass grading) (not degree applicable)
ADMI 637 DRUG ABUSE RECOGNITION

Units: 1
Prerequisite: Completion of POST Basic Academy
Hours: 24 lecture

Provides officers with the knowledge and skills to recognize signs and symptoms of drug influence, the DAR 7-step system, drug trends, how drugs affect the central nervous system, drug laws, report preparation and expert court testimony. (pass/no pass grading) (not degree applicable)

SCIENCE AND MATHEMATICS

DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211
FACULTY: M. Macfarlane
LIAISON COUNSELORS: M. Braga, E. Farrelly

Sustainable agriculture is an integrated system of plant and animal production practices having a site-specific application that will, over the long-term, satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agriculture economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations and enhance the quality of life for farmers and society as a whole.

TRANSFER AND MAJOR REQUIREMENTS in Agriculture are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements.

SUSTAINABLE AGRICULTURE

A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

(FORMERLY AGRICULTURE)

The Sustainable Agriculture major combines the skills and knowledge to incorporate economic viability, environmental stewardship and social responsibility in food and farming systems. This broad-based degree/certificate combines plant and soil science, animal science and business in a hands-on approach to prepare students for the workforce or for transfer to a four-year institution. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Re-

requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 156 Horticultural Plant Science (also BIOL 21)</td>
<td>4</td>
</tr>
<tr>
<td>AGRI 196 Introduction to Sustainable Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 200 Introduction to Animal Science</td>
<td>4</td>
</tr>
<tr>
<td>AGRI 212 Direct Farm Marketing</td>
<td>2</td>
</tr>
<tr>
<td>AGRI 215 Introduction to Agricultural Business and Economics</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 221 Introduction to Soil Science</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 ADDITIONAL UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 95 Internship in Agriculture</td>
<td>1-4</td>
</tr>
<tr>
<td>AGRI 158A Plant Identification OR</td>
<td></td>
</tr>
<tr>
<td>AGRI 158B Plant Identification</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 159 Integrated Pest Management</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 160A Fall Propagation Lab OR</td>
<td></td>
</tr>
<tr>
<td>AGRI 160B Spring Propagation Lab</td>
<td>1</td>
</tr>
<tr>
<td>AGRI 164 Sustainable Tree Care</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 198 Food, Society and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 203 Animal Feeds and Nutrition</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 25

SUSTAINABLE AGRICULTURE BUSINESS SKILLS CERTIFICATE

Designed to give students the small sustainable farm business management knowledge and abilities to successfully enter the workforce as a small farm owner or manager. This skills certificate focuses on skills and knowledge relative to the principles of agribusiness management, sustainable agriculture and direct farm marketing. This is a specialty certificate designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 196 Introduction to Sustainable Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 212 Direct Farm Marketing</td>
<td>2</td>
</tr>
<tr>
<td>AGRI 215 Introduction to Agricultural Business and Economics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140 Small Business Management</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 11

AGRICULTURE COURSES »

AGRI 28 INDEPENDENT STUDY

Units: 1-3

Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)
AGRI 95 INTERNSHIP IN AGRICULTURE  
Units: 0.5-4  
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

AGRI 156 HORTICULTURAL PLANT SCIENCE  
Formerly known as HORT 2  
Also known as BIOL 21  
Units: 4  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 108 (54 lecture, 54 laboratory)  
Introduction to biological principles of horticultural practices emphasizing structure, growth, physiology and reproduction of flowering plants and their responses to modifications and environment; including propagation, media, soil and plant nutrition. Explores the interrelationship of horticulture with other life sciences and technology. Identifies the value of plants and gardens in past and present societies. (CSU, UC)

AGRI 158A PLANT IDENTIFICATION  
Formerly known as HORT 35A  
Units: 3  
Hours: 90 (36 lecture, 54 laboratory)  
Designed to develop skills for identifying and selecting plants whose requirements fit specific criteria for landscape and garden applications. Topics include species identification, growth habits, culture and ornamental use of plants adapted to climates of California. Emphasis on plants from the current California Association of Nurserymen & Garden Centers (CANGC) and Associated Landscape Contractors of America (ALCA) Certification Test Plant Lists. Focus on species best observed in fall months. Ability to hike moderate distances may be required. Students may begin with either AGRI 158A or AGRI 158B. (CU, UC-with unit limitation)

AGRI 158B PLANT IDENTIFICATION  
Formerly known as HORT 35B  
Units: 3  
Hours: 90 (36 lecture, 54 laboratory)  
Designed to develop skills for identifying and selecting plants whose requirements fit specific criteria for landscape and garden applications. Topics include species identification, growth habits, culture and ornamental use of plants adapted to climates of California. Emphasis on plants from the current California Association of Nurserymen & Garden Centers (CANGC) and Associated Landscape Contractors of America (ALCA) Certification Test Plant Lists. Focus on species best observed in spring months. Ability to hike moderate distances may be required. Students may begin with either AGRI 158A or AGRI 158B. (CSU, UC-with unit limitation)

AGRI 159 INTEGRATED PEST MANAGEMENT  
Formerly known as HORT 52  
Units: 3  
Hours: 54 lecture  
Comprehensive study of integrated pest management with emphasis on sustainable management practices of landscape and small crop pests. Includes identification and study of insects, weeds, plant diseases, vertebrate pests and beneficial organisms. Studies least toxic pest control strategies, labeling, formulations and safe handling of pesticides. (CSU)

AGRI 160A FALL PROPAGATION LAB  
Formerly known as HORT 134A  
Units: 1  
Hours: 54 laboratory  
Provides an advanced level of skill, technique and experience in fall plant production. Continued in-depth studies of propagation materials, sexual and asexual reproduction, transplanting and planting. Preparation and use of propagation and planting media. Student’s involvement in organized plant sales is required. (not transferable)

AGRI 160B SPRING PROPAGATION LAB  
Formerly known as HORT 134B  
Units: 1  
Hours: 54 laboratory  
Provides an advanced level of skill, technique and experience in spring plant production. Continued in-depth studies of propagation materials, sexual and asexual reproduction, transplanting and planting. Preparation and use of propagation and planting media. Student’s involvement in organized plant sales is required. (not transferable)

AGRI 163 WILDLAND TREES AND SHRUBS (DENDROLOGY)  
Formerly known as NATR 25  
Also known as BIOL 24  
Units: 4  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 108 (54 lecture, 54 laboratory)  
Botanical characteristics, taxonomy, physiology and community relationships of the major trees and shrubs in the Western United States. Discussion of commercial uses and geographic ranges of these plants. Identifying specimens under field conditions and using herbarium specimens. (CSU)

AGRI 164 SUSTAINABLE TREE CARE  
Formerly known as HORT 40  
Units: 3  
Hours: 90 (36 lecture, 54 laboratory)  
Sustainable horticultural principles and practices for management and care of trees in urban and landscape settings. Includes tree biology and culture, proper tree selection, maintenance, planting, staking, pruning techniques, tree hazard assessment and risk management. Current issues in urban forestry and trees in the urban environment will be covered. (CSU)
AGRI 182 WILDFLOWER IDENTIFICATION
Formerly known as HORT 181
Also known as BIOL 23
Units: 1
Hours: 26 (13 lecture, 13 activity)
Plant identification, terminology, keying, uses and ecology. Field trips may require ability to hike moderate distances. (CSU)

AGRI 196 INTRODUCTION TO SUSTAINABLE AGRICULTURE
Units: 3
Hours: 54 lecture
Introduction to the concepts and principles of agroecology as applied to the design and management of sustainable agricultural systems. Includes examination of case studies connecting sustainable agriculture principles to farming practices. (CSU)

AGRI 198 FOOD, SOCIETY AND THE ENVIRONMENT
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Multiple perspectives and global connections between the environment, society and food production. Emphasis on agriculture’s central position between nature and society and its key role in humanity’s search for a productive and sustainable environment. (CSU, UC)

AGRI 200 INTRODUCTION TO ANIMAL SCIENCE
Units: 4
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 108 (54 lecture, 54 laboratory)
An overview of the principles of animal science and the interrelationships of domestic animals and mankind. Introduces various disciplines, including cell function, genetics, anatomy and physiology, reproduction, nutrition, animal health, animal products and animal behavior. (CSU, UC)

AGRI 203 ANIMAL FEEDS AND NUTRITION
Formerly known as AGRI 12
Units: 4
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 108 (54 lecture, 54 laboratory)
An introduction to the feeds and nutrition of animals including basic digestive system anatomy and physiology; composition and selection of feeds; characteristics of nutrients; principles of nutrition; nutrient requirements of non-ruminant and ruminant animals; and formulating diets to meet these requirements. (CSU)

AGRI 212 DIRECT FARM MARKETING
Units: 2
Hours: 36 lecture
Overview of direct farm marketing. Includes innovative marketing alternatives for the small to medium size grower, proven methods of product development, promotion, pricing and distribution. (not transferable)

AGRI 215 INTRODUCTION TO AGRICULTURAL BUSINESS AND ECONOMICS
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
An overview of the role agriculture business plays in United States and world economies. Production and supply, marketing and demand, resource allocation, commodity pricing under perfect and imperfect competition are some of the topics discussed as well as social and economic challenges of agriculture in urban and industrialized economies emphasizing California. (CSU, UC)

AGRI 221 INTRODUCTION TO SOIL SCIENCE
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 90 (36 lecture, 54 laboratory)
Soils as natural bodies formed by interactive environmental processes, classification and characteristics. Soil response to use and management including erosion, moisture retention, structure, cultivation, organic matter and microbiology. Laboratory topics include soil type, classification, soil reaction, soil fertility and physical properties of soil. (CSU, UC)

AGRI 300 SELECTED TOPICS IN AGRICULTURE
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC- with unit limitation)

AGRI 400 SELECTED TOPICS IN AGRICULTURE
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)
ANTHROPOLOGY

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: M. Archer, J. Molina-Stidger
LIAISON COUNSELORS: M. Braga, Reyes Ortega

Anthropology is the academic discipline concerned with the study of the biological and cultural development of mankind. The approach is comparative and holistic, focusing attention on the physical behavioral characteristics of humans, the range of their variations worldwide and the constants which cut across all human activity. Anthropological studies include people throughout the world since the beginning of human life.

TRANSFER MAJOR REQUIREMENTS in Anthropology are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Positions for which four-year graduates in Anthropology are qualified are archaeologist, anthropology instructor, environmental consultant and state and national park anthropologist.

ANTHROPOLOGY FOR TRANSFER
AA-T DEGREE

Anthropology is the study of humans, past and present. To understand the full sweep and complexity of cultures across all of human history, anthropology draws and builds upon knowledge from the social and biological sciences as well as the humanities and physical sciences. A central concern of anthropologists is the application of knowledge to the solution of human problems. Historically, anthropologists in the United States have been trained in one of four areas: sociocultural anthropology, biological/physical anthropology, archaeology and linguistics. Anthropologists often integrate the perspectives of several of these areas into their research, teaching and professional lives.

The Associate in Arts in Anthropology for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Anthropology. Students completing the Associate in Arts in Anthropology for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in Anthropology for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

- completion of the major requirements with grades of C or better; and
- certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 1 Physical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 2 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 5 Introduction to Archaeology</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3–4 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 1L Physical Anthropology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ANTH 6 Introduction to Linguistic Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>MATH 13 Elementary Statistics OR SOC 15 Introduction to Statistics in Sociology</td>
<td>3-4</td>
</tr>
</tbody>
</table>

PLUS 3–4 ADDITIONAL UNITS FROM THE FOLLOWING OR ANY UNUSED COURSES FROM THE PRECEDING AREA:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI 1 Physical Geology AND ESCI 10 Introduction to Earth Science AND ESCI 10L Introduction to Earth Science Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 1L Physical Geology Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 65 Introduction to the Philosophy of Science</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3–4 ADDITIONAL UNITS FROM THE FOLLOWING OR ANY UNUSED COURSES FROM THE PRECEDING AREAS:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 4 Native Peoples of North America</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 7 Native Peoples of California</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 9 Magic, Witchcraft, Ritual, Myth and Religion</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 10 Introduction to Forensic Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 12 Anthropology of Games and Play</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 14 Globalization Studies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 27 Anthropology of Sex, Gender and Sexuality</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 18-21

ANTHROPOLOGY COURSES

ANTH 1 PHYSICAL ANTHROPOLOGY

Units: 3
Hours: 54 lecture

Broad introduction to the science of physical anthropology. Topics include: the field of anthropology, the scientific method, evolutionary theory, genetics and inheritance, human variation, biology and behavior of living primates and fossil evidence of human evolution. (CSU, UC)

ANTH 1L PHYSICAL ANTHROPOLOGY LABORATORY

Units: 1
Prerequisite: Completion with grade of “C” or better or concurrent enrollment in ANTH 1
Hours: 54 laboratory

Introductory laboratory course designed to investigate the science of biological anthropology. Areas of study include the production and distribution of genetic variation, human osteology, human variation, comparative primate taxonomy, behavior and osteology and fossil evidence for human evolution. Field trip required. (CSU, UC)
ANTH 2 CULTURAL ANTHROPOLOGY
Units: 3
Hours: 54 lecture
Introduction to anthropological approaches in the study of human culture and diversity. Examines continuity and diversity in peoples’ lifestyles, social institutions and cultural practices in a variety of global societies. Cultural phenomena studied include language, power, kinship, gender, sexuality, ethnicity, ecology, economics, politics, religion and ritual. Explores cultural change. Addresses the contemporary relevance of cultural anthropology. (CSU, UC)

ANTH 3 MAGIC, WITCHCRAFT, RITUAL, MYTH AND RELIGION
Units: 3
Hours: 54 lecture
Exploration of supernatural beliefs and practices around the world and over time. Cross-cultural survey and analysis of the forms and functions of myths, rituals, altered states of consciousness, spirit possession, messianic and cargo cults, witchcraft and curing. Investigation of the relationship between medicine, science, myth and supernatural belief systems in Western and non-Western societies. (CSU, UC)

ANTH 4 NATIVE PEOPLES OF NORTH AMERICA
Units: 3
Hours: 54 lecture
Anthropological survey of the peoples and cultures of North America. Emphasizes native ecological adaptations, languages, social organizations, religion, mythologies and world view and artistic representations. Critical examination of the impact of tribal nations on each other as well as the interactions with other groups of people. Examines the roots of present-day conditions of Native communities and the contributions of Native Americans to the cultures of the Americas. Field trips may be required. (CSU, UC)

ANTH 5 INTRODUCTION TO ARCHAEOLOGY
Units: 3
Hours: 54 lecture
Survey of the history and theory of archaeology. Emphasis placed on techniques of archaeological data collection and analysis, cultural innovations and variations, reconstruction and interpretation of the past and Cultural Resource Management work. Field trips may be required. (CSU, UC)

ANTH 6 INTRODUCTION TO LINGUISTIC ANTHROPOLOGY
Units: 3
Advisory: Completion of ENGL 1A with grade of “C” or better
Hours: 54 lecture
Exploration of the role of language in social interaction and world view. Examines minority languages, dialects, bilingualism, literacy and social influences on language change. Introduction and application of analytical techniques of linguistics and demonstration of their relevance to language in sociocultural issues. (CSU, UC)

ANTH 7 NATIVE PEOPLES OF CALIFORNIA
Units: 3
Hours: 54 lecture
Study of the many cultures of the native inhabitants of California from the prehistoric period to the present time. Introduction to the diversity and complexity of aboriginal California. Includes environmental adaptation, material culture, social structure, ideology and response to change. Explores the impact of interactions with other groups of people as well as the contributions of Native Californians to the cultures of the Americas. Field trips may be required. (CSU, UC)

ANTH 8 INTRODUCTION TO FORENSIC ANTHROPOLOGY
Units: 3
Hours: 54 lecture
Overview of forensic anthropology, an applied field of physical anthropology. Emphasis on current techniques used in the analysis of human skeletal remains, medico-legal procedures and the role of the anthropologist in the investigative process. Examines the basics of bone biology, methods of skeletal analysis and recognition of bone pathology and trauma. (CSU, UC)

ANTH 9 ANTHROPOLOGY OF GAMES AND PLAY
Units: 3
Hours: 54 lecture
Study the role of play, the experience of fun and the influence of games in our lives. Develops methodological and conceptual tools used in the academic and/or commercial analysis of games and their development. Use knowledge and skills gained to design and implement our own games. (CSU)

ANTH 10 GLOBALIZATION STUDIES
Units: 3
Hours: 54 lecture
Exploration of globalization and its effects. Addresses issues such as the historical, political, economic, cultural and environmental impacts of globalization. Development of tools for evaluating globalization in general as well as its local manifestations. (CSU, UC)

ANTH 11 ANTHROPOLOGY OF SEX, GENDER AND SEXUALITY
Units: 3
Hours: 54 lecture
A cross-cultural comparison of gender roles and sexuality viewed from biological, evolutionary and socio-cultural perspectives. Addresses contemporary, traditional and prehistoric societies. Explores the relationship between language and gender ideologies and practices in all societies. (CSU, UC)
ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

APPLIED ART AND DESIGN—GRAPHIC DESIGN CONCENTRATION

A.A. OR A.S. DEGREE

Successful completion of the curriculum in Graphic Design qualifies students for entry level positions in graphic design, Web design, desktop publishing and packaging design. This option also prepares students for transfer to a four-year college program in Graphic Design. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

12 UNITS FROM THE FOLLOWING CORE:

AAD 12 Visual Communication (also COMM 12) ................ 3
AAD 70 Introduction to Digital Art and Design .................. 3
AAD 75 Introduction to Digital Imaging (also PHOT 75) ...... 3
AAD 44 Sketching for Design OR
ART 4A Drawing ........................................ 3
ART 2 Two-Dimensional Design Foundations OR
ART 6C Color Theory..................................... 3

PLUS 9 UNITS FROM THE FOLLOWING:

AAD 52 Publication Design I ................................ 3
AAD 53 Publication Design II ................................ 3
AAD 54 Typography ......................................... 3
AAD 60 Graphic Design: Principles and Process .......... 3
AAD 61 Graphic Design II: Digital Design and Production .. 3
AAD 62 Graphic Computer Illustration ..................... 3

PLUS 3 UNITS SELECTED FROM THE FOLLOWING, OR
UNUSED COURSES FROM PRECEDING REQUIREMENTS:

AAD 20 Portfolio Development and Presentation ............. 3
AAD 28 Independent Study ................................ 1-3
AAD 30 Photographing Works of Art (also PHOT 30) ...... .5
AAD 85 Introduction to Web Design ......................... 3
AAD 86 Intermediate Web Design .......................... 3
AAD 90 Interactivity and Animation for the Web .......... 4
AAD 95 Internship in Applied Art and Design ............ 5-3
PHOT 60A Elementary Photography OR
PHOT 80 Color Photography ............................. 2-3

TOTAL UNITS REQUIRED: 24

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

ANTHROPOLOGY

APPLIED ART AND DESIGN

LIBERAL ARTS

INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: T. Fillebrown, R. Gregg, N. Rishe, R. Snook
LIAISON COUNSELORS: N. Martinis, Rebecca Ortega

Applied Art and Design is an academic discipline which focuses on the principles and practical applications of art, design, photography, computer graphics, imaging and animation. Study of the foundations of design, creative problem solving, portfolio development and internship experiences, all prepare students for transfer programs and career opportunities. Within the A.A./A.S. degree or certificate options, students may concentrate in Graphic Design, Illustration, or Multimedia. Students who successfully complete the Applied Art and Design major can expect to find entry level employment in such areas as digital illustration, graphic design for print and internet, multimedia, animation, photographic retouching and pre-press operation.
APPLIED ART AND DESIGN—ILLUSTRATION CONCENTRATION
A.A. OR A.S. DEGREE

Successful completion of the curriculum in Illustration qualifies students for entry level positions as digital illustrators for use in graphic design, advertising and book and card illustration. This option also prepares students for transfer to a four-year college program in Illustration. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES
12 UNITS FROM THE FOLLOWING CORE:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 12 Visual Communication (also COMM 12)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging (also PHOT 75)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 44 Sketching for Design OR ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 2 Two-Dimensional Design Foundations OR ART 6C Color Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 9 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 62 Graphic Computer Illustration</td>
<td>3</td>
</tr>
<tr>
<td>AAD 71 Introduction to Digital Painting (also ART 71)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 76 Advanced Projects in Digital Imaging (also PHOT 76)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 83 Introduction to Three-Dimensional Modeling</td>
<td>3</td>
</tr>
<tr>
<td>ART 4B Drawing OR ART 5A Figure Drawing</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS SELECTED FROM THE FOLLOWING, OR UNUSED COURSES FROM PRECEDING REQUIREMENTS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 20 Portfolio Development and Presentation</td>
<td>3</td>
</tr>
<tr>
<td>AAD 28 Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>AAD 30 Photographing Works of Art (also PHOT 30)</td>
<td>5</td>
</tr>
<tr>
<td>AAD 60 Graphic Design: Principles and Process</td>
<td>3</td>
</tr>
<tr>
<td>AAD 85 Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 95 Internship in Applied Art and Design</td>
<td>5-3</td>
</tr>
<tr>
<td>ART 7A Oil Painting OR ART 8A Watercolor Painting</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 60A Elementary Photography OR PHOT 80 Color Photography</td>
<td>2-3</td>
</tr>
<tr>
<td>PHOT 78 Digital Photography</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 24

APPLIED ART AND DESIGN—MULTIMEDIA CONCENTRATION
A.A. OR A.S. DEGREE

Successful completion of the curriculum in Multimedia qualifies students for entry level positions as interactive media designers, computer game designers, interface designers, animators and online web designers. This option also prepares students for transfer to a four-year college program in Multimedia. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES
12 UNITS FROM THE FOLLOWING CORE:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 12 Visual Communication (also COMM 12)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging (also PHOT 75)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 44 Sketching for Design OR ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 2 Two-Dimensional Design Foundations OR ART 6C Color Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 9 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 79 Introduction to Video Production (also COMM 31A)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 80 Introduction to Video Editing</td>
<td>4</td>
</tr>
<tr>
<td>AAD 83 Introduction to Three-Dimensional Modeling</td>
<td>3</td>
</tr>
<tr>
<td>AAD 85 Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 86 Intermediate Web Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 90 Interactivity and Animation for the Web</td>
<td>4</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS SELECTED FROM THE FOLLOWING, OR UNUSED COURSES FROM PRECEDING REQUIREMENTS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 28 Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>AAD 54 Typography</td>
<td>3</td>
</tr>
<tr>
<td>AAD 60 Graphic Design: Principles and Process</td>
<td>3</td>
</tr>
<tr>
<td>AAD 62 Graphic Computer Illustration</td>
<td>3</td>
</tr>
<tr>
<td>AAD 71 Introduction to Digital Painting (also ART 71)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 76 Advanced Projects in Digital Imaging (also PHOT 76)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 95 Internship in Applied Art and Design</td>
<td>5-3</td>
</tr>
<tr>
<td>ART 5A Figure Drawing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 122 Marketing in the Digital Age</td>
<td>3</td>
</tr>
<tr>
<td>CIS 127 Creating Web Sites</td>
<td>3</td>
</tr>
<tr>
<td>CIS 137 Managing a Successful Web Project</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 62 Web Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 63 Web Programming II</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 24
APPLIED ART AND DESIGN—
GRAPHIC DESIGN CONCENTRATION
CERTIFICATE OF ACHIEVEMENT

The certificate in Graphic Design qualifies students for entry level positions in graphic design, web design, desktop publishing and packaging design. The certificate is designed to focus on providing specific career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
12 UNITS FROM THE FOLLOWING CORE:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 12 Visual Communication (also COMM 12)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging (also PHOT 75)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 44 Sketching for Design OR ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 2 Two-Dimensional Design Foundations OR ART 6C Color Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 12 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 52 Publication Design I</td>
<td>3</td>
</tr>
<tr>
<td>AAD 53 Publication Design II</td>
<td>3</td>
</tr>
<tr>
<td>AAD 54 Typography</td>
<td>3</td>
</tr>
<tr>
<td>AAD 60 Graphic Design: Principles and Process</td>
<td>3</td>
</tr>
<tr>
<td>AAD 61 Graphic Design II: Digital Design and Production</td>
<td>3</td>
</tr>
<tr>
<td>AAD 62 Graphic Computer Illustration</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 8 UNITS SELECTED FROM THE FOLLOWING, OR UNUSED COURSES FROM PRECEDING REQUIREMENTS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 28 Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>AAD 30 Photographing Works of Art (also PHOT 30)</td>
<td>.5</td>
</tr>
<tr>
<td>AAD 85 Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 90 Interactivity and Animation for the Web</td>
<td>4</td>
</tr>
<tr>
<td>AAD 95 Internship in Applied Art and Design</td>
<td>5-3</td>
</tr>
<tr>
<td>PHOTO 60A Elementary Photography OR PHOTO 80 Color Photography</td>
<td>2-3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 32

APPLIED ART AND DESIGN—
ILLUSTRATION CONCENTRATION
CERTIFICATE OF ACHIEVEMENT

The certificate in Illustration qualifies students for entry level positions as digital illustrators for use in graphic design, advertising and book and card illustration. The certificate is designed to focus on providing specific career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
12 UNITS FROM THE FOLLOWING CORE:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 12 Visual Communication (also COMM 12)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging (also PHOT 75)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 44 Sketching for Design OR ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 2 Two-Dimensional Design Foundations OR ART 6C Color Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 12 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 55 Illustration (also ART 55)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 62 Graphic Computer Illustration</td>
<td>3</td>
</tr>
<tr>
<td>AAD 71 Introduction to Digital Painting (also ART 71)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 76 Advanced Projects in Digital Imaging (also PHOT 76)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 83 Introduction to Three-Dimensional Modeling</td>
<td>3</td>
</tr>
<tr>
<td>ART 4B Drawing OR ART 5A Figure Drawing</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 8 UNITS SELECTED FROM THE FOLLOWING, OR UNUSED COURSES FROM PRECEDING REQUIREMENTS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 20 Portfolio Development and Presentation</td>
<td>3</td>
</tr>
<tr>
<td>AAD 28 Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>AAD 30 Photographing Works of Art (also PHOT 30)</td>
<td>.5</td>
</tr>
<tr>
<td>AAD 60 Graphic Design: Principles and Process</td>
<td>3</td>
</tr>
<tr>
<td>AAD 85 Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 95 Internship in Applied Art and Design</td>
<td>5-3</td>
</tr>
<tr>
<td>ART 7A Oil Painting OR ART 8A Watercolor Painting</td>
<td>3</td>
</tr>
<tr>
<td>PHOTO 60A Elementary Photography OR PHOTO 80 Color Photography</td>
<td>2-3</td>
</tr>
<tr>
<td>PHOTO 78 Digital Photography</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 32
APPLIED ART AND DESIGN—MULTIMEDIA CONCENTRATION
CERTIFICATE OF ACHIEVEMENT

The certificate in Multimedia qualifies students for entry level positions as interactive media designers, computer game designers, interface designers and on-line web designers. The certificate is designed to focus on providing specific career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
12 UNITS FROM THE FOLLOWING CORE:

AAD 12 Visual Communication (also COMM 12) .................. 3
AAD 70 Introduction to Digital Art and Design ..................... 4
AAD 75 Introduction to Digital Imaging (also PHOT 75) ........ 3
AAD 44 Sketching for Design OR
ART 4A Drawing ................................................. 3
ART 2 Two-Dimensional Design Foundations OR
ART 6C Color Theory ........................................... 3

PLUS 12 UNITS FROM THE FOLLOWING:

AAD 79 Introduction to Video Production (also COMM 31A) .. 3
AAD 80 Introduction to Video Editing ................................ 4
AAD 83 Introduction to Three-Dimensional Modeling ........... 3
AAD 85 Introduction to Web Design ................................ 3
AAD 86 Intermediate Web Design .................................. 3
AAD 90 Interactivity and Animation for the Web .................. 4

PLUS 8 UNITS SELECTED FROM THE FOLLOWING, OR
UNUSED COURSES FROM PRECEDING REQUIREMENTS:

AAD 28 Independent Study . ........................................ 1-3
AAD 54 Typography .................................................. 3
AAD 60 Graphic Design: Principles and Process .................. 3
AAD 62 Graphic Computer Illustration ............................. 3
AAD 71 Introduction to Digital Painting (also ART 71) .......... 3
AAD 76 Advanced Projects in Digital Imaging (also PHOT 76) .. 3
AAD 95 Internship in Applied Art and Design .................. 5-3
ART 5A Figure Drawing ........................................... 3
BUS 122 Marketing in the Digital Age ............................. 3
CIS 127 Creating Web Sites ......................................... 3
CIS 137 Managing a Successful Web Project .................... 3
CSCI 62 Web Programming I ....................................... 3
CSCI 63 Web Programming II ....................................... 3

TOTAL UNITS REQUIRED: 32

DIGITAL ILLUSTRATION
SKILLS CERTIFICATE

Designed for students interested in becoming proficient in illustration. Valuable for those preparing for careers in illustration, animation and gaming, or for those upgrading their skills. This is a specialty skills certificate designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES:

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 44 Sketching for Design OR</td>
<td>3</td>
</tr>
<tr>
<td>ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>AAD 55 Illustration (also ART 55)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 62 Graphic Computer Illustration</td>
<td>3</td>
</tr>
<tr>
<td>AAD 71 Introduction to Digital Painting (also ART 71)</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 12

GRAPHIC DESIGN
SKILLS CERTIFICATE

Designed for students interested in becoming proficient with design concepts, software and image manipulation related to creating print and publication design. Valuable for those preparing for a career as a graphic designer, or for those upgrading their skills. This is a specialty skills certificate designed to provide career technical skills for print design and publication software; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 52 Publication Design I</td>
<td>3</td>
</tr>
<tr>
<td>AAD 60 Graphic Design: Principles and Process</td>
<td>3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging (also PHOT 75)</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 12

VIDEO PRODUCTION AND EDITING
SKILLS CERTIFICATE

Designed for students interested in becoming proficient with video production and editing techniques, software and computer manipulation related to time-based media. Valuable for those preparing for a career in the video industry, or for those upgrading their skills. This is a specialty skills certificate designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 44 Sketching for Design OR</td>
<td>3</td>
</tr>
<tr>
<td>ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging (also PHOT 75)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 79 Introduction to Video Production (also COMM 31A)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 80 Introduction to Video Editing</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 13
**VISUAL ARTS AND MEDIA SKILLS CERTIFICATE**

Designed for students interested in understanding visual media and becoming proficient in techniques for conceptualizing and creating visual images. Valuable for those preparing for a career in the visual arts and media, providing knowledge and technical skills applicable to digital art and design, communication studies, business and marketing, or for those upgrading their skills. This is a specialty skills certificate designed to provide career technical skills; it is not equivalent to an associate degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 12 Visual Communication (also COMM 12)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 44 Sketching for Design OR ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 60A Elementary Photography</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 12**

**WEB DESIGN SKILLS CERTIFICATE**

Intended for students interested in becoming proficient with software and technologies for creating webpage design. Valuable for those preparing for a career as a web designer, or for those upgrading their skills. This is a specialty skills certificate designed to provide career technical skills; it is not equivalent to an associate degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 62 Graphic Computer Illustration</td>
<td>3</td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging (also PHOT 75)</td>
<td>3</td>
</tr>
<tr>
<td>AAD 85 Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 90 Interactivity and Animation for the Web</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 13**

**APPLIED ART AND DESIGN COURSES »**

**AAD 12 VISUAL COMMUNICATION**

*Also known as COMM 12*

**Units: 3**

**Hours: 54 lecture**

Study of visual communication including design principles, aesthetics, visual perception, non-verbal messages, relationship to verbal communication, audience analysis, mass media and persuasion. Historical overview of visual media as well as current trends and technology. (CSU, UC)

**AAD 20 PORTFOLIO DEVELOPMENT AND PRESENTATION**

**Units: 3**

**Advisory:** Completion of AAD 70, 75, or 85 with grade of "C" or better

**Hours: 72 (36 lecture, 36 activity)**

Function and use of the portfolio as a marketing device for artists and designers. Styles, materials, resources in portfolio design. Evaluation of professional goals and image building. Students create and present both a print and digital portfolio of their work as a final project. For advanced students. (CSU)

**AAD 28 INDEPENDENT STUDY**

**Units: 1-3**

Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

**AAD 30 PHOTOGRAPHING WORKS OF ART**

*Also known as PHOT 30*

**Units: 0.5**

**Hours: 13 (7 lecture, 6 laboratory)**

Methods and procedures involved in reproducing works of art into digital files, prints, or slides for cataloging, portfolios, or publication. Covers equipment needed for both artificial and natural light situations, camera considerations, proper exposure and presentation of copy work for both two-dimensional and three-dimensional art. Students must furnish digital or film camera, processing, storage and presentation materials. (CSU)

**AAD 44 SKETCHING FOR DESIGN**

**Units: 3**

**Hours: 72 (36 lecture, 36 activity)**

Introduction to concept sketching techniques for design, illustration, photography and multimedia utilizing a variety of drawing media and creative problem solving concepts. Emphasis on developing visual communication skills for advertising, graphics, illustration, product design and storyboarding for time-based media. (CSU)

**AAD 50 INTRODUCTION TO THE MACINTOSH COMPUTER**

**Units: 0.5**

**Hours: 13 (7 lecture, 6 activity)**

Introduction to the Macintosh computer hardware and operating system. Basic skills including menu bar, opening and saving files, navigating, mouse and keyboard use. Memory, storage and resolutions issues. Icons, terminology and common acronyms. Overview of peripherals and software used in art and design. (CSU)
AAD 52 PUBLICATION DESIGN I
Units: 3
Advisory: Completion of AAD 60 or AAD 70 with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Introductory course in use of computer for page layout and composition. Critical application of basic computer operating principles. Emphasis on publication design and the use of type and layout as key elements in graphic communication. Covers importing text and graphics, arranging publication pages and producing camera ready artwork for reproduction. (CSU)

AAD 53 PUBLICATION DESIGN II
Units: 3
Prerequisite: Completion of one of the following courses with grade of "C" or better: AAD 52, 54 or 62
Hours: 72 (36 lecture, 36 activity)
Page layout for developing and producing high-quality multi-page documents. Emphasis on publication design, production, typography, graphics and pre-press. Includes research and application of effective magazine layout concepts, cover design, grid theory, graphics, text elements and printing standards and processes. (CSU)

AAD 54 TYPOGRAPHY
Units: 3
Prerequisite: Completion of one of the following with grade of "C" or better: AAD 52, 53, 61, 62, or 75
Advisory: Completion of AAD 60 with grade of "C" or better
Hours: 72 (36 lecture, 36 activity)
A professional and historical approach to understanding typographic principles and form, effects of type on the style and communication in print and screen. Includes study of historical and contemporary graphics and typographic design, conceptualizing, developing and refining typographical forms, methods for analyzing typographic usage, proper application of type in a variety of print publications and screen environments, hand drawn and computer generated typed forms. (CSU)

AAD 55 ILLUSTRATION
Also known as ART 55
Units: 3
Prerequisite: Completion of one of the following courses with grade of "C" or better: AAD 44, 60, 62, 75 or ART 4A
Hours: 72 (36 lecture, 36 activity)
Professional practices of illustration, including concept development, communication of ideas, identification and use of appropriate styles and techniques, time management, pricing and contracts and presentation of finished artwork. (CSU)

AAD 60 GRAPHIC DESIGN: PRINCIPLES AND PROCESS
Units: 3
Advisory: Completion of AAD 44, AAD 70, ART 4A, or ART 6A with grade of "C" or better
Hours: 72 (36 lecture, 36 activity)
Introductory course emphasizing concept development, fundamental principles of design and design solutions. Exploration of materials and techniques for visualizing and presenting ideas, analyzing and critiquing design and combining diverse elements in effective layouts from concept through final critique. (CSU)

AAD 61 GRAPHIC DESIGN II: DIGITAL DESIGN AND PRODUCTION
Units: 3
Prerequisite: Completion of one of the following with grade of "C" or better AAD 52, 62, or 75
Advisory: Completion of AAD 60
Hours: 90 (27 lecture, 63 activity)
Advanced problem solving skills in graphic design through projects and critique. Use of the computer to design and produce full color graphics and print materials, including industry standards and procedures for working with art directors, service bureaus and printers in pre-press operations. (CSU)

AAD 62 GRAPHIC COMPUTER ILLUSTRATION
Units: 3
Advisory: Completion of AAD 60, AAD 70, or ART 4A with a grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Computer illustration for effective graphic communication. Emphasis on software tools and techniques in creation of graphic illustrations for use in a wide range of media including print, multimedia and World Wide Web. Application of design principles, the use of type and layout in combination with illustrations through class projects. Covers importing text and graphics, developing and executing design concepts and producing camera ready artwork for reproduction using appropriate file formats and standards for integration into other electronic media. (CSU, UC)

AAD 66 BUSINESS PRACTICES FOR THE APPLIED ARTS
Units: 1
Hours: 18 lecture
Fundamental business practices for graphic designers, multimedia and illustration artists, photographers and other creative service providers. Initial client contact to final billing process. Basic elements of running a small studio including overview of license, taxes and bookkeeping. Production of invoices, purchase orders, job sheets and organizational forms. Discussion of business ethics in the arts, copyright protection and working relationships with clients and suppliers. (CSU)
AAD 70 INTRODUCTION TO DIGITAL ART AND DESIGN  
*Units: 3*

*Hours: 72 (36 lecture, 36 activity)*

Introduction to fundamental concepts and techniques of art and design on the computer. Includes basic computer skills, digital image capture, image manipulation, drawing, page layout and preparation of images for print, web or multimedia. Students develop creative projects using current graphics software. (CSU, UC)

AAD 71 INTRODUCTION TO DIGITAL PAINTING  
*Also known as ART 71*

*Units: 3*

*Prerequisite: Completion of AAD 44 or ART 4A with grade of “C” or better*

*Hours: 108 (27 lecture, 81 laboratory)*

Introduction to drawing and painting on the computer. Exploration of tools, color palettes, brush options, paper textures, effects and manipulation of layers and masks in a digital painting program. Includes integration of off-computer drawing and painting processes and techniques with digital image development. Projects are created in preparation for printing on artist’s quality papers, or for use in other digital applications and the World Wide Web. (CSU)

AAD 75 INTRODUCTION TO DIGITAL IMAGING  
*Also known as PHOT 75*

*Units: 3*

*Advisory: Completion of AAD 70 with grade of “C” or better*

*Hours: 72 (36 lecture, 36 activity)*

Introduction to the acquisition and computer manipulation of photographs for design and photography. Analysis and critique of images from initial concept to final project creation. Basic scanning, image adjustments, retouching, compositing and file preparation for printing and other uses. (CSU, UC)

AAD 76 ADVANCED PROJECTS IN DIGITAL IMAGING  
*Also known as PHOT 76*

*Units: 3*

*Advisory: Completion of PHOT 75/AAD 75 and PHOT 60A with grades of “C” or better recommended*

*Hours: 72 (36 lecture, 36 activity)*

Advanced digital project development. Creating original images from a variety of input devices including scanners and digital cameras. Speed building in editing techniques. Use of various output methods appropriate for specific projects. Evaluations and critiques of completed projects. (CSU)

AAD 79 INTRODUCTION TO VIDEO PRODUCTION  
*Also known as COMM 31A*

*Units: 3*

*Hours: 90 (36 lecture, 54 laboratory)*

Introduction to principles, techniques and the terminology of video production and post-production. Guided classroom exercises and projects, including pre-production planning, video and audio recording techniques, remote (field) system set-ups and studio set-ups, lighting for single camera video shoots and basic video editing and output. (CSU)

AAD 80 INTRODUCTION TO VIDEO EDITING  

*Units: 4*

*Advisory: Completion of AAD 79/COMM 31A with grade of “C” or better*

*Hours: 108 (36 lecture, 72 activity)*

An introduction to video editing using non-linear systems. Topics include basic video and audio capture, use of still images and graphics in video, addition of transitions, effects and filters, sequencing and pacing, sound manipulation and the creation of original titles and audio tracks. Export and compression are covered for various outputs including Web, DVD, tape and archive. (CSU)

AAD 83 INTRODUCTION TO THREE-DIMENSIONAL MODELING  

*Units: 3*

*Advisory: Completion of AAD 70 and ART 4A with grades of “C” or better*

*Hours: 108 (27 lecture, 81 laboratory)*

Three-dimensional modeling on the computer including construction of three-dimensional forms, use of surface textures, application of lighting effects and animation of completed constructions. Students will create original projects including environments, objects, buttons, three-dimensional texts and animations for use in fine art, graphic design, multimedia and the World Wide Web. (CSU)

AAD 85 INTRODUCTION TO WEB DESIGN  

*Units: 3*

*Advisory: Completion of AAD 85 with grade of “C” or better*

*Hours: 90 (36 lecture, 54 laboratory)*

Intermediate course in front-end web design. Current topics in website creation covered as they relate to visual design and user interfaces such as strategies for combining layout, graphics, text, typography and interactivity in fully functioning websites. Special topics include coverage of industry standards and current technologies. (CSU)

AAD 86 INTERMEDIATE WEB DESIGN  

*Units: 3*

*Prerequisite: Completion of AAD 85 with grade of “C” or better*

*Hours: 90 (36 lecture, 54 laboratory)*

Intermediate course in front-end web design. Current topics in website creation covered as they relate to visual design and user interfaces such as strategies for combining layout, graphics, text, typography and interactivity in fully functioning websites. Special topics include coverage of industry standards and current technologies. (CSU)
AAD 90 INTERACTIVITY AND ANIMATION FOR THE WEB
Units: 4
Prerequisite: Completion of AAD 70 with grade of "C" or better
Hours: 108 (54 lecture, 54 laboratory)
Introduction to interactive, multimedia authoring and animation for the Web. Assembly of media elements including digital images, sound and video into cross-platform projects. Use of multimedia tools, scripts and animation. Stylistic concerns, content development and copyright issues studied. Students create original, interactive multimedia projects appropriate for CD and World Wide Web presentation. (CSU)

AAD 95 INTERNSHIP IN APPLIED ART AND DESIGN
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

ART

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: B. Chapman, J. Keating, C. O’Connor, S. Tubiolo
LIAISON COUNSELORS: M. Braga, M. Moon

The faculty of the Art Department is committed to the objective of making the arts of the past and present available to the students through historical surveys and the studio experience. It is believed that this heritage of thought and skill, going beyond our immediate time and culture, will enrich the students’ lives, their personal view of their world and their communication of ideas, through added knowledge and inter-cultural understanding.

TRANSFER MAJOR REQUIREMENTS in Art are available in the Counseling Center. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1A History of Prehistoric through Gothic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1B History of Renaissance to Mid-Nineteenth Century Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1C History of Modern to Contemporary Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 4A Drawing</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING ART HISTORY COURSES:

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1D History of Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1F History of Islamic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1G History of the Arts of Africa, the Americas and Oceania</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING COURSES OR UNUSED COURSE FROM THE PRECEDING AREA:

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1E History of Women in Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 11 History and Aesthetics of Photography (also PHOT 10)</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING STUDIO ARTS COURSES:

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 2 Two-Dimensional Design Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 3 Three-Dimensional Design Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 6C Color Theory</td>
<td>3</td>
</tr>
<tr>
<td>ART 7A Oil Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 12A Sculpture I</td>
<td>3</td>
</tr>
<tr>
<td>ART 18A Ceramics I</td>
<td>3</td>
</tr>
<tr>
<td>ART 40A Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 60A Elementary Photography</td>
<td>3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21

ART HISTORY FOR TRANSFER
AA-T DEGREE

Art History is a program that provides students with an understanding of the history of visual arts and architecture. The program curriculum introduces students to the different art historical methodologies that shape the study of art of the past and present. Students examine art objects stylistically and contextually while highlighting a relationship between the object and the cultural values and beliefs of its creators. Students also explore the role of the artist, the patrons and the audience of art throughout history. The courses emphasize the fundamentals of visual analysis resulting in critical thinking and writing, as well as visual literacy.

The Associate in Arts in Art History for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Art History. Students completing the Associate in Arts in Art History for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in Art History for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

- completion of the major requirements with grades of C or better; and
- certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.
### STUDIO ARTS FOR TRANSFER

#### AA-T DEGREE

Studio Arts is a program that provides students with broad exposure to the visual arts through basic requirements in two and three-dimensional studio and art history. Program curriculum introduces students to the fundamental concerns of art, including lab and material safety, visual literacy, design, problem solving and critical thinking. Through various hands-on projects, students develop the skills necessary to approach problems, analyze constraints and requirements and use appropriate techniques to invent creative solutions in a variety of media.

The Associate in Arts in Studio Arts for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Studio Arts. Students completing the Associate in Arts in Studio Arts for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in Studio Arts for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

- completion of the major requirements with grades of C or better; and
- certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1B History of Renaissance to Mid-Nineteenth Century Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1C History of Modern to Contemporary Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 2 Two-Dimensional Design Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 3 Three-Dimensional Design Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 4A Drawing</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 ADDITIONAL UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1A History of Prehistoric through Gothic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1D History of Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1G History of the Arts of Africa, the Americas and Oceania</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 9 ADDITIONAL UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>ART 4B Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 5A Figure Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 6C Color Theory</td>
<td>3</td>
</tr>
<tr>
<td>ART 7A Oil Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 8A Watercolor Painting OR</td>
<td>3</td>
</tr>
<tr>
<td>ART 9A Acrylic Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 12A Sculpture I OR</td>
<td>3</td>
</tr>
<tr>
<td>ART 17 Ceramic Sculpture/Handbuilding</td>
<td>3</td>
</tr>
<tr>
<td>ART 18A Ceramics I</td>
<td>3</td>
</tr>
</tbody>
</table>

ART 22 Creative Design in Metal .................. 3
ART 32 Introduction to Fiber Arts OR
ART 41 Introduction to Jewelry and Metalsmithing 3
ART 40A Printmaking ................................. 3
PHOT 60A Elementary Photography .................. 3
ART 5B Figure Drawing OR
ART 7B Oil Painting OR
ART 8B Watercolor Painting OR
ART 12B Sculpture II OR
ART 18B Ceramics II OR
ART 19 Figure Sculpture OR
ART 20 Raku Ceramics OR
ART 21 Primitive Ceramics OR
ART 40B Printmaking .................................. 3

**TOTAL UNITS REQUIRED: 27**

### ART HISTORY

#### A.A. DEGREE

The A.A. program in Art History provides students with an understanding of the history of visual arts and architecture. Successful completion of the curriculum in Art History will prepare students for transfer to four-year colleges or universities. The program curriculum introduces students to the different art historical methodologies that shape the study of arts of the past and present. Students examine art objects stylistically and contextually while highlighting a relationship between the object and the cultural values and beliefs of its creators. Students also explore the role of the artist, the patrons and the audience of art throughout history. The courses emphasize the fundamentals of visual analysis resulting in critical thinking and writing, as well as visual literacy. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1A History of Prehistoric through Gothic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1B History of Renaissance to Mid-Nineteenth Century Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1C History of Modern to Contemporary Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 4A Drawing</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1D History of Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1E History of Women in Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1F History of Islamic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1G History of the Arts of Africa, the Americas and Oceania</td>
<td>3</td>
</tr>
<tr>
<td>ART 11 History and Aesthetics of Photography (also PHOT 10)</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 2 Two-Dimensional Design Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 3 Three-Dimensional Design Foundations</td>
<td>3</td>
</tr>
</tbody>
</table>
ART 6C Color Theory ........................................ 3
ART 7A Oil Painting ........................................ 3
ART 12A Sculpture I .......................................... 3
ART 18A Ceramics I .......................................... 3
ART 40A Printmaking ....................................... 3
AAD 70 Introduction to Digital Art and Design .......... 3
PHOT 60A Elementary Photography .................... 3
**TOTAL UNITS REQUIRED: 21**

**STUDIO ART**

**A.A. DEGREE**

(Formerly ART)

The A.A. program in Studio Art is intended to prepare students for entry-level positions in the fine and applied art fields. The program seeks to provide breadth through basic requirements in two and three-dimensional studio and art history courses. Additional course work is selected by students toward specific career alternatives such as fine artist, graphic designer, crafts person, illustrator, or computer artist. Employment opportunities in these fields are highly dependent on the quality and breadth of one's artistic portfolio. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1B History of Renaissance to Mid-Nineteenth Century Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1C History of Modern to Contemporary Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 2 Two-Dimensional Design Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 3 Three-Dimensional Design Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 4A Drawing</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 3 UNITS FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1A History of Prehistoric through Gothic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1D History of Asian Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1E History of Women in Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1F History of Islamic Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 1G History of the Arts of Africa, the Americas and Oceania</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 9 UNITS FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 4B Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 5A Figure Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 5B Figure Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 6C Color Theory</td>
<td>3</td>
</tr>
<tr>
<td>ART 7A Oil Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 7B Oil Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 8A Watercolor Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 8B Watercolor Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 9A Acrylic Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 9B Acrylic Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 12A Sculpture I</td>
<td>3</td>
</tr>
<tr>
<td>ART 12B Sculpture II</td>
<td>3</td>
</tr>
<tr>
<td>ART 17 Ceramic Sculpture/Handbuilding</td>
<td>3</td>
</tr>
<tr>
<td>ART 18A Ceramics I</td>
<td>3</td>
</tr>
<tr>
<td>ART 18B Ceramics II</td>
<td>3</td>
</tr>
<tr>
<td>ART 19 Figure Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ART 20 Raku Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>ART 21 Primitive Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>ART 22 Creative Design in Metal</td>
<td>3</td>
</tr>
<tr>
<td>ART 24 Advanced Art Metal Design</td>
<td>3</td>
</tr>
<tr>
<td>ART 28 Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>ART 31 Mural Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 32 Introduction to Fiber Arts</td>
<td>3</td>
</tr>
<tr>
<td>ART 33 Art Metal Casting</td>
<td>3</td>
</tr>
<tr>
<td>ART 34 Collage and Assemblage</td>
<td>3</td>
</tr>
<tr>
<td>ART 40A Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART 40B Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART 41 Introduction to Jewelry and Metalsmithing</td>
<td>3</td>
</tr>
<tr>
<td>ART 52 Portrait Drawing and Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 55 Illustration (Also AAD 55) OR ART 71 Introduction to Digital Painting (Also AAD 71) OR AAD 20 Portfolio Development and Presentation OR AAD 90 Interactivity and Animation for the Web OR PHOT 60B Intermediate Photography</td>
<td>3-4</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 27**

(Student art work may be retained by the Department, at its discretion, for one year)

**ART COURSES**

**ART 1A HISTORY OF PREHISTORIC THROUGH GOTHIC ART**

*Units: 3*

*Hours: 54 lecture*

Study of architecture, sculpture and painting of the Ancient Near East and Europe from Prehistory through Middle Ages. (CSU, UC)

**ART 1B HISTORY OF RENAISSANCE TO MID-NINETEENTH CENTURY ART**

*Units: 3*

*Hours: 54 lecture*

Study of painting, architecture, sculpture and graphic arts of European cultures from the Renaissance through mid-nineteenth century. (CSU, UC)

**ART 1C HISTORY OF MODERN TO CONTEMPORARY ART**

*Units: 3*

*Hours: 54 lecture*

Study of the historical development of art and architecture in Europe and the United States from mid-nineteenth century to contemporary practice. (CSU, UC)
ART 1D HISTORY OF ASIAN ART  
Units: 3  
Hours: 54 lecture  
Study of the painting, sculpture, architecture and other art forms of India, China, Japan, Korea and Southeast Asia from prehistoric times to present. (CSU, UC)

ART 1E HISTORY OF WOMEN IN ART  
Units: 3  
Hours: 54 lecture  
Women in the arts in western civilization including their influence as artists and patrons as well as representations of women from Antiquity to the present. (CSU, UC)

ART 1F HISTORY OF ISLAMIC ART  
Units: 3  
Hours: 54 lecture  
Islamic art and architecture from Arabic, Persian and Indian cultures. Formation of Islamic art, history and philosophy. Works of art from Muslim countries and regions. Comparison with art from other major Asian cultures such as Buddhism and Hinduism as well as European traditional art inspired by religion. (CSU, UC)

ART 1G HISTORY OF THE ARTS OF AFRICA, THE AMERICAS AND OCEANIA  
Units: 3  
Hours: 54 lecture  
Study of various art forms of the cultures of Africa, the Americas and Oceania from prehistoric times to the present. (CSU, UC)

ART 2 TWO-DIMENSIONAL DESIGN FOUNDATIONS  
Formerly known as ART 6A  
Units: 3  
Hours: 90 (36 lecture, 54 laboratory)  
Introduction to the concepts, applications and historical references related to two-dimensional art and composition, including the study of the basic principles and elements of line, shape, texture, value, color, proportion and spatial illusion. Students develop a visual vocabulary for creative expression through lecture presentations, studio projects, problem solving and written assignments. (CSU, UC)

ART 3 THREE-DIMENSIONAL DESIGN FOUNDATIONS  
Units: 3  
Hours: 90 (36 lecture, 54 laboratory)  
Introduction to the concepts, applications and historical references related to three-dimensional design and spatial composition, including the study of the elements of art and principles of design as they apply to three-dimensional space and form. Development of visual vocabulary for creative expression through lecture presentations and use of appropriate materials for non-representational three-dimensional studio projects. (CSU)

ART 4A DRAWING  
Units: 3  
Advisory: Eligibility for ENGL 1A  
Hours: 90 (36 lecture, 54 laboratory)  
Introduction to drawing, including gesture and contour drawing; rendering of volumetric form showing light and shadow; description of forms in space; and basic principles of compositional arrangement. Instruction in the use of black and white drawing media including pencil, charcoal and ink. References to various historical and cultural styles and techniques. (CSU, UC)

ART 4B DRAWING  
Units: 3  
Prerequisite: Completion of ART 4A with grade of “C” or better  
Hours: 90 (36 lecture, 54 laboratory)  
Continued exploration of the various concerns of drawing, including gesture and contour drawing, rendering of volumetric form showing light and shadow, description of forms in space and basic principles of compositional arrangement using color drawing media including pencils, pastels and inks. Drawing will be studied with reference to various historical and cultural styles and techniques. (CSU, UC)

ART 4A DRAFTING  
Units: 3  
Prerequisite: Completion of ART 4A with grade of “C” or better  
Hours: 90 (36 lecture, 54 laboratory)  
Introduction to drafting, including perspective drawing; rendering of volumetric form showing light and shadow; description of forms in space; and basic principles of compositional arrangement. Instruction in the use of black and white drafting media including pencils, ink and technical pens. References to various historical and cultural styles and techniques. (CSU, UC)

ART 5A FIGURE DRAWING  
Units: 3  
Prerequisite: Completion of ART 4A with grade of “C” or better  
Hours: 90 (36 lecture, 54 laboratory)  
Drawing the human form using live models. Emphasis on the concepts of form in space, proportions, anatomical construction, dimensional composition. Development of self-expression and creativity through artwork employing the figure as the primary subject matter. Study of figurative art in historical and cultural contexts. Use of a wide variety of drawing materials to achieve various aesthetic effects. (C-ID ARTS 200) (CSU, UC)

ART 5B FIGURE DRAWING  
Units: 3  
Prerequisite: Completion of ART 5A with grade of “C” or better  
Hours: 90 (36 lecture, 54 laboratory)  
Drawing the human form using live models. Continued concepts of form in space, proportions, anatomical construction and dimensional composition. Development of self-expression and creativity through art work employing the figure as the primary subject matter. Study of figurative art in historical and cultural contexts. Use of a wide variety of drawing materials, including color media to achieve various aesthetic effects. Emphasis on completed compositions. (CSU, UC)
ART 9B ACRYLIC PAINTING
Units: 3
Prerequisite: Completion of ART 9A with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Further in-depth study of acrylic techniques and processes with emphasis on development of personal expression and style.
(CSU, UC)

ART 7A OIL PAINTING
Units: 3
Advisory: Completion of ART 4A with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
An introduction to the techniques of oil painting. Painting techniques explored in historical/cultural contexts, as well as student's individual style and interest. Composition, colors and sources of inspiration studied through class assignments. Students are encouraged to develop self-expression and creativity. (CSU, UC)

ART 8A WATERCOLOR PAINTING
Units: 3
Prerequisite: Completion of ART 4A with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Introduction to the watercolor techniques as a transparent painting medium. Includes exploration of traditional and nontraditional watercolor methods, composition, color use, development of sources of personal inspiration and historical traditions studied through lecture, reading and direct class painting assignments. (CSU, UC)

ART 8B WATERCOLOR PAINTING
Units: 3
Prerequisite: Completion of ART 8A with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Further in-depth study of techniques and processes of transparent watercolor. Emphasis on practice and improvement in painting techniques and development of personal expression and style. (CSU, UC)

ART 9A ACRYLIC PAINTING
Units: 3
Advisory: Completion of ART 4A with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Introduction to techniques of acrylic painting. Painting explored in historical context as well as student's individual style and interest. Composition, color use and sources of inspiration studied through class assignments. (CSU, UC)
ART 18A CERAMICS I
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 90 (36 lecture, 54 laboratory)
Introduction to the ideas, techniques, history and tradition of the art and craft of ceramics. Ceramics will be explored through hand building, wheel throwing, decorating and glazing of ceramic works. (CSU, UC)

ART 18B CERAMICS II
Units: 3
Prerequisite: Completion of ART 18A with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Course builds on techniques learned in ART 18A. Potter's wheel, handbuilding, slip casting. Glaze technology introduced. (CSU, UC)

ART 19 FIGURE SCULPTURE
Units: 3
Advisory: Completion of ART 12A with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Introduction to figure sculpture using the live model. Emphasis on understanding the human figure as it relates culturally to contemporary and traditional sculptural concepts. Students are introduced to a variety of construction materials beginning with ceramics. More advanced students may explore other materials such as plaster, bronze and stone. (CSU, UC)

ART 20 RAKU CERAMICS
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Introduction to Raku, a traditional ceramics process. Explores origins and cultural developments and their application to the contemporary world. Includes fabrication techniques, glaze chemistry, firing techniques and design theory. (CSU, UC)

ART 21 PRIMITIVE CERAMICS
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Student exploration and digging of clays, preparation of clay for studio use, exploring primitive or ancient firing and decorating techniques and firing with dung and wood. Field trips required. (CSU, UC)

ART 22 CREATIVE DESIGN IN METAL
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Exploration of metalworking techniques, design principles and material use for sculpture, functional and nonfunctional art forms. Common welding processes, forming, bending and blacksmithing techniques for ferrous and nonferrous metals. (CSU)

ART 24 ADVANCED ART METAL DESIGN
Units: 3
Prerequisite: Completion of ART 22 with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Advanced exploration of metal techniques, design principles and material use for sculpture and functional and nonfunctional art forms. Emphasis on development of a personal creative vision, furthering technical skills and complex problem solving. Includes ferrous and nonferrous metal machining, advanced welding techniques, advanced forming methods and public outdoor art installation. (CSU)

ART 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

ART 31 MURAL ART
Formerly known as ART 301
Units: 3
Advisory: Completion of ART 4A with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Designing, drawing and painting murals. Concentration on mural design and painting processes: research and development of themes, preparatory sketches and drawings of designs, development and transfer of the cartoons and painting an actual mural. (CSU, UC)

ART 32 INTRODUCTION TO FIBER ARTS
Formerly known as ART 302
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Develop familiarization with materials and basic understanding of several off-loom construction techniques. Emphasis on techniques requiring little specialized equipment with materials that are found readily in the environment. Overview of historical background and contemporary Fiber Art. (CSU, UC)

ART 33 ART METAL CASTING
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Exploration of cast metal for sculpture, including functional and nonfunctional art forms. Emphasis on history, design, techniques, vocabulary and safety. Includes lost wax, rigid investments, sand casting and other traditional and nontraditional art foundry methods, for both bronze and aluminum. (CSU)
ART 34 COLLAGE AND ASSEMBLAGE
Formerly known as ART 303
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Explores the variation and formation of an altered surface with found and constructed materials. The application of historical and contemporary techniques and concepts provides the foundation for creating two and three dimensional works of art. Development of a personal visual language is essential to this course. (CSU)

ART 40A PRINTMAKING
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Introduction to printmaking processes. Direct practice in wood cut, lino cut, collagraph and monotype. (CSU, UC)

ART 40B PRINTMAKING
Units: 3
Prerequisite: Completion of ART 40A with grade of “C” or better
Hours: 90 (36 lecture, 54 laboratory)
Further study of printmaking processes. Direct practice in relief, intaglio, collagraph and monotype. (CSU, UC)

ART 41 INTRODUCTION TO JEWELRY AND METALSMITHING
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Introduction to a wide range of methods, techniques and materials used to create jewelry and scale metal artwork and objects. Includes examination of the history and contemporary practices of jewelry-making and small metal casting/fabrication with a global cultural perspective. (CSU)

ART 52 PORTRAIT DRAWING AND PAINTING
Units: 3
Advisory: Completion of ART 4A
Hours: 90 (36 lecture, 54 laboratory)
Introduction to drawing and painting the human portrait from live models. Basic proportions, facial features, basic rendering and painting techniques and portrayal of individual portrait characteristics with a variety of drawing and painting media. Historical study of the art form of portraiture integrated into studio projects. (CSU, UC)

ART 55 ILLUSTRATION
Also known as AAD 55
Units: 3
Prerequisite: Completion of one of the following courses with grade of “C” or better: AAD 44, 60, 62, 75 or ART 4A
Hours: 72 (36 lecture, 36 activity)
Professional practices of illustration, including concept development, communication of ideas, identification and use of appropriate styles and techniques, time management, pricing and contracts and presentation of finished artwork. (CSU)

ART 71 INTRODUCTION TO DIGITAL PAINTING
Also known as AAD 71
Units: 3
Prerequisite: Completion of AAD 44 or ART 4A with grade of “C” or better
Hours: 108 (27 lecture, 81 laboratory)
Introduction to drawing and painting on the computer. Exploration of tools, color palettes, brush options, paper textures, effects and manipulation of layers and masks in a digital painting program. Includes integration of off-computer drawing and painting processes and techniques with digital image development. Projects are created in preparation for printing on artist’s quality papers, or for use in other digital applications and the World Wide Web. (CSU)

ART 95 INTERNSHIP IN ART
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

ART 300 SELECTED TOPICS IN ART
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC–with unit limitation)

ART 400 SELECTED TOPICS IN ART
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

ART 814 ART APPRECIATION: IDENTIFICATION OF VARIOUS PERIODS OF ART
Units: 0
Hours: 8 to 18 lecture as scheduled
Course designed for older adults. An overview of the development of various periods of art movements. Includes impact of culture, religion and political atmosphere on art and the identification of major works of art and artists in each period. Each class section focuses on one period or genre, such as Italian Renaissance, French Impressionism, Dutch Baroque, Arts of Islam, Feminist Art, Chinese Painting, or Art of the City. May be repeated. (noncredit)
The Astronomy curriculum introduces students to basic topics such as the characteristics of the Solar System, the nature of the sun and other stars, the galaxy we exist in, its extent and evolution.

Several different level courses are presented in a multi-mode instructional fashion—for example, multi-media, planetarium presentations and laboratory and field experiences. Special emphasis is placed on the understanding of observable celestial phenomena and events familiar to the individual's natural environment. The program is not designed to prepare students for Astronomy majors and does not presume extensive backgrounds in science and mathematics.
ATHLETICS COURSES »

ATHL 100 BASEBALL TRAINING
Formerly known as PHED 102
Units: 0.5-3
Hours: 58 laboratory per unit
Stresses baseball training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate baseball. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 101 BASKETBALL TRAINING
Formerly known as PHED 106
Units: 0.5-3
Hours: 58 laboratory per unit
Stresses basketball training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate basketball. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 105 SPRINGBOARD DIVING TRAINING
Units: 0.5-3
Hours: 58 laboratory per unit
Stresses diving training, skills, knowledge, strategy and appreciation. Intended for students with high school and/or recreational experience who are preparing for competitive intercollegiate diving. May be taken four times for credit. (CSU)

ATHL 106 FOOTBALL TRAINING
Formerly known as PHED 101
Units: 0.5-3
Hours: 58 laboratory per unit
Stresses football training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate football. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 107 GOLF TRAINING
Formerly known as PHED 103
Units: 0.5-3
Hours: 58 laboratory per unit
Stresses golf training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate golf. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 109 SOCCER TRAINING
Formerly known as PHED 116
Units: 0.5-3
Hours: 58 laboratory per unit
Stresses soccer training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate soccer. May be taken four times for credit. (CSU, UC-with unit limitation)
ATHL 110 SOFTBALL TRAINING  
Formerly known as PHED 111  
Units: 0.5-3  
Hours: 58 laboratory per unit  
Stresses softball training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate softball. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 111 SWIMMING TRAINING  
Formerly known as PHED 107  
Units: 0.5-3  
Hours: 58 laboratory per unit  
Stresses swimming training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate swimming. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 112 TENNIS TRAINING  
Formerly known as PHED 104  
Units: 0.5-3  
Hours: 58 laboratory per unit  
Stresses tennis training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate tennis. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 116 VOLLEYBALL TRAINING  
Formerly known as PHED 110  
Units: 0.5-3  
Hours: 58 laboratory per unit  
Stresses volleyball training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate volleyball. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 117 WATER POLO TRAINING  
Formerly known as PHED 108  
Units: 0.5-3  
Hours: 58 laboratory per unit  
Stresses water polo training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate water polo. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 118 WRESTLING TRAINING  
Formerly known as PHED 112  
Units: 0.5-3  
Hours: 58 laboratory per unit  
Stresses wrestling training, skills, knowledge, strategy and appreciation. Intended for students with varsity high school experience who are preparing for competitive intercollegiate wrestling. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 150 INTERCOLLEGIATE BASEBALL (M)  
Formerly known as PHED 161  
Units: 1-3  
Advisory: Recommended for men with advanced baseball skills, conditioning and previous competitive experience  
Hours: 58 laboratory per unit  
Intercollegiate baseball competition conducted through NCAA and California Commission College Athletic Association (CCCAA) rules. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 151 INTERCOLLEGIATE BASKETBALL (M)  
Formerly known as PHED 143  
Units: 1-3  
Advisory: Recommended for men with advanced basketball skills, conditioning and previous competitive experience  
Hours: 58 laboratory per unit  
Intercollegiate men’s basketball competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 152 INTERCOLLEGIATE BASKETBALL (W)  
Formerly known as PHED 123  
Units: 1-3  
Advisory: Recommended for women with advanced basketball skills, conditioning and previous competitive experience  
Hours: 58 laboratory per unit  
Intercollegiate women’s basketball competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 153 INTERCOLLEGIATE FOOTBALL (M)  
Formerly known as PHED 142  
Units: 1-3  
Advisory: Recommended for men with advanced football skills, conditioning and previous competitive experience  
Hours: 58 laboratory per unit  
Intercollegiate football competition conducted through NCFA and California Community College Athletic Association rules. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 154 INTERCOLLEGIATE GOLF (M)  
Formerly known as PHED 162  
Units: 1-3  
Advisory: Recommended for men with advanced golf skills, conditioning and previous competitive experience  
Hours: 58 laboratory per unit  
Intercollegiate men’s golf competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit. (CSU, UC-with unit limitation)
ATHL 155 INTERCOLLEGIATE GOLF (W)
Formerly known as PHED 127
Units: 1-3
Advisory: Recommended for women with advanced golf skills and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate women's golf competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit. (CSU, UC—with unit limitation)

ATHL 156 INTERCOLLEGIATE SOCCER (W)
Formerly known as PHED 124
Units: 1-3
Advisory: Recommended for women with advanced soccer skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate women's soccer competition conducted through FIFA laws of the game and CCCAA rules. May be taken four times for credit. (CSU—with unit limitation)

ATHL 157 INTERCOLLEGIATE SOFTBALL (W)
Formerly known as PHED 131
Units: 1-3
Advisory: Recommended for women with advanced softball skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate women's softball competition conducted through NCAA and California Community College Athletic Association rules. May be taken four times for credit. (CSU, UC—with unit limitation)

ATHL 158 INTERCOLLEGIATE SWIMMING (M)
Formerly known as PHED 165
Units: 1-3
Advisory: Recommended for men with advanced swimming skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate men's swimming and diving competition conducted through NCAA and California Community College Athletic Association rules. May be taken four times for credit. (CSU, UC—with unit limitation)

ATHL 159 INTERCOLLEGIATE SWIMMING (W)
Formerly known as PHED 134
Units: 1-3
Advisory: Recommended for women with advanced swimming skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate women's swimming and diving competition conducted through NCAA and California Community College Athletic Association rules. May be taken four times for credit. (CSU, UC—with unit limitation)

ATHL 160 INTERCOLLEGIATE TENNIS (M)
Formerly known as PHED 163
Units: 1-3
Advisory: Recommended for men with advanced tennis skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate men's tennis competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit. (CSU, UC—with unit limitation)

ATHL 161 INTERCOLLEGIATE TENNIS (W)
Formerly known as PHED 132
Units: 1-3
Advisory: Recommended for women with advanced tennis skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate women's tennis competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit. (CSU, UC—with unit limitation)

ATHL 162 INTERCOLLEGIATE VOLLEYBALL (W)
Formerly known as PHED 122
Units: 1-3
Advisory: Recommended for women with advanced volleyball skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate women's volleyball competition conducted through the California Commission on Athletics rules. May be taken four times for credit. (CSU—with unit limitation)

ATHL 163 INTERCOLLEGIATE WATER POLO (M)
Formerly known as PHED 146
Units: 1-3
Advisory: Recommended for men with advanced water polo skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate men's water polo competition conducted through NCAA and California Community College Athletic Association rules. May be taken four times for credit. (CSU, UC—with unit limitation)

ATHL 164 INTERCOLLEGIATE WATER POLO (W)
Formerly known as PHED 137
Units: 1-3
Advisory: Recommended for women with advanced water polo skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate women's water polo competition conducted through NCAA and California Community College Athletic Association rules. May be taken four times for credit. (CSU, UC—with unit limitation)
ATHLETICS

ATHL 165 INTERCOLLEGIATE WRESTLING (M)
Formerly known as PHED 145
Units: 1-3
Advisory: Recommended for men with advanced wrestling skills, conditioning and previous competitive experience
Hours: 58 laboratory per unit
Intercollegiate wrestling competition conducted through NCAA and California Community College Athletic Association rules. May be taken four times for credit. (CSU, UC-with unit limitation)

ATHL 199 INTERCOLLEGIATE SPORTS CONDITIONING
Units: 0.5-2.5
Advisory: Recommended for student athletes training for an intercollegiate sport; advanced sport specific skills and fitness levels suggested
Hours: 58 laboratory per unit
Instruction in sport-specific strength and conditioning protocols related to improving muscular strength, power, agility and speed. Principles of sport-specific technical and tactical methodology presented. May be taken four times for credit. (CSU)

AUTOMOTIVE TECHNOLOGY

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION
DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
FACULTY: S. Smith, A. Wong
LIAISON COUNSELORS: E. Farrelly, D. Quadros

The Automotive Technology Program is certified by the National Automotive Educational Technician Foundation (NATEF). The program is supported by the Central Valley New Car Dealership Association (CVNCA), is a member of Professional Automotive Training Centers (PATC) and has a Memorandum of Understanding (MOU) with Nissan of North America. All full-time automotive instructors are Master ASE Certified or above. The Automotive Technology Program is Automotive Service Excellence (ASE) certified in the following areas: Engine Repair, Automatic Transmission/Transaxles, Manual Drivetrains & Axles, Suspension/Steering, Brakes, Electric/Electronic Systems, Heating/Air Conditioning and Engine Performance.

The Automotive Technology Curriculum is designed (1) to prepare students to become competent technicians and gain employment in the automotive industry at the completion of the program and (2) to upgrade skills of those already in the field.

AUTOMOTIVE ANALYSIS
A.A. OR A.S. DEGREE
Successful completion of the curriculum in Automotive Analysis qualifies students for entry-level positions in the various areas of automotive technology and provides them with an overview for selecting specific areas for further training and education. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 1 Automotive Data Acquisition</td>
<td>.5</td>
</tr>
<tr>
<td>AUTO 61 Vehicle and Engine Analyzing</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 64 Hydraulic and Brake Systems</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 68A Basic Automatic Transmissions</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 71A Automotive Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 79 Suspension and Wheel Alignment</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 150 Introduction to Automotive Technology Profession</td>
<td>.5</td>
</tr>
</tbody>
</table>

PLUS 4 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 66A Engine Reconditioning</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 69 Automotive Air Conditioning and Heating</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 75 Automotive Electronics</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 80 Automotive Powertrains Manual Transmissions</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 25
Recommended Electives: AUTO 95, BUS 20, BUS 100, for students with particular interest in these areas.

CERTIFICATES

The Automotive Technology certificate program is designed to qualify students for specialized positions in automotive repair and related industries and to upgrade the skills of technicians already in the field. The program also includes the Master Automotive Technician Certificate, which certifies competence in all areas of conventional automotive repair and maintenance.

Certificate patterns consist of course concentration in specific areas, plus study in relevant areas such as Introductory Welding for Metalworking (WELD 15). General education courses are not required. Specialized certificates require 18 to 36 units of course work, while the Master Automotive Technician Certificate requires 58.5 units. A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

LICENSES:
Automotive Emission Control
Automotive Lighting Systems
Automotive Brake Systems

The Automotive Technology program offers courses designed for mechanics who want to apply for a new license, or renew a license, in the areas of emission control, lighting and brake systems. See AUTO 31 and 64.
**AUTOMOTIVE ENGINE MACHINING**

**CERTIFICATE OF ACHIEVEMENT**

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 1 Automotive Data Acquisition</td>
<td>.5</td>
</tr>
<tr>
<td>AUTO 60 Skill and Speed Development</td>
<td>1</td>
</tr>
<tr>
<td>AUTO 89A Engine Reconditioning</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 66B Engine Reconditioning</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 150 Introduction to Automotive Technology Profession</td>
<td>.5</td>
</tr>
<tr>
<td>WELD 15 Introductory Welding for Metalworking</td>
<td>2</td>
</tr>
</tbody>
</table>

**PLUS 6 ADDITIONAL UNITS FROM:**

- AUTO 28 Independent Study                              | 1-2   |
- AUTO 95 Internship in Automotive Technology            | 1-4   |
- WELD 40 Wire Feed MIG Welding OR                       |       |
- WELD 50 Gas Tungsten Arc Welding (TIG)                  | 2-3   |

**TOTAL UNITS REQUIRED:** 18

---

**AUTOMOTIVE TRANSMISSION**

**CERTIFICATE OF ACHIEVEMENT**

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 1 Automotive Data Acquisition</td>
<td>.5</td>
</tr>
<tr>
<td>AUTO 60 Skill and Speed Development</td>
<td>1</td>
</tr>
<tr>
<td>AUTO 88A Basic Automatic Transmissions</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 71A Automotive Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 80 Automotive Powertrains Manual Transmissions</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 150 Introduction to Automotive Technology Profession</td>
<td>.5</td>
</tr>
<tr>
<td>WELD 15 Introductory Welding for Metalworking</td>
<td>2</td>
</tr>
</tbody>
</table>

**PLUS 3 ADDITIONAL UNITS FROM:**

- AUTO 28 Independent Study                              | 1-2   |
- AUTO 95 Internship in Automotive Technology            | 5-2   |
- BUS 140 Small Business Management                     | 3     |

**TOTAL UNITS REQUIRED:** 19

---

**AIR CONDITIONING AND BODY ELECTRICAL**

**CERTIFICATE OF ACHIEVEMENT**

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 1 Automotive Data Acquisition</td>
<td>.5</td>
</tr>
<tr>
<td>AUTO 60 Skill and Speed Development AND/OR</td>
<td>1</td>
</tr>
<tr>
<td>AUTO 150 Introduction to Automotive Technology Profession</td>
<td>.5</td>
</tr>
<tr>
<td>WELD 15 Introductory Welding for Metalworking</td>
<td>2</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 19

---

**ALIGNMENT AND BRAKE**

**CERTIFICATE OF ACHIEVEMENT**

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 1 Automotive Data Acquisition</td>
<td>.5</td>
</tr>
<tr>
<td>AUTO 89A Hydraulic and Brake Systems</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 150 Introduction to Automotive Technology Profession</td>
<td>.5</td>
</tr>
<tr>
<td>WELD 15 Introductory Welding for Metalworking</td>
<td>2</td>
</tr>
</tbody>
</table>

**PLUS 3 ADDITIONAL UNITS FROM:**

- AUTO 28 Independent Study                              | 1-2   |
- AUTO 95 Internship in Automotive Technology            | 5-2   |
- BUS 140 Small Business Management                     | 3     |

**TOTAL UNITS REQUIRED:** 19

---

**EMISSION AND DRIVEABILITY TUNE-UP**

**CERTIFICATE OF ACHIEVEMENT**

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 1 Automotive Data Acquisition</td>
<td>.5</td>
</tr>
<tr>
<td>AUTO 31 Automotive Emission Control Systems OR</td>
<td></td>
</tr>
<tr>
<td>Possession of California Smog Certification License</td>
<td>0-4.5</td>
</tr>
<tr>
<td>AUTO 34 Advanced Emissions Diagnostics and Service OR</td>
<td>0-1.5</td>
</tr>
<tr>
<td>Possession of California Smog Certification License</td>
<td></td>
</tr>
<tr>
<td>AUTO 60 Skill and Speed Development OR</td>
<td></td>
</tr>
<tr>
<td>AUTO 95 Internship in Automotive Technology</td>
<td></td>
</tr>
<tr>
<td>AUTO 61 Vehicle and Engine Analyzing</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 62A Engine Fuel System Principles and Controls</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 62B Computer Controlled Carburetion and Fuel Injection</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 63 Advanced Engine Performance Diagnosis</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 69 Automotive Air Conditioning and Heating</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 71A Automotive Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 75 Automotive Electronics</td>
<td></td>
</tr>
<tr>
<td>AUTO 150 Introduction to Automotive Technology Profession</td>
<td>.5</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 19-36
MASTER AUTOMOTIVE TECHNICIAN
CERTIFICATE OF ACHIEVEMENT

REQUIRED COURSES UNITS
AUTO 1 Automotive Data Acquisition ......................... .5
AUTO 31 Automotive Emission Control Systems ................ 4.5
AUTO 60 Skill and Speed Development AND/OR ................ 3
AUTO 61 Vehicle and Engine Analyzing .......................... 4
AUTO 62A Engine Fuel System Principles and Controls ...... 4
AUTO 63 Advanced Engine Performance Diagnosis .......... 4
AUTO 64 Hydraulic and Brake Systems ......................... 4
AUTO 66A Engine Reconditioning .............................. 4
AUTO 68A Basic Automatic Transmissions ..................... 4
AUTO 69 Automotive Air Conditioning and Heating .......... 4
AUTO 71A Automotive Electrical Systems .................... 4
AUTO 79 Suspension and Wheel Alignment .................... 4
AUTO 80 Automotive Powertrains Manual Transmissions .... 4
AUTO 150 Introduction to Automotive Technology Profession .. .5
TOTAL UNITS REQUIRED: 13

PLUS 8 ADDITIONAL UNITS FROM:
AUTO 62B Computer Controlled Carburetion and Fuel Injection 4
AUTO 66B Engine Reconditioning .............................. 4
AUTO 75 Automotive Electronics .............................. 4
TOTAL UNITS REQUIRED: 58.5

POWERTRAIN
CERTIFICATE OF ACHIEVEMENT

REQUIRED COURSES UNITS
AUTO 1 Automotive Data Acquisition ......................... .5
AUTO 60 Skill and Speed Development ......................... 1
AUTO 68A Basic Automatic Transmissions ..................... 4
AUTO 71A Automotive Electrical Systems .................... 4
AUTO 80 Automotive Powertrains Manual Transmissions .... 4
AUTO 150 Introduction to Automotive Technology Profession .. .5
WELD 15 Introductory Welding for Metalworking .......... 2
TOTAL UNITS REQUIRED: 19

ENTRY LEVEL AUTOMOTIVE SERVICE AND REPAIR
SKILLS CERTIFICATE

Designed to give students the automotive service/repair knowledge and abilities to successfully enter the workforce as an entry level automotive service technician requiring minimal supervision. This skills certificate focuses on skills and knowledge needed to diagnose, service and repair automotive electrical, brake, suspension and steering. This is a specialty skills certificate designed to provide career technical skills to enter the automotive repair business; it is not equivalent to an associate degree.

REQUIRED COURSES UNITS
AUTO 1 Automotive Data Acquisition ......................... .5
AUTO 64 Hydraulic and Brake Systems ....................... 4
AUTO 71A Automotive Electrical Systems .................... 4
AUTO 79 Suspension and Wheel Alignment .................... 4
AUTO 150 Introduction to Automotive Technology Profession .. .5
TOTAL UNITS REQUIRED: 13

AUTOMOTIVE TECHNOLOGY COURSES »

AUTO 1 AUTOMOTIVE DATA ACQUISITION
Units: 0.5
Hours: 11 (7 lecture, 4 activity)
Retrieval and application of automotive service data from online technical data bases including ALLDATA and Mitchell on Demand, as well as other websites related to automotive service information, shop management systems and documentation. Recommended for all Automotive Program students during their first semester of study. (not transferable)

AUTO 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

AUTO 31 AUTOMOTIVE EMISSION CONTROL SYSTEMS
Units: 4.5
Hours: 81 lecture
Training for meeting BAR Level 1 towards inspector license (E0), fundamental knowledge of engine and emission control theory, design and operation. Successful completion meets the first step of the Bureau of Automotive Repair (BAR) training requirements for inexperienced or minimally experienced candidates for the Smog Check Inspector license (E0). (not transferable)
AUTO 34 ADVANCED EMISSIONS DIAGNOSTICS AND SERVICE
Units: 1.5
Prerequisite: Successful completion of AUTO 31 and passing grade on the State required Basic Clean Air Car Course examination
Hours: 29 lecture
BAR approved Advanced Clean Air Car Course for EA smog licensing. Includes baseline techniques for loaded mode testing, dynamometers, BAR 97 Transition Dyno Safety, advanced waveform patterns, diagnostic strategies and information specific to California emission standards. Successful completion of BAR Advanced Clean Air Car Course examination is required for the BAR EA smog license examination. Student must also be certified in ASE A6-A8 and L.1 or have taken BAR approved alternative courses to be eligible for BAR smog technician examination. (not transferable)

AUTO 59 INTRODUCTION TO AUTOMOTIVE SERVICE
Units: 4
Hours: 108 (54 lecture, 54 laboratory)
Designed for students with little or no formal background or training in the automotive field. Shop safety, tool usage and hazardous waste management are covered. Vehicle topics include: engine operation, lubrication, cooling, ignition, electrical, suspension, fuel systems, brakes, tires and drive train. (CSU)

AUTO 60 SKILL AND SPEED DEVELOPMENT
Units: 1-2
Prerequisite: Completion of AUTO 1 and one of the following courses: AUTO 64, 66A, 68A, or 71A with grades of “C” or better
Hours: 54 laboratory per unit
Designed to further develop skill, speed and experience capabilities of automotive majors to meet industry diagnostic and repair performance expectations. Individual projects selected by students with the agreement and guidance of instructor. Required of all automotive majors and automotive certificate students in area of specialization. Materials fee. (not transferable)

AUTO 61 VEHICLE AND ENGINE ANALYZING
Units: 4
Hours: 108 (54 lecture, 54 laboratory)
Study of automotive engine theories and principles. Emphasis on construction, repair and adjustment methods of engine systems and components on engine performance diagnostic analysis using the latest equipment and methods. Also covers generic on-board diagnostic second generation (OBD2) engine control. Preparation for ASE Certification exam. (not transferable)

AUTO 62A ENGINE FUEL SYSTEM PRINCIPLES AND CONTROLS
Units: 4
Hours: 108 (54 lecture, 54 laboratory)
Basic principles of engine air/fuel management to meet emission and fuel economy needs. Emphasis on basic circuitry and adjustment procedures. A study of the relationship of today’s gasoline, engine performance and fuel controls using carburetion and fuel injection. Preparation for ASE Certification exam. (CSU)

AUTO 62B COMPUTER CONTROLLED CARBURETION AND FUEL INJECTION
Units: 4
Prerequisite: Completion of AUTO 61, 62A and 71A with grades of “C” or better
Hours: 108 (54 lecture, 54 laboratory)
Applications, theory of operation and service to electronic computer controlled carburetion, fuel injection and emission control systems. Diagnosis and repair driveability and engine performance faults involving all types of low and high pressure electronic feedback fuel injection systems on modern low and zero emission vehicles. Preparation for ASE Certification exam and smog repair technician license exam. (not transferable)

AUTO 63 ADVANCED ENGINE PERFORMANCE DIAGNOSIS
Formerly BAR A6, A8 and L1 alternative courses. (not transferable)
Units: 4
Prerequisite: Completion of AUTO 1 and 62B with grades of “C” or better
Hours: 108 (54 lecture, 54 laboratory)
BAR Specified Diagnostic and Repair Training. Study of engine performance, electrical/electronics, advanced level engine performance diagnosis. Preparation for BAR Smog Check Repair Technician E1 License and ASE Certification exam. Formerly BAR A6, A8 and L1 alternative courses. (not transferable)

AUTO 64 HYDRAULIC AND BRAKE SYSTEMS
Units: 4
Hours: 108 (54 lecture, 54 laboratory)
Application of industry standards and practices for the inspection, diagnosis, service and repair of automotive and light truck braking systems. Theory of operation as well as service procedures for disc and drum brake systems, hydraulic systems, power-assist devices and anti-lock brake systems. Prepares students for California State Brake Adjuster License and ASE Brake Certification exam. (CSU)
AUTO 66A ENGINE RECONDITIONING  
**Units:** 4  
**Hours:** 108 (54 lecture, 54 laboratory)  
Introduction to the machines and measuring processes used in the reconditioning of automotive and light truck engines including: cylinder head re-surfacing, valve guide repair, valve refacing, valve seat replacement and finishing by grinding as well as carbide forming bits. Precision measurement of parts with micrometers and dial bore gauges. Part cleaning and inspection processes including Magnaflux and penetrating dye. Preparation for ASE Certification exam. (CSU)

AUTO 66B ENGINE RECONDITIONING  
**Units:** 4  
**Prerequisite:** Completion of AUTO 66A  
**Hours:** 108 (54 lecture, 54 laboratory)  
Advanced engine machinist course. Students are required to completely rebuild one liquid-cooled engine. Engine and parts to be supplied by the student; cost varies from $300 to $1,000. Preparation for ASE Certification exam. (CSU)

AUTO 68A BASIC AUTOMATIC TRANSMISSIONS  
**Units:** 4  
**Hours:** 108 (54 lecture, 54 laboratory)  
Theory of operation as well as service and repair practices for automatic transmissions and transaxles. Topics include: hydraulic torque converters and pumps, planetary gear sets, clutches and bands, hydraulic systems and apply devices and electronic controls. Emphasis on diagnosis, adjustment, service and rebuilding of transmissions used on domestic and foreign automobiles. Testing on a transmission dynamometer. Preparation for ASE Certification exam A-1. (not transferable)

AUTO 69 AUTOMOTIVE AIR CONDITIONING AND HEATING  
**Units:** 4  
**Hours:** 108 (54 lecture, 54 laboratory)  
Principles in automotive air conditioning and heating systems. Emphasis on theory, controls, diagnosis, service, repair and installation. A study in heat transfer, with methods of troubleshooting and repair of live vehicle air conditioning and heating systems. Course includes use of State and Federal approved recovery and recycling equipment. Preparation for ASE Certification exam. (CSU)

AUTO 70 AUTOMOTIVE ELECTRONICS  
**Units:** 4  
**Prerequisite:** Completion of AUTO 71A or equivalent  
**Hours:** 108 (54 lecture, 54 laboratory)  
Advanced study in automotive electronics and control systems; resistor, capacitor, inductor, diode and transistor circuitry with application to solid state sensors, controllers and actuators. In depth study on electrical diagnostics using digital storage oscilloscope. Preparation for ASE Certification exam. (CSU)

AUTO 71A AUTOMOTIVE ELECTRICAL SYSTEMS  
**Units:** 4  
**Hours:** 108 (54 lecture, 54 laboratory)  
Study of the theory, testing, diagnosis and service of common body and engine electrical circuits, including batteries, switching, fusing, relays, thermal timers, DC motors, alternator principles, series circuits and parallel circuits. Live system failure diagnosis using voltmeters, ammeters and ohmmeters. Preparation for ASE Certification exam. (CSU)

AUTO 75 AUTOMOTIVE ELECTRONICS  
**Units:** 4  
**Prerequisite:** Completion of AUTO 71A or equivalent  
**Hours:** 108 (54 lecture, 54 laboratory)  
Advanced study in automotive electronics and control systems; resistor, capacitor, inductor, diode and transistor circuitry with application to solid state sensors, controllers and actuators. In depth study on electrical diagnostics using digital storage oscilloscope. Preparation for ASE Certification exam. (CSU)

AUTO 79 SUSPENSION AND WHEEL ALIGNMENT  
**Formerly known as AUTO 77 & 78**  
**Units:** 4  
**Hours:** 108 (54 lecture, 54 laboratory)  
Principles of wheel alignment, steering and suspension systems and their components. Methods of measuring and adjusting alignment geometry for automobiles and light trucks including four wheel alignment. Identification and correction of damaged and worn steering components. Emphasis on analyzing the cause and correction of improper suspension and alignment conditions including conventional and strut-type suspension systems. Preparation for ASE Certification. (CSU)

AUTO 80 AUTOMOTIVE POWERTRAINS MANUAL TRANSMISSIONS  
**Units:** 4  
**Hours:** 108 (54 lecture, 54 laboratory)  
Theory of operation as well as service and repair procedures for automotive and light truck manual transmission and drive train systems. Topics include: diagnosis and overhaul techniques for manual transmissions/transaxles, drivelines, four-wheel-drive transfer cases, clutches and differentials (including limited slip). Preparation for ASE Certification A-3 Manual Drive Train and Axles. (CSU)

AUTO 81 COMPUTERIZED ENGINE ANALYZER  
**Units:** 1.5  
**Prerequisite:** Completion of AUTO 62B, 63 and 75, or equivalent experience  
**Hours:** 36 (24 lecture, 12 laboratory)  
Advanced engine performance diagnosis of On Board Diagnostic 1 (OBD1) equipped vehicles. Theory of operation and hands-on practices in using a computerized engine analyzer, digital storage oscilloscopes, five-gas emission analyzer and hand-held diagnostic scan tools. Prepares for ASE Certification exam. (CSU)

AUTO 95 INTERNSHIP IN AUTOMOTIVE TECHNOLOGY  
**Units:** 0.5-4  
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)
BIOLOGICAL SCIENCES

DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211
FACULTY: P. Badaracco, K. Carroll, S. Martinez, K. Muma, S. Pikul, W. Place, J. Skillen, I. Thomas, S. Warren
LIAISON COUNSELORS: T. Maddux, M. Moon, S. Muraki

The Biological Sciences Department offers course work in Anatomy, Biology, Botany, Microbiology, Physiology and Zoology.

TRANSFER AND MAJOR REQUIREMENTS in Biological Sciences are available in the Counseling Center. Transfer students planning to major in Biology, Botany, Zoology, Ecology, Microbiology, Anatomy, Physiology, Forestry, Wildlife Management, Natural Resources, Medicine, Dentistry, Veterinary Medicine, Optometry and Pharmacy should consult with a counselor for specific transfer requirements.

BIOLOGICAL SCIENCES
A.S. DEGREE

The Biological Science curriculum provides students with the opportunity to meet the requirements for transferring to four-year colleges in the areas of Agriculture, Animal Science, Biochemistry, Bioengineering, Biological Sciences, Biotechnology, Chiropractic, Clinical Lab Technician, Curator, Dental Hygiene, Dentistry, Environmental Studies, Forestry, Nutrition/Diетetics, Occupational Therapy, Plant Science, Pharmacy, Physical Therapy, Premedical, Nursing, Range Management, Veterinary Medicine, Wildlife/Fisheries Biologist and Zoologist, or entry level positions in related fields. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES
12 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1</td>
<td>General Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 2</td>
<td>Botany</td>
<td>4.5</td>
</tr>
<tr>
<td>BIOL 3</td>
<td>General Zoology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 4</td>
<td>Microbiology OR</td>
<td></td>
</tr>
<tr>
<td>BIOL 8A AND 8B</td>
<td>Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 5</td>
<td>Human Anatomy OR</td>
<td></td>
</tr>
<tr>
<td>BIOL 7A</td>
<td>Human Anatomy I AND</td>
<td></td>
</tr>
<tr>
<td>BIOL 7B</td>
<td>Human Anatomy II</td>
<td>4-5</td>
</tr>
<tr>
<td>BIOL 6</td>
<td>Human Physiology</td>
<td>5</td>
</tr>
</tbody>
</table>

AUTO 150 INTRODUCTION TO AUTOMOTIVE TECHNOLOGY PROFESSION

Units: 0.5

Hours: 9 lecture

Career exploration in the automotive technology industry. Includes orientation to the automotive technology program at Sierra College, employment opportunities, career pathways, educational planning for Associate degree, certificate and transfer. Research on labor market and occupational information. Develop an educational plan. (pass/no pass grading) (not transferable)

AUTO 300 SELECTED TOPICS IN AUTOMOTIVE TECHNOLOGY

Units: 0.5-4

 Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

AUTO 400 SELECTED TOPICS IN AUTOMOTIVE TECHNOLOGY

Units: 0.5-4

 Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)
PLANT STUDY EMPHASIS:
AGRI 158A Plant Identification .......................... 3
AGRI 158B Plant Identification .......................... 3
BIOL 2 Botany OR
BIOL 22 Introduction to Botany .......................... 4-4.5
BIOL 16C Vernal Pools and the California Prairie .......................... 5
BIOL 16E Ecology of the Sierran Conifer Forest .......................... 5
BIOL 23 Wildflower Identification (also AGRI 182) .......................... 5
BIOL 24 Wildland Trees and Shrubs (Dendrology)
(also AGRI 163) .......................... 4

GENERAL EMPHASIS:
AGRI 221 Introduction to Soil Science .......................... 3
BIOL 16A Local Ecosystems of Placer County .......................... 3
ESS 1 The Environment and the Human Impact .......................... 3
GEOG 1 Physical Geography .......................... 3
MATH 13 Elementary Statistics .......................... 4

TOTAL UNITS REQUIRED: 25

*Only 3 units total may be taken from the BIOL 16 Field Studies courses. Courses are grouped according to specific interests, but students are not limited to a specific emphasis. Students opting to take BIOL 1 are advised to consult with a counselor regarding pre/corequisites.

WATERHED ECOLOGY
A.S. DEGREE

The Watershed Ecology Technician’s (WET) program offers courses leading to an associate in science degree. Watershed ecology includes the study of all aspects of the environment including organisms within an entire watershed-the land area draining into the major creeks and river systems. The program can serve as the basic preparation for entry-level positions with organizations and governmental agencies that perform a variety of environmental studies. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).
Watershed ecology includes the study of all aspects of the environment including organisms within an entire watershed-the land area draining into the major creeks and river systems. The certificate program can serve as the basic preparation for entry-level positions with organizations and governmental agencies that perform a variety of environmental studies. A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**REQUIRED CORE COURSES:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1 General Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 11 Concepts of Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 13 Field Methods in Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 14 Natural History, Ecology and Conservation</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 95 Internship in Biological Sciences</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 1A Introduction to Composition OR</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 12 Writing in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>ESS 13 Environmental Regulations</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 90 Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 9 UNITS FROM ANY OF THE FOLLOWING***

**ANIMAL STUDY EMPHASIS:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3 General Zoology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 16D Biology of Waterfowl and Marsh Birds</td>
<td>0.5</td>
</tr>
<tr>
<td>BIOL 16M Marine Mammals and Birds</td>
<td>1.5</td>
</tr>
<tr>
<td>BIOL 30 Introduction to Ornithology</td>
<td>2</td>
</tr>
<tr>
<td>BIOL 33 Introduction to Zoology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 35 Introduction to Entomology</td>
<td>2</td>
</tr>
</tbody>
</table>

**PLANT STUDY EMPHASIS:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 158A Plant Identification</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 158B Plant Identification</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2 Botany OR</td>
<td>4-4.5</td>
</tr>
<tr>
<td>BIOL 22 Introduction to Botany</td>
<td>4-4.5</td>
</tr>
<tr>
<td>BIOL 16C Vernal Pools and the California Prairie</td>
<td>0.5</td>
</tr>
<tr>
<td>BIOL 16E Ecology of the Sierra Conifer Forest</td>
<td>0.5</td>
</tr>
<tr>
<td>BIOL 23 Wildflower Identification (also AGRI 182)</td>
<td>0.5</td>
</tr>
<tr>
<td>BIOL 24 Wildland Trees and Shrubs (Dendrology) (also AGRI 163)</td>
<td>4</td>
</tr>
</tbody>
</table>

**GENERAL EMPHASIS:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 221 Introduction to Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 16A Local Ecosystems of Placer County</td>
<td>0.5</td>
</tr>
<tr>
<td>ESS 1 The Environment and the Human Impact</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1 Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>MATH 13 Elementary Statistics</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 28**

*Only 3 units total may be taken from the BIOL 16 Field Studies courses. Courses are grouped according to specific interests, but students are not limited to a specific emphasis. Students opting to take BIOL 1 are advised to consult with a counselor regarding pre/corequisites.*

**BIOLOGICAL SCIENCES COURSES »**

**BIOL 1 GENERAL BIOLOGY**

Units: 4

Prerequisite: Completion of high school chemistry or CHEM A or higher with grade(s) of “C” or better; AND eligibility for ENGL 11

Advisory: Eligibility for ENGL 1A

Hours: 108 (54 lecture, 54 laboratory)

First course in the General Biology sequence for biology majors and pre-professional students. Covers general biological concepts, with an emphasis on cellular and molecular biology, genetics and evolution. (CSU, UC)

**BIOL 2 BOTANY**

Units: 4.5

Prerequisite: Completion of BIOL 1

Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended

Hours: 144 (54 lecture, 90 laboratory)

Introduction to botany, including classification, morphology, anatomy, physiology, diversity, ecology and evolution emphasizing members of the Kingdoms Plantae, Fungi, Protista and Monera. Topics relating to flowering plants stressed. Correlation of topics with scientific method and modern biological research. Nonlife science majors see BIOL 14, 22 and 44. (CSU, UC-with unit limitation)

**BIOL 3 GENERAL ZOOLOGY**

Units: 4

Prerequisite: Completion of BIOL 1 or BIOL 33

Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended

Hours: 144 (36 lecture, 108 laboratory)

A detailed survey of the animal kingdom stressing evolution and ecology of animals and functional anatomy of their major organ systems. Recommended for life science majors, premedical, pre-veterinary and related professional programs. (CSU, UC-with unit limitation)

**BIOL 4 MICROBIOLOGY**

Units: 5

Prerequisite: Completion of high school chemistry, CHEM A, or higher level chemistry course with a grade of “C” or better

Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended

Hours: 162 (54 lecture, 108 laboratory)

Introduction to the biochemistry, morphology, physiology, genetics, classification and significance of microorganisms, especially bacteria and viruses. Emphasis on medically important organisms and their impact on human health. Students enrolling in BIOL 4 after having taken BIOL 8A will lose credit for BIOL 8A. (CSU, UC-with unit limitation)
BIOL 5 HUMAN ANATOMY  
Units: 4  
Prerequisite: Completion of ENGL 50 or equivalent  
Advisory: Completion of BIOL 55, 56, HSCI 3, previous science course, or experience in health care field  
Hours: 108 (54 lecture, 54 laboratory)  
Structure, relationships among structures and histology of the human body. A rigorous course in human anatomy designed especially for science/medical majors (premedical, predental, prenursing, occupational and physical therapy, laboratory technician, medical technician, physical education, zoology, biology and other science-oriented majors). Cadavers utilized in the laboratory. Nonmajors see BIOL 55, 56 and 56L. Students enrolling in BIOL 5 after having taken BIOL 7A will lose credit for BIOL 7A. (CSU, UC-with unit limitation)  

BIOL 6 HUMAN PHYSIOLOGY  
Units: 5  
Prerequisite: Completion of CHEM 2A or 1A or 3A/3B; AND BIOL 5 or 7A/7B or 55 with grades of "C" or better  
Advisory: Eligibility for ENGL 11 strongly recommended  
Hours: 126 (72 lecture, 54 laboratory)  
Function, regulation and homeostasis of systems in the human body. Recommended for students in nursing, medicine, physical education, and occupational therapy, psychology and life science majors. Experiments on nonliving systems, blood and circulation, muscle, nervous system and sense organs, ion balance and fluid environment, endoclines, respiration and digestion. (CSU, UC-with unit limitation)  

BIOL 7A HUMAN ANATOMY I  
Units: 2.5  
Prerequisite: Eligibility for ENGL 11  
Advisory: Completion of BIOL 55 or 56 or HSCI 3 or previous science course or experience in health care field  
Hours: 72 (36 lecture, 36 laboratory)  
Structure, relationships among structures and histology of the organ systems of the human body. Includes integumentary, skeletal, nervous and sensory systems. Cadaver dissections are used for instruction. The sequence of BIOL 7A/7B is equivalent to BIOL 5. Students enrolling in BIOL 5 after having taken BIOL 7A will lose credit for BIOL 7A. (CSU, UC-with unit limitation)  

BIOL 7B HUMAN ANATOMY II  
Units: 2.5  
Prerequisite: Completion of BIOL 7A with grade of "C" or better  
Hours: 72 (36 lecture, 36 laboratory)  
Structure, relationships among structures and histology of the organ system of the human body. Includes muscle, cardiovascular, lymphatic, endocrine, respiratory, digestive, urinary and reproductive systems. Cadaver dissections are used for instruction. The sequence of BIOL 7A/7B is equivalent to BIOL 5. (CSU, UC-with unit limitation)  

BIOL 8A MICROBIOLOGY  
Units: 2.5  
Prerequisite: Completion of high school chemistry, CHEM A, or higher level chemistry course with a grade of "C" or better  
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended  
Hours: 81 (27 lecture, 54 laboratory)  
Introduction to the biochemistry, morphology, classification and physiology of microorganisms, especially bacteria. Emphasis on medically significant organisms and their impact on human health. The sequence of BIOL 8A/8B is equivalent to BIOL 4. Students enrolling in BIOL 4 after having taken BIOL 8A will lose credit for BIOL 8A. (CSU, UC-with unit limitation)  

BIOL 8B MICROBIOLOGY  
Units: 2.5  
Prerequisite: Completion of BIOL 8A with a grade of "C" or better  
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended  
Hours: 81 (27 lecture, 54 laboratory)  
Introduction to microbial genetics & metabolic regulation, viruses, microbial control, host defense, immunization, epidemiology, mechanisms of pathogenicity and significance of microorganisms, especially bacteria and viruses. Emphasis on medically important organisms and their impact on human health. The sequence of BIOL 8A/8B is equivalent to BIOL 4. (CSU, UC-with unit limitation)  

BIOL 10 INTRODUCTION TO BIOLOGY  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Designed specifically for non-life science majors, covering organization of life, cellular processes, genetics and evolution, diversity of life, ecology and the impact of humans on and interdependence with, the environment. Will meet life science requirements in most general education programs. Does not fulfill laboratory science requirement. Not open to those who have completed BIOL 1 or BIOL 11. (CSU, UC-with unit limitation)  

BIOL 11 CONCEPTS OF BIOLOGY  
Units: 4  
Advisory: Eligibility for ENGL 1A or ESL 40W and MATH 12 or equivalent  
Hours: 108 (54 lecture, 54 laboratory)  
An introduction to the main concepts of biology. Covers molecular and cell biology, heredity and nature of genes, biotechnology, evolution, diversity of life and principles of ecology. Designed for non-life science majors desiring an introductory biology course with a lab. Students enrolling in BIOL 11 after having taken BIOL 10 will lose credit for BIOL 10. (CSU, UC-with unit limitation)
BIOLOGICAL SCIENCES

BIOL 13 FIELD METHODS IN ECOLOGY
Formerly known as BIOL 13B
Units: 3
Advisory: Completion of BIOL 14 strongly recommended
Hours: 108 (36 lecture, 54 laboratory)
Introduction to methods for sampling and studying environmental parameters with emphasis on watershed-based ecosystems. Identification of microscopic and macroscopic organisms, especially indicator species, quantitative and qualitative field research techniques and procedures applicable to environmental assessment. Field trips required. (CSU)

BIOL 14 NATURAL HISTORY, ECOLOGY AND CONSERVATION
Units: 4
Advisory: Eligibility for ENGL 1A
Hours: 108 (54 lecture, 54 laboratory)
Introduction to the study of biology and ecology of organisms and ecosystems of the world, with an emphasis on California. Special focus on significance of functioning ecosystems and human influence on biological environment. (CSU, UC)

BIOL 15 MARINE BIOLOGY
Units: 4
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 108 (54 lecture, 54 laboratory)
Introduction to basic biological and ecological principles of major saltwater environments. Stresses conservation and appropriate utilization of marine resources. Designed for both science and non-science majors. Laboratory hours partially fulfilled by required field trips. Hiking and boat travel may be necessary. Camping and entrance fees may be required. (CSU, UC)

BIOL 16 FIELD STUDIES IN BIOLOGY
Units: 0.5-5
Designed to cover field study activities and topics relevant to biology. Courses provide information and hands-on experiences at selected sites which best demonstrate biological principles. Topics and places vary with each subtitle. See class schedule for current semester offerings. Each subtitle may be taken once. (CSU)

BIOL 16A LOCAL ECOSYSTEMS OF PLACER COUNTY
Units: 0.5
Hours: 13 (7 lecture, 6 laboratory)
An introduction to local natural areas and their inhabitants. Selected ecosystems in Placer County are investigated in the field to identify and study the characteristic plants and animals and discover their relationships with the physical environment. Specific study sites may vary. (CSU)

BIOL 16B LOCAL ECOSYSTEMS OF NEVADA COUNTY
Units: 0.5
Hours: 13 (7 lecture, 6 laboratory)
An introduction to local natural areas and their inhabitants. Selected ecosystems within Nevada County are investigated in the field to identify and study the characteristics of plants and animals and discover their relationships with the physical environment. Specific study sites may vary. (CSU)

BIOL 16C VERNAL POOLS AND THE CALIFORNIA PRAIRIE
Units: 0.5
Hours: 13 (7 lecture, 6 laboratory)
Explores the ecological past, present and future of California’s Great Valley ecosystems. Emphasis on remaining natural areas and conservation efforts. Special attention given to grasslands and vernal pool habitats. (CSU)

BIOL 16D BIOLOGY OF WATERFowl AND MARSH BIRDS
Units: 0.5
Hours: 13 (7 lecture, 6 laboratory)
Identification and observation of marsh birds (primarily ducks, geese, swans and wading birds) in the field. Includes general waterfowl biology and ecology. Emphasizes evolution, migration, reproductive cycles, current population trends and habitat needs. Operational needs and conflicts of national and local wildlife refuge system are discussed. (CSU)

BIOL 16E ECOLOGY OF THE SIERRAN CONIFER FOREST
Units: 0.5
Hours: 13 (7 lecture, 6 laboratory)
Introduction to forest biology/ecology, emphasizing interrelationships between the Sierran forest inhabitants (animals, plants, fungi) and their environment. Study sites include a variety of forest and other associated mountain ecological communities. Depending on season offered, special topics may include: fungi biology, wildflower ecology, tree anatomy and physiology, forest nutrient cycles, forest birds and soil organisms. (CSU)

BIOL 16G FIELD PALEONTOLOGY AND ANCIENT ENVIRONMENTS
Also known as ESCI 16G
Units: 1-4
Hours: 30 (12 lecture, 18 laboratory) per unit
Investigations into the ecology of environments in the geologic past through field work at fossil sites. Comparisons/contrasts made between ancient (fossil) communities and the current (living) communities of selected study sites. Differences and similarities between the plants and animals used as evidence to reconstruct ancient ecological communities. (CSU)
**BIOL 16H ECOLOGY OF THE MENDOCINO COAST**
*Units: 1*
*Hours: 30 (12 lecture, 18 laboratory)*
Field Biology class examining the Northern California Coast and its diverse ecological environments. Using the Fort Bragg/Mendocino/Fort Ross areas, this field class investigates the biological relationships found in: the redwood, riparian, pygmy, mixed evergreen and closed-cone pine forests and the shoreline communities of tidepool, sandy beach, dune, prairie and scrub. Plants, animals, environmental factors and effects of human activities are assessed for each of the ecological communities examined. Hiking may be necessary. Camping and entrance fees may be required. (CSU)

**BIOL 16I BIOLOGY OF MONO LAKE AND THE GREAT BASIN**
*Units: 1*
*Hours: 30 (12 lecture, 18 laboratory)*
Natural history and ecology of the Great Basin with special emphasis on Mono Lake and the Mono Basin. Field study examines physical, biological, historical and ecological aspects that make the Mono Basin unique. Emphasis on biological and ecological aspects of the Mono Basin. (CSU)

**BIOL 16J BIOLOGY OF POINT REYES NATIONAL SEASHORE**
*Units: 1*
*Hours: 30 (12 lecture, 18 laboratory)*
Field Biology class exploring the coastal mosaic of Point Reyes National Seashore and vicinity. Using the ecological communities present (forests, shoreline, pond and prairie), this area provides a rich biological “laboratory” to study its unique organisms and natural ecosystems, including grasslands, mudflats, forests, marshes, cliffs, beach and dune sites. Depending on season offered, the emphasis may be on wildflowers, mushrooms, owls, elk, reptiles or other life forms. Hiking may be necessary. Camping and entrance fees may be required. (CSU)

**BIOL 16K FOOTHILL ECOLOGY OF THE SIERRA NEVADA**
*Units: 1.5*
*Hours: 45 (18 lecture, 27 laboratory)*
Field course designed to investigate ecology of the foothills to mid-montane zones of the Sierra Nevada. Focus on major terrestrial and aquatic ecosystems and ecological islands from 500 to 6000 feet elevation. (CSU)

**BIOL 16L CALIFORNIA WATERWAYS (RIPARIAN AND AQUATIC BIOLOGY)**
*Units: 1.5*
*Hours: 45 (18 lecture, 27 laboratory)*
Biological diversity and ecology of aquatic environments and the biology of water life. Focuses on the “water cycle” and its biological importance and human interactions. Ponds, vernal pools, streams, rivers, lakes, springs, meadows, bogs, marshes (fresh and salt), shorelines, deltas and bay/estuary environments are investigated. Study sites may include Lake Tahoe, the American River, San Francisco Bay and other aquatic locations. Hiking or boat travel may be necessary. Camping, entrance and transportation fees may be required. (CSU)

**BIOL 16M MARINE MAMMALS AND BIRDS**
*Units: 1.5-6*
*Hours: 45 (18 lecture, 27 laboratory)*
Introduction to the biology of marine mammals and marine birds. Shore and pelagic organisms are studied, emphasizing California-associated species and their habitats. Field and lecture topics include: ecology, evolution, behavior, reproduction, distribution, anatomy, physiology, identification and population status of whales, true and eared seals, sea otters, shore, bay and pelagic birds. Hiking and boat travel may be necessary. Camping and entrance fees may be required. (CSU)

**BIOL 16N MODOC PLATEAU ECOLOGY**
*Units: 1.5*
*Hours: 45 (18 lecture, 27 laboratory)*
Field biology of volcanic and cold desert landscapes found in the Modoc Plateau region of California/Oregon. Ecosystems and environmental relationships stressed. Areas of emphasis include forest ecology, fresh water marsh/watershed, environmental factors, volcanic geology, plant succession and human influences. Study sites include Lava Beds National Monument and Tule Lake Wildlife Refuge. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

**BIOL 16O HIGH SIERRA AND WHITE MOUNTAIN ECOLOGY**
*Units: 2*
*Hours: 54 (27 lecture, 27 laboratory)*
Examines high-elevation mountain ecosystems using the high Sierra Nevada and White-Inyo Mountains of California as specific study sites. Observation and study of sub-alpine and alpine ecosystems like forests, montane chaparral, meadows, aquatic habitats, alpine tundra and fell-fields. (CSU)
BIOL 16P DEATH VALLEY AND DESERT ECOSYSTEMS
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Explores the unique desert ecosystems of Death Valley National Park and nearby areas. Extreme differences of elevation from high mountains to below sea level provide a rich variety of desert environments, plants and animals to study. Field work emphasizes identification of animals and plants (many unique to these exotic desert habitats), their special physical and behavioral adaptations to the harsh desert climate and habitats and the effects of human activities upon the fragile desert ecosystems. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

BIOL 16Q ECOLOGY OF MID-WESTERN NORTH AMERICA
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Introduction to ecology of the major biomes, communities and life zones of the Midwestern and Western regions of the United States, emphasizing plains grasslands, montane forests, desert badlands, alpine zones and aquatic habitats. Each ecological area explored as to its climate, common plants and animals, range, distribution, relationships, geology, historical changes, paleoecology and other environmental factors. Fossil and other evidence of past environments will be compared to present communities. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

BIOL 16R CANYON LANDS OF THE SOUTHWEST
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Biology/ecology of the Southwestern Canyon lands and semi-arid regions associated with the Grand Canyon, Zion, Bryce and nearby natural areas. Local plants, animals, microenvironments, river systems, human impacts and resource management and special biotic relationships with the canyon landscapes emphasized. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

BIOL 16T COASTAL HABITATS OF NORTHERN CALIFORNIA
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Explores the unique biological and ecological features of the California north coast, including Redwoods National Park, Prairie Creek Redwoods and Big Lagoon. Coastal ecosystems to be studied include the redwood forest, coastal grassland, rocky tidepool, marshes, stream, bog, coastal strand and mixed-evergreen forest (their climate, geology, ecology and plant and animal diversity). The human impacts of a growing population with resource demands discussed. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

BIOL 16U COASTAL HABITATS OF CENTRAL CALIFORNIA
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Biological survey of the unique features of the central California coast between Morro Bay, Big Sur, Monterey Bay and Point Reyes National Seashore. Coastal habitats explored, identifying coastal plants, animals and geologic processes and emphasizing the interrelationships characteristic of coastal environments. Environments studied include sandy beach, ocean bay, tidepool, mudflat, coastal forests, oak woodland, grasslands and coastal scrub. Areas will be contrasted with other coastal regions. Human impacts and living styles will be viewed as they effect the natural environments. Hiking and boat travel may be necessary. Camping, entrance and transportation fees may be required. (CSU)

BIOL 16V DESERTS OF SOUTHERN CALIFORNIA
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Explore and study the “hot” deserts of Southern California (the Mojave and Sonoran/Colorado Deserts and regional variations), discovering their unique animals and plants which are adapted to these extreme and beautiful environments. These deserts will be compared to nearby coastal habitats or the desert ecosystems in Arizona (depending on local conditions). California study sites visited include, at least, Joshua Tree National Park, Mojave Desert, Salton Sea and Anza-Borrego State Park. Focuses upon the interdependency between the physical environments and the biological inhabitants that live there. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

BIOL 16W BIOLOGY OF PACIFIC NORTHWEST AND THE CASCADES
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Biological survey of the Pacific Northwest rainforest and coastal and mountain environments of Washington and Oregon, such as the Olympic Peninsula and Cascade Mountains. Special topics include ecological succession and coastal biogeography. (CSU)

BIOL 16Y ECOLOGY OF SELECTED WILDERNESS ECOSYSTEMS
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
A field study of selected wilderness sites, comparing their biological inventory, ecological relationships, physical environments and sensitivity to human interactions and activities. Both qualitative and quantitative field survey techniques will be used to record ecological data at each study site. Management techniques, history and objectives of wilderness preservation and resource use conflicts will be emphasized. (CSU)
BIOL 16Z ECOLOGY OF THE AMERICAN RIVER  
Units: 0.5  
Hours: 13 (7 lecture, 6 laboratory)  
Aquatic, riparian and associated ecosystems of Sierra Nevada river systems with specific attention on the American River system. (CSU)

BIOL 17A EXTENDED FIELD BIOLOGY OF SELECTED BIOMES  
Units: 5  
Hours: 162 (54 lecture, 108 laboratory)  
An extended field biology study comparing selected biomes and ecosystems, emphasizing first hand observations, field measurements, sampling of the biota and the applications of biological and ecological concepts applied to broad study areas. Intensive observations of interrelationships between the living and non-living environmental elements of the selected sites compared, including: climates, geology, plant and animal identification and animal behaviors. Comparison of numerous habitats within the biomes studied. Extended hiking, air and boat travel may be necessary. Camping, entrance and transportation fees may be required. (CSU)

BIOL 21 HORTICULTURAL PLANT SCIENCE  
Also known as AGRI 156  
Units: 4  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 108 (54 lecture, 54 laboratory)  
Introduction to biological principles of horticultural practices emphasizing structure, growth, physiology and reproduction of flowering plants and their responses to modifications and environment; including propagation, media, soil and plant nutrition. Explores the interrelationship of horticulture with other life sciences and technology. Identifies the value of plants and gardens in past and present societies. (CSU, UC)

BIOL 22 INTRODUCTION TO BOTANY  
Units: 4  
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended  
Hours: 108 (54 lecture, 54 laboratory)  
Study of the biology of plants, fungi and selected protists. Includes the structure, function, evolution and ecology of these groups, as well as identification of common and important species. Emphasis on the significance of these species to humanity. Designed for non-science majors. (CSU, UC-with unit limitation)

BIOL 23 WILDFLOWER IDENTIFICATION  
Also known as AGRI 182  
Units: 1  
Hours: 26 (13 lecture, 13 activity)  
Plant identification, terminology, keying, uses and ecology. Field trips may require ability to hike moderate distances. (CSU)

BIOL 24 WILDLAND TREES AND SHRUBS (DENDROLOGY)  
Also known as AGRI 163  
Units: 4  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 108 (54 lecture, 54 laboratory)  
Botanical characteristics, taxonomy, physiology and community relationships of the major trees and shrubs in the Western United States. Discussion of commercial uses and geographic ranges of these plants. Identifying specimens under field conditions and using herbarium specimens. (CSU)

BIOL 28 INDEPENDENT STUDY  
Units: 1-3  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

BIOL 30 INTRODUCTION TO ORNITHOLOGY  
Units: 2  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 (27 lecture, 27 laboratory)  
Introduction to ecology, evolution and identification of birds, with emphasis on Northern California avifauna. Field trips included. (CSU, UC)

BIOL 33 INTRODUCTION TO ZOOLOGY  
Units: 4  
Advisory: Eligibility for ENGL 11  
Hours: 108 (54 lecture, 54 laboratory)  
A survey of the animal kingdom emphasizing functional anatomy, ecology and natural history of the important groups of animals. Designed for non-science majors. (CSU, UC-with unit limitation)

BIOL 35 INTRODUCTION TO ENTOMOLOGY  
Units: 2  
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended  
Hours: 54 (27 lecture, 27 laboratory)  
Emphasizes the importance of insects and their biology, natural history and identification. Usually offered alternate Spring semesters. Recommended for general education students, forestry, agriculture and elementary education majors. (CSU, UC)
BIOL 36 INTRODUCTION TO MAMMALOGY
Units: 2
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 54 (27 lecture, 27 laboratory)
Emphasis on mammals and their significance to humanity. Topics include: identification; local species; behavioral, structural and physiological adaptations; ecology and human relationships. Recommended for general education students or other majors interested in mammals. (CSU)

BIOL 44 INTRODUCTION TO MICROBIOLOGY
Units: 3
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 90 (36 lecture, 54 laboratory)
A survey course for non-biology majors emphasizing environmental microbiology including important bacteria, fungi, algae, protozoa and viruses. Meets lab science requirement. Recommended for general education students and especially for home economics, agriculture, forestry and other food/water service related majors. Nursing and allied health majors should take BIOL 4. Laboratory hours partially fulfilled by required field trips. (CSU, UC-with unit limitation)

BIOL 55 GENERAL HUMAN ANATOMY AND PHYSIOLOGY
Units: 4
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 108 (54 lecture, 54 laboratory)
Structure and function of human organ systems. Designed for non-science majors desiring a basic understanding of the human body. Fetal pigs dissected in the laboratory. Experiments performed on models, nonliving systems and oneself. (CSU, UC-with unit limitation)

BIOL 56 BIOLOGY: A HUMAN PERSPECTIVE
Units: 3
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 54 lecture
Principles of biology and how they relate to humans. Emphasis on the human organism, including anatomy, physiology, medicine, research, genetics, evolution, ecology and human impacts on the environment. Not recommended for Biological Sciences majors. Not open to those who have completed BIOL 10, 11, or 55. (CSU, UC-with unit limitation)

BIOL 56L BIOLOGY: A HUMAN PERSPECTIVE (LABORATORY)
Units: 1
Corequisite: Concurrent enrollment in BIOL 56
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 54 laboratory
Optional laboratory course to be taken with BIOL 56. Topics parallel lecture course. (CSU, UC-with unit limitation)

BIOL 95 INTERNSHIP IN BIOLOGICAL SCIENCES
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU-with unit limitation)

BIOL 300 SELECTED TOPICS IN BIOLOGICAL SCIENCES
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

BIOL 301 NATURAL HISTORY OF COSTA RICA
Units: 1-4
Hours: As scheduled for the appropriate combination of lecture/laboratory hours
The new world (American) tropics are referred to as the neotropics. This is a survey course covering the basics in neotropical ecology and natural history including general ecological principles, rain forest structure and function, evolutionary patterns, life zones of Costa Rica (specifically) and plants, birds and mammals of the rainforest. (CSU)
BUSINESS

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION
DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
LIAISON COUNSELORS: E. Farrelly, M. Moon, Reyes Ortega

The business discipline offers training in nine major areas: Accounting, Administrative Professional, Business Administration, Business Entrepreneurship, General Business, Management, Marketing, Real Estate and Risk Management and Insurance. For Computer Information Systems and Computer Science, see separate catalog listings. The Business department plays a vital role in preparing students for their careers. Experience has demonstrated the importance of a background in general education for all students planning a career in business.

TRANSFER MAJOR REQUIREMENTS in Business Administration are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Graduates in Business Administration are qualified for positions in Accounting, Finance, Management, Marketing and Business Teacher Education.

A.A. and A.S. degrees can be earned in the major areas of business. Also some transfer majors may earn A.A./A.S. degrees. Certificates may be earned in some areas of business.

BUSINESS ADMINISTRATION FOR TRANSFER AS-T DEGREE
Business Administration is designed to provide a broad knowledge of the functional areas of a business while developing managerial skills, communication skills, technical abilities and decision-making capability. Students will analyze and critically evaluate information to solve business problems, evaluate and use appropriate technology in the changing business environment, analyze ethical and social issues in business situations and make business and economic decisions that reflect professional responsibility.

The Associate in Science in Business Administration for Transfer degree (AS-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Business Administration. Students completing the Associate in Science in Business Administration for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Science in Business Administration for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:
• completion of the major requirements with grades of C or better; and
• certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 1 Financial Accounting I.</td>
<td>3</td>
</tr>
<tr>
<td>BUS 2 Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 3 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 48 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1A Fundamentals of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1B Fundamentals of Economics</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3-4 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 13 Elementary Statistics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 20 Finite Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 42 Business Calculus</td>
<td>4</td>
</tr>
</tbody>
</table>

PLUS 6 ADDITIONAL UNITS FROM THE FOLLOWING OR ANY UNUSED COURSES FROM THE PRECEDING AREA:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 20 Introduction to Business OR</td>
<td></td>
</tr>
<tr>
<td>BUS 102 Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 50 Applying Computer Software OR</td>
<td></td>
</tr>
<tr>
<td>CIS 62 Business Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 27-28
ACCOUNTING
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

Successful completion of the curriculum in accounting prepares students for positions as accounting clerks, bookkeepers, payroll clerks or entry-level accountants. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES UNITS
BUS 1 Financial Accounting I ..................................... 3
BUS 2 Financial Accounting II .................................. 3
BUS 3 Managerial Accounting ...................................... 3
BUS 9 Federal Income Taxation of Individuals .................... 3
CIS 50 Applying Computer Software OR
ENGL 12 Writing in the Workplace .............................. 3
CIS 80 Spreadsheets in a Business Environment ................. 3

PLUS 3 ADDITIONAL UNITS FROM THE FOLLOWING:
BUS 8 Computerized Accounting for Windows .................. 3
BUS 20 Introduction to Business ................................ 3
BUS 48 Business Law ............................................ 3
BUS 55 International Business Practices .......................... 3
BUS 64 Business Mathematics .................................. 3
BUS 101 Personal Money Management .......................... 3
BUS 115 Introduction to Banking .................................. 3
BUS 150 Business Capstone ...................................... 3

TOTAL UNITS REQUIRED: 21

ADMINISTRATIVE PROFESSIONAL
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

(FORMERLY OFFICE TECHNOLOGY—ADMINISTRATIVE SUPPORT CONCENTRATION)

Successful completion of the curriculum for the administrative professional qualifies students for entry-level positions requiring skills and abilities to provide administrative support for businesses and similar organizations. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see page 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED CORE COURSES UNITS
BUS A Elements of Accounting OR
BUS 1 Financial Accounting I ..................................... 3
BUS 8 Computerized Accounting for Windows .................. 3
BUS 20 Introduction to Business ................................ 3
BUS 102 Business Communications OR
CIS 50 Applying Computer Software .............................. 3
CIS 70 Word Processing-Beyond the Basics ..................... 3
CIS 80 Spreadsheets in a Business Environment ................. 3

PLUS A MINIMUM OF 3 ADDITIONAL UNITS FROM:
BUS B Accounting and Finance for the Small Business Owner .. 3
BUS 52 Creating a Virtual Office (also CIS 52) .................. 3
BUS 53 Marketing a Virtual Office (also CIS 53) ............... 3
BUS 54 Managing a Virtual Office (also CIS 54) ................ 3
BUS 55 International Business Practices ........................ 3
BUS 64 Business Mathematics .................................. 3
BUS 85 Introduction to Oral Communication ................... 3
BUS 95 Internship in Business OR
CIS 95 Internship in Computer Information Systems .......... 1-3
BUS 115 Introduction to Banking .................................. 3
BUS 116 Customer Service Skills .................................. 3
CIS 90 Database Management ..................................... 3
CIS 100 Software for Dynamic Presentations .................... 3
CIS 120 Creating Business Graphics with Microsoft Publisher .. 3
CIS 135 Project Management Concepts .......................... 3
CIS 136 Project Management Software .......................... 3

TOTAL UNITS REQUIRED: 24
### BUSINESS ADMINISTRATION
#### A.A. OR A.S. DEGREE

The A.A. or A.S. degree in Business Administration is primarily for students who plan to transfer with a business major. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 1</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 2</td>
<td>Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 3</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CIS 50</td>
<td>Applying Computer Software OR</td>
<td></td>
</tr>
<tr>
<td>CSCI 10</td>
<td>Introduction to Computing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 48</td>
<td>Business Law OR</td>
<td></td>
</tr>
<tr>
<td>ECON 1B</td>
<td>Fundamentals of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1A</td>
<td>Fundamentals of Economics OR</td>
<td></td>
</tr>
<tr>
<td>ECON 1B</td>
<td>Fundamentals of Economics</td>
<td></td>
</tr>
<tr>
<td>MATH 13</td>
<td>Elementary Statistics OR</td>
<td></td>
</tr>
<tr>
<td>MATH 20</td>
<td>Finite Mathematics OR</td>
<td></td>
</tr>
<tr>
<td>MATH 24</td>
<td>Modern Business Mathematics OR</td>
<td></td>
</tr>
<tr>
<td>MATH 42</td>
<td>Business Calculus OR</td>
<td>3-4</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 21-22**

Recommended Elective: BUS 150

### BUSINESS ENTREPRENEURSHIP
#### A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

(FORMERLY SMALL BUSINESS)

The Business Entrepreneurship curriculum prepares students to be owners, managers or employees in small to mid-size businesses. This program also serves as a business foundation for students seeking careers in entrepreneurial pursuits or small business development. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS B</td>
<td>Accounting and Finance for the Small Business Owner OR</td>
<td></td>
</tr>
<tr>
<td>BUS 1</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 20</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 28</td>
<td>Independent Study OR</td>
<td></td>
</tr>
<tr>
<td>BUS 52</td>
<td>Creating a Virtual Office (also CIS 52)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 55</td>
<td>International Business Practices</td>
<td>3</td>
</tr>
<tr>
<td>BUS 85</td>
<td>Introduction to Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>BUS 101</td>
<td>Personal Money Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 115</td>
<td>Introduction to Banking</td>
<td>3</td>
</tr>
<tr>
<td>BUS 150</td>
<td>Business Capstone</td>
<td>3</td>
</tr>
<tr>
<td>CIS 50</td>
<td>Applying Computer Software OR</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 22-24**

### GENERAL BUSINESS
#### A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

Successful completion of the curriculum in general business prepares students for entry-level positions in business. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS A</td>
<td>Elements of Accounting OR</td>
<td></td>
</tr>
<tr>
<td>BUS 1</td>
<td>Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 20</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 48</td>
<td>Business Law OR</td>
<td>3</td>
</tr>
<tr>
<td>BUS 64</td>
<td>Business Mathematics OR</td>
<td>3</td>
</tr>
<tr>
<td>BUS 85</td>
<td>Introduction to Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>BUS 102</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 50</td>
<td>Applying Computer Software OR</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 10</td>
<td>Introduction to Computing</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 6 ADDITIONAL UNITS FROM:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 8</td>
<td>Computerized Accounting for Windows</td>
<td>3</td>
</tr>
<tr>
<td>BUS 40</td>
<td>Real Estate Principles</td>
<td>3</td>
</tr>
<tr>
<td>BUS 49</td>
<td>Law and Society</td>
<td>3</td>
</tr>
<tr>
<td>BUS 55</td>
<td>International Business Practices</td>
<td>3</td>
</tr>
<tr>
<td>BUS 100</td>
<td>Management Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 101</td>
<td>Personal Money Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 115</td>
<td>Introduction to Banking</td>
<td>3</td>
</tr>
<tr>
<td>BUS 120</td>
<td>Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 150</td>
<td>Business Capstone</td>
<td>3</td>
</tr>
<tr>
<td>CIS 80</td>
<td>Spreadsheets in a Business Environment</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 24**
MANAGEMENT
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT
The curriculum in Management prepares students for entry-level management positions. For the degree, students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS A Elements of Accounting OR</td>
<td>3</td>
</tr>
<tr>
<td>BUS 1 Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 20 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 48 Business Law OR</td>
<td>3</td>
</tr>
<tr>
<td>BUS 49 Law and Society</td>
<td>3</td>
</tr>
<tr>
<td>BUS 100 Management Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 102 Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 103 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140 Small Business Management</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 55 International Business Practices</td>
<td>3</td>
</tr>
<tr>
<td>BUS 101 Personal Money Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 115 Introduction to Banking</td>
<td>3</td>
</tr>
<tr>
<td>BUS 120 Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 150 Business Capstone</td>
<td>3</td>
</tr>
<tr>
<td>CIS 135 Project Management Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 24

REAL ESTATE
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT
The curriculum in Real Estate provides individuals with the technical knowledge and academic background to be competitive in the real estate industry. Successful coursework completion allows individuals to sit for the California Real Estate Salesperson Examination. (For up-to-date licensing requirements refer to the California Department of Real Estate at http://dre.ca.gov.) Career opportunities in real estate and related occupations include real estate salesperson, loan processor, property manager and escrow and title officer. For the degree, students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS A Elements of Accounting OR</td>
<td>3</td>
</tr>
<tr>
<td>BUS 1 Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 49 Real Estate Principles</td>
<td>3</td>
</tr>
<tr>
<td>BUS 41 Real Estate Practice</td>
<td>3</td>
</tr>
<tr>
<td>BUS 47 Legal Aspects of Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>BUS 48 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUS 124 Selling Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 52 Creating a Virtual Office (also CIS 52)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 64 Business Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 85 Introduction to Oral Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21

MARKETING
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT
The curriculum in Marketing prepares students for positions as salespersons, business persons, merchandisers and marketing managers. For the degree, students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 20 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 120 Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 121 Advertising</td>
<td>3</td>
</tr>
<tr>
<td>BUS 123 Retailing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 124 Selling Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21
SMALL BUSINESS
SKILLS CERTIFICATE
Successful completion of the Small Business skills certificate gives students practical skills to start or purchase and effectively manage a small business. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES:  

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS B Accounting and Finance for the Small Business Owner</td>
<td>3</td>
</tr>
<tr>
<td>BUS 48 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUS 120 Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140 Small Business Management</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 12

BUSINESS COURSES »

BUS A ELEMENTS OF ACCOUNTING  
Units: 3  
Hours: 54 lecture  
An introductory course for students without previous study in bookkeeping or accounting. Provides practical skills for individuals to hold bookkeeping or account clerk positions; also appropriate for business owners, managers, administrative assistants and others needing practical knowledge of basic accounting. Includes basic accounting principles, ownership structures, payroll, internal controls and financial statement analysis. (not transferable)

BUS B ACCOUNTING AND FINANCE FOR THE SMALL BUSINESS OWNER  
Units: 3  
Hours: 54 lecture  
Practical study of the accounting and financial management methods essential for the efficient operation of small businesses. Provides entrepreneurs with skills to prepare and analyze financial statements, understand the accounting cycle, prepare financial projections and manage cash flow, accounts receivable, accounts payable and inventory. (not transferable)

BUS 1 FINANCIAL ACCOUNTING I  
Units: 3  
Hours: 54 lecture  
Forms of business entities; principles of accounting; accounting cycle; recording transactions; preparing and analyzing financial statements; internal controls; bank reconciliation; petty cash; inventories and cost of goods sold. (BUS 1 & 2, approved as C-ID ACCT 110) (CSU, UC)

BUS 2 FINANCIAL ACCOUNTING II  
Units: 3  
Prerequisite: Completion of BUS 1 or equivalent with a grade of “C” or better  
Hours: 54 lecture  
Accounting principles; receivables; tangible and intangible assets; current and long-term liabilities including bonds; capital stock and treasury stock; analysis of financial statements. (BUS 1 & 2, approved as C-ID ACCT 110) (CSU, UC)

BUS 3 MANAGERIAL ACCOUNTING  
Units: 3  
Prerequisite: Completion of BUS 2 or equivalent with grade of “C” or better  
Hours: 54 lecture  
Examination of how managers use accounting information in decision-making, planning, directing operations and controlling operations. Focus on cost terms and concepts, cost behavior, cost structure and cost-volume-profit analysis. Examination of profit planning, standard costs, operations and capital budgeting, cost control and accounting for costs in manufacturing organizations. (C-ID ACCT 120) (CSU, UC)

BUS 8 COMPUTERIZED ACCOUNTING FOR WINDOWS  
Units: 3  
Prerequisite: Completion of BUS A or BUS 1 or equivalent  
Hours: 54 lecture  
Introduction to the principles and procedures of accrual accounting using an industry computer accounting program. Accounting applications include general ledger, purchases and accounts payable, sales and accounts receivable, payroll, merchandise inventory and job costing. Includes completion of the accounting cycle, preparation of financial statements and analysis of financial statements for service and retail organizations. (not transferable)

BUS 9 FEDERAL INCOME TAXATION OF INDIVIDUALS  
Units: 3  
Hours: 54 lecture  
Study of the United States individual income tax system. Rights and responsibilities of taxpayers under the Internal Revenue Code. Introduction to filing status, exemptions, income exclusions and inclusions, capital gains/losses, itemized deductions, employee business expenses, sale of home and tax planning. (CSU)

BUS 19 INVESTMENTS  
Units: 3  
Hours: 54 lecture  
An introduction to investment opportunities, principles and practices. Includes investments in government and corporate securities, mutual funds, real estate and tax advantaged securities. (CSU)
BUS 20 INTRODUCTION TO BUSINESS
Units: 3
Hours: 54 lecture
A survey in business providing a multidisciplinary examination of how culture, society, economic systems, legal, international, political, financial institutions and human behavior interact to affect a business organization’s policy and practices within the U.S. and a global society. Demonstrates how these influences impact the primary areas of business. (CSU, UC)

BUS 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

BUS 40 REAL ESTATE PRINCIPLES
Formerly known as REAL 74
Units: 3
Hours: 54 lecture
Fundamental real estate course covering laws and principles of California real estate; gives understanding, background and terminology necessary for advanced study in specialized courses. Helpful to those preparing for the real estate salesperson license examination. (CSU)

BUS 41 REAL ESTATE PRACTICE
Formerly known as REAL 75
Units: 3
Advisory: Completion of BUS 40 with grade of “C” or better
Hours: 54 lecture
Day-to-day operations in real estate, including listing, prospecting, advertising, financing, sales techniques, escrow and ethics. Helpful to those preparing for the real estate salesperson license examination. (CSU)

BUS 47 LEGAL ASPECTS OF REAL ESTATE
Formerly known as REAL 76
Units: 3
Advisory: Completion of BUS 40 with grade of “C” or better
Hours: 54 lecture
Study of the practical aspects of California real estate law, including sources of law, government regulation, property ownership divisions, transfer, title, contracts, escrow and landlord/tenant relationships. (CSU)

BUS 48 BUSINESS LAW
Units: 3
Hours: 54 lecture
The law and its relationship to business with an emphasis on evaluating and managing potential legal and ethical problems. Includes contracts and sales, business torts, employment law, business organizations and the regulatory environment. (CSU, UC)

BUS 49 LAW AND SOCIETY
Units: 3
Hours: 54 lecture
Introduction to the American legal system, including theoretical and practical perspectives on the relationship of law to individuals and to society. Includes the U.S. Constitution, criminal law system, civil dispute resolution, consumer rights, interpersonal and property rights and the law of the workplace. (CSU, UC)

BUS 52 CREATING A VIRTUAL OFFICE
Also known as CIS 52
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Introduction to the Virtual Office Profession. Explores issues to be addressed when creating a virtual office. Topics include managing time, customizing workplace environment, evaluating and buying technology, communicating with technology and business ethics. (not transferable)

BUS 53 MARKETING A VIRTUAL OFFICE
Also known as CIS 53
Units: 3
Advisory: Completion of BUS 52/CIS 52 and CIS 70 with grades of “C” or better
Hours: 54 lecture
Introduction to virtual marketing techniques and skills needed to obtain virtual employment positions and clients. Students identify and evaluate various employment marketing techniques such as networking, conducting virtual interviews, joining professional organizations, developing flyers and brochures, developing a professional Internet web site and using numerous Web-based resources to market skills and services. (not transferable)

BUS 54 MANAGING A VIRTUAL OFFICE
Also known as CIS 54
Units: 3
Advisory: Completion of CIS 50, BUS 52/CIS 52 and CIS 53 with grades of “C” or better
Hours: 54 lecture
Examines specialized professional administrative concepts and documents used to manage information in the virtual workplace. Organizational concepts, decision making, effective business relationships, time and stress management, business plans, ethics, customer service, virtual business technology and teamwork skills are emphasized. (not transferable)
BUSINESS

BUS 100 MANAGEMENT CONCEPTS AND APPLICATIONS
Units: 3
Hours: 54 lecture
Foundation course that explores supervision concepts with a contemporary perspective. Includes the four management functions of planning, controlling, leading and organizing, with emphasis on practical application of skills in communication, leadership, decision-making, staffing, motivation, delegation and team-building to supervise others. Students are given opportunities to apply newly acquired ideas and techniques to workplace situations. (CSU)

BUS 101 PERSONAL MONEY MANAGEMENT
Units: 3
Hours: 54 lecture
Practical approach to personal finance principles. Offers a basic understanding of spending, saving, budgeting, borrowing, lending and investing money; credit and debit cards, credit reports/scores, identity theft, insurance, compound interest, retirement and investments. Students will create a personal financial plan, including goals, budgets and a savings plan. (CSU)

BUS 102 BUSINESS COMMUNICATIONS
Units: 3
Prerequisite: Completion of ENGL 1A with grade of "C" or better
Hours: 54 lecture
Ethical and effective written and oral communication principles and techniques for business situations. Planning, organizing, writing and revising business correspondence for internal and external use. Practice in preparing reports, effectively transferring information and delivering a professional-level oral business presentation. Use of word processing and presentation-graphics software. Provides students a better perspective on communication challenges in the workplace. (CSU)

BUS 103 HUMAN RESOURCE MANAGEMENT
Units: 3
Advisory: Completion of ENGL A with grade of "C" or better or placement by matriculation assessment process
Hours: 54 lecture
A foundational management course for understanding how to manage human capital. Topics, practical application projects and case studies that demonstrate the importance of human resources to drive innovation and competitive advantage. Five functional areas covered include staffing, human resource development, employee relations, workplace health and safety and compensation. (CSU)

BUS 105 THE NEW SUPERVISOR
Units: 1
Hours: 18 lecture
Opportunities and challenges of becoming a new supervisor; contemporary roles of the supervisor; skills, functions and activities of management; importance of organizational culture; managing change; and personal management skills. (not transferable)
BUS 106 CONDUCTING EFFECTIVE INTERVIEWS
Units: 1
Hours: 18 lecture
Overview of recruitment and selection processes organizations use to screen and select applicants for employment. Job analysis, oral interviews and specific strategies for hiring. (not transferable)

BUS 107 COACHING AND MOTIVATING EMPLOYEES
Units: 1
Hours: 18 lecture
Motivational work environments and why such environments are important for productivity. Concepts include coaching, goal setting and unmotivated employees. Practical approaches used by organizations. (not transferable)

BUS 108 MANAGING WORKPLACE CONFLICT
Units: 1
Hours: 18 lecture
Nature, causes and levels of conflict in the workplace. Practical techniques for detecting, understanding and resolving or managing conflict in positive ways; reactive and proactive solutions; conflict orientations and situations appropriate to their use; collaborative problem solving. (not transferable)

BUS 109 EVALUATING EMPLOYEE PERFORMANCE
Units: 1
Hours: 18 lecture
Supervisor’s role in preparing and conducting performance evaluations, formal and informal approaches, common methods, effective performance discussions and employee development. (not transferable)

BUS 110 DISCIPLINING EMPLOYEES
Units: 1
Hours: 18 lecture
Supervisor’s role in performance counseling and discipline. Appropriate procedures for progressive discipline. Applying discipline principles including conducting investigations and writing documentation. (not transferable)

BUS 111 THE SUPERVISOR AS A TEAM LEADER
Units: 1
Hours: 18 lecture
Team approaches for working toward organizational goals through effective leadership. Includes leadership principles, roles and behaviors of team development and work processes that encourage team oriented work. (not transferable)

BUS 115 INTRODUCTION TO BANKING
Units: 3
Hours: 54 lecture
Practical approach to understanding banking operations and principles. Covers basic concepts of financial regulation, the U.S. banking system, money, deposit accounts, the check payment system, electronic banking, lending, bank performance, product sales and safeguarding of customer information. (CSU)

BUS 116 CUSTOMER SERVICE SKILLS
Units: 3
Hours: 54 lecture
Provides the student with understanding and knowledge of the importance of meeting customer needs in a service economy. Emphasis on developing specific skills and abilities critical to providing excellent customer service. Introduction to the concepts of internal and external customers, customer satisfaction and retention. Topics include communicating with customers, developing a positive attitude, handling complaints and ethical issues. (CSU)

BUS 120 INTRODUCTION TO MARKETING
Units: 3
Hours: 54 lecture
The fundamental concepts, relationships and structure necessary for an overall understanding of the field of marketing. Includes identifying and selecting target markets, understanding consumer behavior and making product, pricing, distribution and promotion decisions. (CSU)

BUS 121 ADVERTISING
Units: 3
Hours: 54 lecture
Principles and practices of effective advertising. Marketing research, consumer behavior, target marketing and media strategy are examined as tools for effective advertising. Creative methods and strategies are examined for the development of various types of advertising. (CSU)

BUS 122 MARKETING IN THE DIGITAL AGE
Units: 3
Advisory: Completion of BUS 120 and CIS 37 with grades of “C” or better or equivalent
Hours: 54 lecture
Exploration, analysis and development of effective marketing techniques using the tools available in an evolving world of technology and digital information. Emphasis on marketing on the internet and using the latest technological tools to enhance marketing efforts. (CSU)

BUS 123 RETAILING
Units: 3
Hours: 54 lecture
Concepts and principles involved in making decisions for retail firms. Sales methods, customer relations, store organization, principles of pricing, visual merchandising, buying and advertising are covered. Brick and mortar stores, catalogs, home shopping networks and E-retailing examined. (CSU)
BUSINESS

BUS 124 SELLING DYNAMICS
Units: 3
Hours: 54 lecture
Introduction to communication skills and practical techniques needed in professional selling. Emphasizes the history, career, rewards and duties of a professional sales consultant. Illustrates the importance of the sales function to the organization's success. Examines the social, ethical and legal issues of selling. (CSU)

BUS 140 SMALL BUSINESS MANAGEMENT
Units: 3
Hours: 54 lecture
Practical aspects of starting, buying and managing a small business. Focus on home-based, service, “bricks and mortar,” and e-businesses; forms of ownership, franchising and preparing a business plan; financing a business; accounting and marketing fundamentals; managing human resources, technology and insurance. (CSU)

BUS 150 BUSINESS CAPSTONE
Units: 3
Prerequisite: Completion of one of the following courses with grade of “C” or better: BUS 2, 48, 102, 120, 140, or equivalent
Advisory: Completion of four or more required courses from a business degree or certificate program with a GPA of 3.0 or higher
Hours: 54 lecture
Integration and application of acquired knowledge to real world business problems. Students work in cross-functional groups (accounting, management, marketing, etc.) and utilize problemsolving principles and techniques to evaluate business case studies. Students explore employment and academic opportunities; development of communication, teamwork, leadership and analytical skills vital to career success. Includes guest speakers and field trips to business, nonprofit and/or governmental organizations. Capstone course intended for students who have taken several business courses and will soon complete their studies. (CSU)

BUS 300 SELECTED TOPICS IN BUSINESS
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU)

BUS 400 SELECTED TOPICS IN BUSINESS
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

BUS 809 PERSONAL INVESTMENT AND RETIREMENT PLANNING FOR RETIREES
Units: 0
Hours: 8 lecture
Course designed for older adults. Techniques are offered to manage investments during retirement; includes generating both income and growth for investments, fixed income, stocks, mutual funds, annuities. May be repeated. (noncredit)

CHEMISTRY

SCIENCE AND MATHEMATICS
DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211
FACULTY: M. Brelle, D. Burns, F. Cardoza, K. Clemens, P. Gamel, J. Giuliani, M. Springsteel, B. Vanderboult
LIAISON COUNSELORS: T. Maddux, S. Muraki

The Chemistry program at Sierra College is designed to meet the needs of the diverse community of interests served by the community college. A full program of chemistry for the professional scientist is offered through analytical chemistry and a two-semester course in organic chemistry. A separate track is offered for nursing students that presents general inorganic, organic and biochemistry in a one-year sequence. The Chemistry Department also has a strong commitment to the student with no prior chemistry, or to those whose background is weak.

The entire program is taught with a strong emphasis on the laboratory. In the more advanced classes, students receive hands-on experience with a wide variety of instruments.

TRANSFER MAJOR REQUIREMENTS in Chemistry are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Four-year graduates in Chemistry are qualified for positions in research, industry, education, engineering and the allied medical fields.
CHEMISTRY
A.S. DEGREE
The Chemistry major recognizes a concentration in the field of Chemistry. Successful completion of the curriculum in Chemistry and the associated electives prepare Chemistry students for transfer to four-year colleges or universities. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1A General Chemistry OR</td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 3A-3B General Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 1B General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 5 Quantitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 12A Organic Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 12B Organic Chemistry</td>
<td>5</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 24-25

Recommended Electives:
MATH 30, 31, 32, PHYS 205/205L, 210/210L, 215/215L

CHEMISTRY COURSES »

CHEM A FOUNDATIONS OF COLLEGE CHEMISTRY

Units: 4
Prerequisite: First year high school algebra or MATH A or equivalent with a grade of “C” or better; eligibility for ENGL 50 or ENGL N
Advisory: Eligibility for ENGL 1A
Hours: 108 (54 lecture, 54 laboratory)
A nontransferable course primarily intended to prepare students for general college chemistry. Includes a brief review of math operations important in chemistry, metric system, formulas, equations, gas laws and solutions through related lecture and laboratory exercises. (not transferable)

CHEM 1A GENERAL CHEMISTRY

Units: 5
Prerequisite: High school chemistry or CHEM A or equivalent and second year high school algebra or MATH D or equivalent with a grade of “C” or better
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 162 (54 lecture, 108 laboratory)
Introduction to the general principles of chemistry with emphasis upon quantitative relationships. Properties of matter related whenever possible to present concepts of atomic structure and to the periodic table. Includes atomic structure, the mole concept, gas laws, stoichiometry, redox, acid-base theory, equilibrium and an introduction to modern theories of chemical bonding through related lecture and laboratory exercises. Students enrolling in CHEM 1A after having completed CHEM 3A will lose credit for CHEM 3A. Note: Not open to students who have completed CHEM 3B. CHEM 1A/1B sequence may be started any semester. (CSU, UC-with unit limitation)

CHEM 1B GENERAL CHEMISTRY

Units: 5
Prerequisite: CHEM 1A or CHEM 3B or equivalent with a grade of “C” or better
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 162 (54 lecture, 108 laboratory)
A continuation of CHEM 1A. Includes modern theories of bonding, thermodynamics, electro-chemistry, nuclear chemistry, chemical kinetics and a brief introduction to organic and biochemistry through related lecture and laboratory exercises. Note: CHEM 1A/1B sequence may be started any semester. (CSU, UC-with unit limitation)

CHEM 1X CHEMISTRY 1A PROBLEM SOLVING

Units: 1
Corequisite: Concurrent enrollment in CHEM 1A
Hours: 18 lecture
Optional problem solving course to accompany CHEM 1A. (CSU)

CHEM 1Y CHEMISTRY 1B PROBLEM SOLVING

Units: 1
Corequisite: Concurrent enrollment in CHEM 1B
Hours: 18 lecture
Optional problem solving course to accompany CHEM 1B. (CSU)
CHEM 2A INTRODUCTION TO CHEMISTRY
Units: 5
Prerequisite: Completion of one year high school algebra or MATH A with grade of "C" or better
Advisory: Eligibility for ENGL 1A; completion of high school chemistry or CHEM A with grade of "C" or better; completion of two years of high school algebra or MATH D with grade(s) of "C" or better
Hours: 162 (54 lecture, 108 laboratory)
Designed to meet the requirements for certain nursing, dental hygiene, physical therapy, agriculture and forestry programs (Inorganic Chemistry). An introduction to the fundamental principles of general inorganic chemistry through related lecture and laboratory exercises. (CSU, UC-with unit limitation)

CHEM 2B INTRODUCTION TO CHEMISTRY
Units: 5
Prerequisite: Completion of CHEM 2A with a grade of "C" or better
Advisory: Eligibility for ENGL 1A
Hours: 162 (54 lecture, 108 laboratory)
Designed to meet the requirements for certain nursing, dental hygiene, physical therapy, home economics, agriculture and forestry programs (Organic and Biochemistry). A study of the major classes of organic compounds, including nomenclature, structure, properties and isomerism. Emphasizes the chemistry and metabolism of carbohydrates, lipids and proteins, including nucleo-protein and enzymes through related lecture and laboratory exercises. (CSU, UC-with unit limitation)

CHEM 2X CHEMISTRY 2A PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in CHEM 2A
Hours: 18 lecture
Optional problem solving course to accompany CHEM 2A. (CSU)
CHEM 2Y CHEMISTRY 2B PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in CHEM 2B
Hours: 18 lecture
Optional problem solving course to accompany CHEM 2B. Students use critical thinking and problem solving strategies to solve organic and biochemistry problems. Both lecture and discussion groups utilized. (CSU)

CHEM 3A GENERAL CHEMISTRY
Units: 3
Prerequisite: Second year high school algebra or MATH D or equivalent with a grade of "C" or better
Corequisite: Concurrent enrollment in CHEM 3X
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 90 (36 lecture, 54 laboratory)
The first semester of a two-semester course in general chemistry consisting of that material normally included in one semester of CHEM 1A. This sequence fulfills the prerequisite for CHEM 1B. Students enrolling in CHEM 1A after having taken CHEM 3A will lose credit for CHEM 3A. (CSU, UC-with unit limitation)

CHEM 3B GENERAL CHEMISTRY
Units: 3
Prerequisite: CHEM 3A with a grade of "C" or better
Corequisite: Concurrent enrollment in CHEM 3Y
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 90 (36 lecture, 54 laboratory)
The second semester of a two-semester course in general chemistry consisting of that material normally included in one semester of CHEM 1A. This sequence fulfills the prerequisite for CHEM 1B. (CSU, UC-with unit limitation)

CHEM 3X CHEMISTRY 3A PROBLEM SOLVING
Units: 2
Corequisite: Concurrent enrollment in CHEM 3A
Hours: 36 lecture
Problem solving course to accompany CHEM 3A. Students use critical thinking and problem solving strategies to solve general chemistry problems. (pass/no pass grading) (not transferable)

CHEM 3Y CHEMISTRY 3B PROBLEM SOLVING
Units: 2
Corequisite: Concurrent enrollment in CHEM 3B
Hours: 36 lecture
Problem solving course to accompany CHEM 3B. Students use critical thinking and problem solving strategies to solve general chemistry problems. (pass/no pass grading) (not transferable)

CHEM 5 CHEMISTRY—QUANTITATIVE ANALYSIS
Units: 4
Prerequisite: CHEM 1B or equivalent with a grade of "C" or better
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 144 (36 lecture, 108 laboratory)
Theory and techniques of quantitative chemical measurement, including gravimetric, volumetric and introductory instrumental analysis. Required for all chemistry, chemical engineering, medicine, dentistry, veterinary medicine and related majors. (CSU, UC)

CHEM 12A ORGANIC CHEMISTRY
Units: 5
Prerequisite: Completion of CHEM 1B or equivalent with a grade of "C" or better
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 162 (54 lecture, 108 laboratory)
An extensive course in the chemistry of the compounds of carbon, which emphasizes structure, kinetics, thermodynamics, spectroscopy and synthesis. The laboratory provides direct experience with the reaction, synthesis, purification, identification and characterization (IR, GC, TLC, bp, mp, chemical tests) of organic compounds. Discussions about the emerging field of "Green Chemistry" and performance of Green Chemistry experiments in the laboratory. Required for majors in chemistry as well as many other related fields. (CSU, UC)

CHEM 12B ORGANIC CHEMISTRY
Units: 5
Prerequisite: Completion of CHEM 12A or equivalent with a grade of "C" or better
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended
Hours: 162 (54 lecture, 108 laboratory)
Focuses on carbon based molecules and emphasizes structure, kinetics, thermodynamics, spectroscopy and synthesis. Includes the emerging field of "Green Chemistry." Required for majors in Chemistry as well as many other related fields. (CSU, UC)

CHEM 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)
CHEM 95 INTERNSHIP IN CHEMISTRY
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

COMMUNICATION STUDIES

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: J. Bruno, D. DeFoe, M. Williams, N. Zoffel
liaison counselors: B. Gosney, M. Moon

The Communication Studies program provides an inquiry into the problems and circumstances involved with the sharing and exchange of information and ideas between and among individuals and societies. Communication Studies offers training and skills accepted as necessary for success in public and private life. A broadly based discipline, Communication Studies includes public speaking, interpersonal and group communication, broadcast communication, journalism, graphic design, photography and multimedia.

Students may transfer as Communication Studies majors to the university level and/or use their background as an introduction to such careers as journalist, broadcast journalist, public information specialist, media researcher, public opinion analyst, script writer, reporter, editor of video, film or print media, governmental staff position, graphic designer, photographer and multimedia designer.

COMMUNICATION STUDIES FOR TRANSFER
AA-T DEGREE
Communication Studies is a broadly based discipline that includes public speaking, mass and mediated communication, journalism, interpersonal, intercultural and group communication. The degree program allows students to critically analyze information and arguments, evaluate and create effective oral and written messages, write and deliver effective presentations and formulate communication solutions to problems in professional and personal contexts. This degree program will prepare students to transfer as Communication Studies majors to the university level as well as use their education as an introduction to careers in fields such as journalism, public relations, fundraising, law, broadcasting, mediation, human resources, customer relations, business management and education.

The Associate in Arts in Communication Studies for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Communication Studies. Students completing the Associate in Arts in Communication Studies for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in Communication Studies for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

• completion of the major requirements with grades of C or better; and
• certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSE

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 1 Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 ADDITIONAL UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 2 Argumentation</td>
<td>3</td>
</tr>
<tr>
<td>COMM 3 Group Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 8 Interpersonal Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 UNITS FROM THE FOLLOWING OR UNUSED COURSE FROM THE PRECEDING AREA:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 7 Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 10 Survey of Communication Studies</td>
<td>3</td>
</tr>
<tr>
<td>COMM 15 Mass Media and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING OR ANY UNUSED COURSE FROM THE PRECEDING AREAS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 5 Communication Experience</td>
<td>3</td>
</tr>
<tr>
<td>COMM 12 Visual Communication (also AAD 12)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 21 Introduction to Journalism (also JRNL 20A)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 30 Writing for Media</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 18

COMMUNICATION STUDIES—GENERAL CONCENTRATION
A.A. OR A.S. DEGREE
(formerly Communication Studies—Oral Concentration)

The A.A./A.S. degree in Communication Studies—General Concentration requires 27-28 units in the major. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a mini-
mum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 1 Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>COMM 2 Argumentation</td>
<td>3</td>
</tr>
<tr>
<td>COMM 3 Group Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 8 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 15 Mass Media and Society</td>
<td>3</td>
</tr>
<tr>
<td>COMM 21 Introduction to Journalism</td>
<td>3</td>
</tr>
<tr>
<td>COMM 30 Writing for Media OR</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 12 Writing in the Workplace</td>
<td>3</td>
</tr>
</tbody>
</table>

### PLUS 9-10 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 7 Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 10 Survey of Communication Studies</td>
<td>3</td>
</tr>
<tr>
<td>COMM 12 Visual Communication (also AAD 12)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 28 Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>COMM 95 Internship in Communication Studies</td>
<td>5-4</td>
</tr>
<tr>
<td>CIS 100 Software for Dynamic Presentations</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 10A Fundamentals of Acting OR</td>
<td></td>
</tr>
<tr>
<td>DRMA 10B Advanced Acting</td>
<td>3</td>
</tr>
</tbody>
</table>

### TOTAL UNITS REQUIRED: 27-28

#### COMMUNICATION STUDIES—

**GRAPHIC DESIGN CONCENTRATION**

**A.A. OR A.S. DEGREE**

The A.A./A.S. degree in Communication Studies—Graphic Design Concentration requires 26-27 units in the major. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

### REQUIRED COURSES

**21 UNITS FROM THE FOLLOWING CORE:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 1 Fundamentals of Public Speaking OR</td>
<td></td>
</tr>
<tr>
<td>COMM 5 Communication Experience</td>
<td>3</td>
</tr>
<tr>
<td>COMM 12 Visual Communication (also AAD 12)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 15 Mass Media and Society</td>
<td>3</td>
</tr>
<tr>
<td>COMM 21 Introduction to Journalism</td>
<td>3</td>
</tr>
<tr>
<td>COMM 30 Writing for Media OR</td>
<td></td>
</tr>
<tr>
<td>ENGL 12 Writing in the Workplace</td>
<td></td>
</tr>
<tr>
<td>AAD 30 Portfolio Development and Presentation</td>
<td></td>
</tr>
<tr>
<td>AAD 60 Graphic Design: Principles and Process</td>
<td></td>
</tr>
<tr>
<td>AAD 62 Graphic Computer Illustration</td>
<td></td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging</td>
<td>3</td>
</tr>
</tbody>
</table>

### PLUS 5-6 UNITS SELECTED FROM THE FOLLOWING, OR UNUSED COURSES FROM PRECEDING REQUIREMENTS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 10 Survey of Communication Studies</td>
<td>3</td>
</tr>
<tr>
<td>AAD 20 Portfolio Development and Presentation</td>
<td>3</td>
</tr>
<tr>
<td>AAD 28 Independent Study OR</td>
<td></td>
</tr>
<tr>
<td>COMM 28 Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>AAD 61 Graphic Design II: Digital Design and Production</td>
<td>3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 95 Internship in Applied Art and Design OR</td>
<td></td>
</tr>
<tr>
<td>COMMIT 95 Internship in Communication Studies</td>
<td>5-4</td>
</tr>
</tbody>
</table>

### TOTAL UNITS REQUIRED: 26-27

#### COMMUNICATION STUDIES—

**MULTIMEDIA CONCENTRATION**

**A.A. OR A.S. DEGREE**

The A.A./A.S. degree in Communication Studies, Multimedia Concentration requires 27-29 units in the major. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

### REQUIRED COURSES

**22-23 UNITS FROM THE FOLLOWING CORE:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 1 Fundamentals of Public Speaking OR</td>
<td></td>
</tr>
<tr>
<td>COMM 5 Communication Experience</td>
<td>3</td>
</tr>
<tr>
<td>COMM 12 Visual Communication (also AAD 12)</td>
<td>3</td>
</tr>
<tr>
<td>COMM 15 Mass Media and Society</td>
<td>3</td>
</tr>
<tr>
<td>COMM 21 Introduction to Journalism</td>
<td>3</td>
</tr>
<tr>
<td>COMM 30 Writing for Media OR</td>
<td></td>
</tr>
<tr>
<td>ENGL 12 Writing in the Workplace</td>
<td></td>
</tr>
<tr>
<td>AAD 80 Introduction to Video Production</td>
<td>3</td>
</tr>
<tr>
<td>AAD 85 Introduction to Web Design</td>
<td>3</td>
</tr>
<tr>
<td>AAD 90 Interactivity and Animation for the Web</td>
<td>4</td>
</tr>
</tbody>
</table>

### PLUS 5-6 UNITS SELECTED FROM THE FOLLOWING, OR UNUSED COURSES FROM PRECEDING REQUIREMENTS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 28 Independent Study OR</td>
<td></td>
</tr>
<tr>
<td>COMMIT 28 Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>AAD 70 Introduction to Digital Art and Design</td>
<td></td>
</tr>
<tr>
<td>AAD 75 Introduction to Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>COMMIT 10 Survey of Communication Studies</td>
<td></td>
</tr>
<tr>
<td>AAD 95 Internship in Applied Art and Design OR</td>
<td></td>
</tr>
<tr>
<td>COMMIT 95 Internship in Communication Studies</td>
<td>5-4</td>
</tr>
</tbody>
</table>

### TOTAL UNITS REQUIRED: 27-29
COMMUNICATION STUDIES—PHOTOGRAPHY CONCENTRATION
A.A. OR A.S. DEGREE
The A.A./A.S. degree in Communication Studies, Photography Concentration requires 27-29 units in the major. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES
21-22 UNITS FROM THE FOLLOWING CORE:
COMM 1 Fundamentals of Public Speaking OR
COMM 5 Communication Experience .......................... 3
COMM 12 Visual Communication (also AAD 12) ............ 3
COMM 15 Mass Media and Society ............................ 3
COMM 21 Introduction to Journalism (also JRNL 20A) OR
COMM 30 Writing for Media OR
ENGL 12 Writing in the Workplace ............................ 3
PHOT 65 Documentary Photography .......................... 2
PHOT 70A Advanced Photography ............................. 3
PHOT 75 Introduction to Digital Imaging (also AAD 75) ...... 3
PHOT 80 Color Photography ................................. 2
PHOT 85 Photojournalism .............................. 2

PLUS 6-7 UNITS FROM THE FOLLOWING, OR UNUSED COURSES FROM THE PRECEDING REQUIREMENTS:
AAD 20 Portfolio Development and Presentation ............. 3
COMM 10 Survey of Communication Studies ................. 3
PHOT 28 Independent Study OR
COMM 28 Independent Study ................................ 1-3
PHOT 30 Photographing Works of Art (also AAD 30) ........ 5
PHOT 60A Elementary Photography ............................ 3
PHOT 60B Intermediate Photography .......................... 3
PHOT 88 Business Practices for Photographers ............... 3
PHOT 95 Internship in Photography OR
COMM 95 Internship in Communication Studies .............. 5-4

TOTAL UNITS REQUIRED: 27-29

COMMUNICATION STUDIES COURSES »

COMM 1 FUNDAMENTALS OF PUBLIC SPEAKING
Units: 3
Prerequisite: Eligibility for ENGL 50 or ENGL N
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
An introduction to essential principles and skills of public speaking. Preparing, presenting and critiquing several speech types, particularly informative and persuasive speeches—with emphasis on the selection and organization of supporting material, reasoning, audience adaptation, persuasive strategies and elements of delivery. Formal written outlines are required for all major speeches. (C-ID COMM 110) (CSU, UC-with unit limitation)

COMM 2 ARGUMENTATION
Units: 3
Prerequisite: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
A course in argumentation theory and practice including critical evaluation of claims, research, evidence, reasoning, refutation and rebuttal. Basic principles of argument structure and case building are applied, both in written and oral form, in a variety of problem solving and debate situations. (C-ID COMM 120) (CSU, UC)

COMM 3 GROUP COMMUNICATION
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Theory and practice in small group communication. Topics include dynamics of the small group communication process, individual accountability in groups, problem solving, conflict management, leadership, creative and critical thinking. Requires group and individual presentations and typed outlines. (C-ID COMM 140) (CSU, UC)

COMM 5 COMMUNICATION EXPERIENCE
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
An introduction to concepts and skills needed for effective communication in a variety of contexts. Includes practical experiences in interpersonal, intercultural and small group communication. Requires classroom public speaking. (CSU, UC-with unit limitation)
COMM 7 INTERCULTURAL COMMUNICATION
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
A study of research and theory of communication between cultures. Emphasis on knowledge, motivation and skill to recognize and achieve competence in intercultural communication in a variety of contexts: academic, professional and personal. Topics of examination include historical influences of cultures, cultural patterns, societal perspectives and contexts for theoretical and practical application of intercultural communication skills. (C-ID COMM 150) (CSU, UC)

COMM 8 INTERPERSONAL COMMUNICATION
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
An investigation of the principles and theories of interpersonal communication. Analysis of the dynamics of one-on-one communication to improve competence. Areas of study include perception, self-concept, verbal and nonverbal communication, listening, conflict management and relationship stages. (C-ID COMM 130) (CSU, UC)

COMM 10 SURVEY OF COMMUNICATION STUDIES
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
An introductory survey of the communication field, covering the theoretical study of the development of communication and its interrelationship with society. Includes the history of communication study, communication theory and an overview of interpersonal, intercultural, small group, public and organizational communication, as well as how communication takes place through the fine arts and mass media. (C-ID COMM 180) (CSU, UC)

COMM 12 VISUAL COMMUNICATION
Also known as AAD 12
Units: 3
Hours: 54 lecture
Study of visual communication including design principles, aesthetics, visual perception, non-verbal messages, relationship to verbal communication, audience analysis, mass media and persuasion. Historical overview of visual media as well as current trends and technology. (CSU, UC)

COMM 15 MASS MEDIA AND SOCIETY
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Survey of the history and development of mass media, including radio, television, film, print, the Internet and multimedia. Focuses on exploration of mass communication theories, the critical analysis of media messages and the effects of media on the individual and society. Examines the impact of media on culture, social and political discourse and public policy. (CSU, UC)

COMM 21 INTRODUCTION TO JOURNALISM
Also known as JRNL 20A
Units: 3
Prerequisite: Completion of ENGL 1A or ESL 40W with grade of “C” or better
Hours: 54 lecture
Study of the basic principles of journalism. Development of skills associated with evaluating, gathering and writing news in accepted journalistic style for print and online media. Introduction to the role of the reporter in news organizations, history of journalism, the effects of media on the individual and society and legal and ethical issues related to journalism. (CSU, UC)

COMM 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

COMM 30 WRITING FOR MEDIA
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
An introduction to the styles and formats used in writing for video, radio, television, multimedia and the Internet. Includes critical analysis and the writing of commercials, public service announcements, news releases, narrative scripts and informational programming. (CSU)

COMM 31A INTRODUCTION TO VIDEO PRODUCTION
Also known as AAD 79
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Introduction to principles, techniques and the terminology of video production and post-production. Guided classroom exercises and projects, including pre-production planning, video and audio recording techniques, remote (field) system set-ups and studio set-ups, lighting for single camera video shoots and basic video editing and output. (CSU)
COMM 78 MEDIA PRACTICUM I
Units: 3
Prerequisite: Completion of COMM 15 with grade of “C” or better; completion with grade of “C” or better, or concurrent enrollment in COMM 21 or 30
Advisory: Completion with grade of “C” or better, or concurrent enrollment in ENGL 1B
Hours: 72 (36 lecture, 36 activity)
Application of the principles of Journalism and Communication Studies to develop work for distribution to a campus and community audience. Includes weekly assignments to access a variety of student media across multiple platforms, including print, podcast, radio and online, to develop news and non-fiction feature products. Practical experience in visual communication, online setting, multimedia journalism and emerging mass-communication technologies. (C-ID JOUR 130) (CSU)

COMM 95 INTERNSHIP IN COMMUNICATION STUDIES
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

COMM 300 SELECTED TOPICS IN COMMUNICATION STUDIES
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU)

COMM 301 SPEECH FORENSICS
Units: 1-3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 18 lecture (1 unit); 54 lecture (3 units)
Provides training in the principles, forms and practice of forensic speaking, including informative and persuasive speaking, oral interpretation and debate. Prepares students for participation in and evaluation of competitive forensic events. Nine hours of forensic outreach activities required. (CSU)
CIS 100 Software for Dynamic Presentations ................................. 3
CIS 105 Microsoft Outlook-Managing Information .......................... 3

PLUS 3-4 ADDITIONAL UNITS FROM THE FOLLOWING:
BUS 102 Business Communications ............................................ 3
BUS 116 Customer Service Skills .................................................. 3
CIS 62 Business Information Systems ............................................ 3
CIS 95 Internship in Computer Information Systems ....................... 5-4
CIS 115 Software Configuration and Troubleshooting ................. 3
CIS 120 Creating Business Graphics with Microsoft Publisher ..... 3
CIS 127 Creating Web Sites .......................................................... 3
CIS 137 Managing a Successful Web Project ................................. 3
TOTAL UNITS REQUIRED: 27-28

COMPUTER INFORMATION SYSTEMS—
COMPUTER APPLICATIONS CONCENTRATION
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT
The Computer Applications concentration prepares students for posi-
tions as entry-level users of current computer applications includ-
ing word processing, spreadsheets and databases. For the degree,
students must fulfill the following major requirements with grades
of “C” or better, complete a minimum of 60 degree-applicable
semester units (12 of which must be completed at Sierra College)
with a grade point average of at least 2.0 and complete one of the
following three general education patterns:
- Associate Degree Requirements (see pages 44-45);
- California State University General Education Breadth pattern (see
  pages 50-51); or
- Intersegmental General Education Transfer Curriculum (IGETC) (see
  pages 52-53).
A certificate is designed to provide career technical skills; it is not
equivalent to an associate degree.

REQUIRED COURSES UNITS
CIS 5 Computer Keyboarding and Word Processing Basics OR 0-3
CIS 20 Keyboarding Review and Skill Building OR
verified equivalent
CIS 35 Computer Skills for Success in an Online Course ........ 1-3
CIS 50 Applying Computer Software .......................................... 3
CIS 70 Word Processing-Beyond the Basics .................................. 3
CIS 80 Spreadsheets in a Business Environment ......................... 3
CIS 100 Software for Dynamic Presentations ............................... 3

PLUS 5-6 ADDITIONAL UNITS FROM THE FOLLOWING:
BUS 102 Business Communications ............................................ 3
BUS 116 Customer Service Skills .................................................. 3
CIS 30 Fundamental Computer Concepts and Applications .......... 3
CIS 62 Business Information Systems ............................................ 3
CIS 67 Foundations for Creating Web Pages ................................. 3
CIS 90 Database Management ..................................................... 3
CIS 95 Internship in Computer Information Systems ....................... 5-4
CIS 105 Microsoft Outlook-Managing Information .......................... 3
CIS 115 Software Configuration and Troubleshooting ................... 3
CIS 120 Creating Business Graphics with Microsoft Publisher ... 3
CIS 127 Creating Web Sites .......................................................... 3
CIS 137 Managing a Successful Web Project ................................. 3
TOTAL UNITS REQUIRED: 18-24

COMPUTER INFORMATION SYSTEMS—
NETWORKING CONCENTRATION
A.A OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT
(FORMERLY COMPUTER SERVICE TECHNOLOGY-
NETWORKING CONCENTRATION)
Successful completion of the curriculum in the Networking concen-
tration prepares students for positions as network administrators
and other network personnel. Many of the courses also help prepare
students for the Microsoft Certification exams needed for achieving
MCSA, MCSE and MCDBA. For the degree, students must fulfill the
following major requirements with grades of “C” or better, complete
a minimum of 60 degree-applicable semester units (12 of which
must be completed at Sierra College) with a grade point average of
at least 2.0 and complete one of the following three general educa-
tion patterns:
- Associate Degree Requirements (see pages 44-45);
- California State University General Education Breadth pattern (see
  pages 50-51); or
- Intersegmental General Education Transfer Curriculum (IGETC) (see
  pages 52-53).
A certificate is designed to provide career technical skills; it is not
equivalent to an associate degree.

REQUIRED COURSES UNITS
BUS 102 Business Communications OR 
ENGL 12 Writing in the Workplace ............................................. 3
CIS 65 Networking Fundamentals ................................................. 3
CIS 141 Installing, Configuring and Administering 
Microsoft Client OS ............................................................... 3
CIS 142 Installing, Configuring and Administering 
Secure Windows Server ......................................................... 3
CSCI 50 Introduction to Unix/Linux ............................................. 3

PLUS 9 ADDITIONAL UNITS FROM THE FOLLOWING:
CIS 26 Preparation for A+ Certification ......................................... 3
CIS 62 Business Information Systems ............................................ 3
CIS 88 Computer Forensics (also ADMJ 88) ................................. 3
CIS 90 Database Management ..................................................... 3
CIS 95 Internship in Computer Information Systems ....................... 5-4
CIS 115 Software Configuration and Troubleshooting ................... 3
CIS 135 Project Management Concepts ........................................ 3
CIS 136 Project Management Software ........................................ 3
CIS 143 Managing a Windows Network Environment .................... 3
CIS 147 Internet and Intranet Security ......................................... 3
CIS 149 Database Administration in a Client/ 
Server Environment ............................................................... 3
CSCI 52 Introduction to SQL ....................................................... 3
TOTAL UNITS REQUIRED: 24
### Virtual Office Professional

Successful completion of the Virtual Office Professional concentration prepares students for starting virtual office businesses, addressing issues of creating, marketing and managing virtual offices. In addition, students are prepared to assume positions in businesses and industries that utilize administrative support, including executive assistants and office support specialists. Topics include time management, workplace customization, technology evaluation and purchasing, communication through the use of advanced technologies and business ethics. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

### Virtual Office Professional—Administrative Concentration

#### A.A. or A.S. Degree and/or Certificate of Achievement

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 102 Business Communications OR</td>
<td></td>
</tr>
<tr>
<td>ENGL 12 Writing in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>CIS 52 Creating a Virtual Office (also BUS 52)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 53 Marketing a Virtual Office (also BUS 53)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 54 Managing a Virtual Office (also BUS 54)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 70 Word Processing-Beyond the Basics</td>
<td>3</td>
</tr>
<tr>
<td>CIS 95 Internship in Computer Information Systems OR</td>
<td></td>
</tr>
<tr>
<td>BUS 95 Internship in Business</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Plus 9 Additional Units from the Following:**

- BUS 8 Computerized Accounting for Windows
- BUS 55 International Business Practices
- BUS 85 Introduction to Oral Communication
- BUS 116 Customer Service Skills
- BUS 122 Marketing in the Digital Age
- CIS 62 Business Information Systems
- CIS 67 Foundations for Creating Web Pages
- CIS 80 Spreadsheets in a Business Environment
- CIS 90 Database Management
- CIS 100 Software for Dynamic Presentations
- CIS 105 Microsoft Outlook-Managing Information
- CIS 120 Creating Business Graphics with Microsoft Publisher
- CIS 127 Creating Web Sites
- CIS 135 Project Management Concepts
- CIS 136 Project Management Software
- CIS 137 Managing a Successful Web Project

**Total Units Required:** 28-30

### Virtual Office Professional—Technical Support Concentration

#### A.A. or A.S. Degree and/or Certificate of Achievement

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 52 Creating a Virtual Office (also BUS 52)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 54 Managing a Virtual Office (also BUS 54)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 65 Networking Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>CIS 95 Internship in Computer Information Systems OR</td>
<td></td>
</tr>
<tr>
<td>BUS 95 Internship in Business</td>
<td>1-3</td>
</tr>
<tr>
<td>CIS 115 Software Configuration and Troubleshooting</td>
<td>3</td>
</tr>
<tr>
<td>CIS 141 Installing, Configuring and Administering Microsoft Client OS</td>
<td>3</td>
</tr>
<tr>
<td>CIS 142 Installing, Configuring and Administering a Secure Windows Server</td>
<td>3</td>
</tr>
</tbody>
</table>

**Plus 9 Additional Units from the Following:**

- BUS B Accounting and Finance for the Small Business Owner
- BUS 55 International Business Practices
- BUS 102 Business Communications
- BUS 116 Customer Service Skills
- CIS 53 Marketing a Virtual Office (also BUS 53)
- CIS 80 Spreadsheets in a Business Environment
- CIS 90 Database Management
- CIS 105 Microsoft Outlook-Managing Information
- CIS 135 Project Management Concepts
- CIS 136 Project Management Software
- CIS 143 Managing a Windows Network Environment
- CIS 144 Supporting a Network Infrastructure
- CIS 145 Implementing and Administering Directory Services
- CIS 146 Wireless Networking and Security
- CIS 160 Home Technology Integration
- MECH 25 Personal Computer Configuration and Repair

**Total Units Required:** 28-30

### Virtual Office Professional—Web Management Concentration

#### A.A. or A.S. Degree and/or Certificate of Achievement

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 52 Creating a Virtual Office (also BUS 52)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 53 Marketing a Virtual Office (also BUS 53)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 54 Managing a Virtual Office (also BUS 54)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 67 Foundations for Creating Web Pages</td>
<td>3</td>
</tr>
<tr>
<td>CIS 95 Internship in Computer Information Systems OR</td>
<td></td>
</tr>
<tr>
<td>BUS 95 Internship in Business</td>
<td>1-3</td>
</tr>
<tr>
<td>CIS 127 Creating Web Sites</td>
<td>3</td>
</tr>
<tr>
<td>CIS 137 Managing a Successful Web Project</td>
<td>3</td>
</tr>
</tbody>
</table>

**Plus 9 Additional Units from the Following:**

- AAD 60 Graphic Design: Principles and Process
- AAD 61 Graphic Design II: Digital Design and Production
- AAD 66 Business Practices for the Applied Arts
- AAD 85 Introduction to Web Design

**Total Units Required:** 28-30

It is recommended that the sequence of the three core courses (BUS/CIS 52, 53, 54) be taken in order. Optional courses may be taken in any order.

---

**Virtual Office Professional—Technical Support Concentration**

A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**Required Courses**

- CIS 52 Creating a Virtual Office (also BUS 52)
- CIS 54 Managing a Virtual Office (also BUS 54)
- CIS 65 Networking Fundamentals
- CIS 95 Internship in Computer Information Systems OR
- BUS 95 Internship in Business
- CIS 115 Software Configuration and Troubleshooting
- CIS 141 Installing, Configuring and Administering Microsoft Client OS
- CIS 142 Installing, Configuring and Administering a Secure Windows Server

**Plus 9 Additional Units from the Following:**

- BUS B Accounting and Finance for the Small Business Owner
- BUS 55 International Business Practices
- BUS 102 Business Communications
- BUS 116 Customer Service Skills
- CIS 53 Marketing a Virtual Office (also BUS 53)
- CIS 80 Spreadsheets in a Business Environment
- CIS 90 Database Management
- CIS 105 Microsoft Outlook-Managing Information
- CIS 135 Project Management Concepts
- CIS 136 Project Management Software
- CIS 143 Managing a Windows Network Environment
- CIS 144 Supporting a Network Infrastructure
- CIS 145 Implementing and Administering Directory Services
- CIS 146 Wireless Networking and Security
- CIS 160 Home Technology Integration
- MECH 25 Personal Computer Configuration and Repair

**Total Units Required:** 28-30

**Virtual Office Professional—Web Management Concentration**

A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**Required Courses**

- CIS 52 Creating a Virtual Office (also BUS 52)
- CIS 53 Marketing a Virtual Office (also BUS 53)
- CIS 54 Managing a Virtual Office (also BUS 54)
- CIS 67 Foundations for Creating Web Pages
- CIS 95 Internship in Computer Information Systems OR
- BUS 95 Internship in Business
- CIS 127 Creating Web Sites
- CIS 137 Managing a Successful Web Project

**Plus 9 Additional Units from the Following:**

- AAD 60 Graphic Design: Principles and Process
- AAD 61 Graphic Design II: Digital Design and Production
- AAD 66 Business Practices for the Applied Arts
- AAD 85 Introduction to Web Design

**Total Units Required:** 28-30
### Computer Information Systems Courses

**BUS B Accounting and Finance for the Small Business Owner** .......................... 3  
**BUS 55 International Business Practices** ................................................. 3  
**BUS 85 Introduction to Oral Communication** ................................. 3  
**BUS 102 Business Communications** ...................................................... 3  
**BUS 116 Customer Service Skills** ......................................................... 3  
**BUS 122 Marketing in the Digital Age** ...................................................... 3  
**BUS 140 Small Business Management** .................................................... 3  
**CIS 50 Applying Computer Software** ....................................................... 3  
**CIS 70 Word Processing-Beyond the Basics** ............................................ 3  
**CIS 90 Database Management** ............................................................... 3  
**CIS 100 Software for Dynamic Presentations** ........................................ 3  
**CIS 105 Microsoft Outlook-Managing Information** ............................... 3  
**CIS 120 Creating Business Graphics with Microsoft Publisher** ............ 3  
**CIS 135 Project Management Concepts** .................................................. 3  
**CIS 137 Managing a Successful Web Project** ........................................... 3  
**CIS 140 Small Business Management** .................................................... 3  
**CIS 150 Project Management Software** .................................................. 3  
**CIS 160 Computer Skills for Success in an Online Course** ................... 1-3  
**CIS 165 Internship in Computer Information Systems** .......................... 3  
**CIS 200 Preparing for the Workplace** ..................................................... 3  
**CIS 205 MS Office for the Workplace** .................................................... 3  
**CIS 300 Industry Certification** ............................................................... 3  
**CIS 350 Internship in Computer Information Systems** .......................... 3  
**CIS 355 Internship in Web Site Production** ............................................ 3  
**CIS 370 Internship in Business Management** ......................................... 3  
**CIS 375 Internship in Computer Information Systems** .......................... 3  
**CIS 400 Preparing for a Career in the Workplace** ................................... 3  
**CIS 405 Internship in Computer Information Systems** .......................... 3  
**CIS 410 Professional Internship in Computer Information Systems** ....... 3  
**CIS 415 Internship in Computer Information Systems** .......................... 3  
**CIS 500 Internship in Computer Information Systems** .......................... 3  
**CIS 510 Internship in Computer Information Systems** .......................... 3  
**CIS 515 Internship in Computer Information Systems** .......................... 3  
**CIS 520 Internship in Computer Information Systems** .......................... 3  
**CIS 530 Internship in Computer Information Systems** .......................... 3  
**CIS 540 Internship in Computer Information Systems** .......................... 3  
**CIS 550 Internship in Computer Information Systems** .......................... 3  
**CIS 560 Internship in Computer Information Systems** .......................... 3  
**CIS 570 Internship in Computer Information Systems** .......................... 3  
**CIS 580 Internship in Computer Information Systems** .......................... 3  
**CIS 590 Internship in Computer Information Systems** .......................... 3  
**CIS 600 Internship in Computer Information Systems** .......................... 3  
**CIS 610 Internship in Computer Information Systems** .......................... 3  
**CIS 620 Internship in Computer Information Systems** .......................... 3  
**CIS 630 Internship in Computer Information Systems** .......................... 3  
**CIS 640 Internship in Computer Information Systems** .......................... 3  
**CIS 650 Internship in Computer Information Systems** .......................... 3  
**CIS 660 Internship in Computer Information Systems** .......................... 3  
**CIS 670 Internship in Computer Information Systems** .......................... 3  
**CIS 680 Internship in Computer Information Systems** .......................... 3  
**CIS 690 Internship in Computer Information Systems** .......................... 3  
**CIS 700 Internship in Computer Information Systems** .......................... 3  
**CIS 710 Internship in Computer Information Systems** .......................... 3  
**CIS 720 Internship in Computer Information Systems** .......................... 3  
**CIS 730 Internship in Computer Information Systems** .......................... 3  
**CIS 740 Internship in Computer Information Systems** .......................... 3  
**CIS 750 Internship in Computer Information Systems** .......................... 3  
**CIS 760 Internship in Computer Information Systems** .......................... 3  
**CIS 770 Internship in Computer Information Systems** .......................... 3  
**CIS 780 Internship in Computer Information Systems** .......................... 3  
**CIS 790 Internship in Computer Information Systems** .......................... 3  

---

**Skills Certificate**

**Computer Basics Skills Certificate**

Equips students with the essential Windows personal computer skills required for school or business. Helps prepare students for careers or fields of study that require computer use, such as data entry, clerical support, receptionist, or customer service and may serve as a foundation for acquiring advanced or specialized computer skills. Appropriate for students seeking retraining. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 116 Customer Service Skills</td>
<td>3</td>
</tr>
<tr>
<td>CIS 5 Computer Keyboarding and Word Processing Basics OR</td>
<td>3</td>
</tr>
<tr>
<td>CIS 20 Keyboarding Review and Skill Building</td>
<td>3</td>
</tr>
<tr>
<td>CIS 30 Fundamental Computer Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 35 Computer Skills for Success in an Online Course</td>
<td>1-3</td>
</tr>
<tr>
<td>CIS 50 Applying Computer Software</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Units Required: 13-15**

---

**Microsoft Office Specialist Skills Certificate**

(Formerly Microsoft Office Specialist—Expert Level)

 Helps students prepare for Expert Level Microsoft Office Specialist industry certification exams in Word, Excel, Access, PowerPoint and Outlook. Students will increase technical proficiency and expertise, overall comprehension of Office applications, ability to use advanced features and ability to integrate the Office applications with other software applications. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 70 Word Processing-Beyond the Basics</td>
<td>3</td>
</tr>
<tr>
<td>CIS 80 Spreadsheets in a Business Environment</td>
<td>3</td>
</tr>
<tr>
<td>CIS 90 Database Management</td>
<td>3</td>
</tr>
<tr>
<td>CIS 100 Software for Dynamic Presentations</td>
<td>3</td>
</tr>
<tr>
<td>CIS 105 Microsoft Outlook-Managing Information</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Units Required: 15**

---

**Web Site Production Skills Certificate**

Helps prepare students for positions as a Web site producer or production assistant. This certificate features practical business experience in the form of an internship. Students will learn to assist in the production and management of new Web projects and site re-designs. Strategize small business Web projects from initial idea through planning, design, implementation, promotion and maintenance. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 90 Interactivity and Animation for the Web</td>
<td>4</td>
</tr>
<tr>
<td>AAD 95 Internship in Applied Art and Design OR</td>
<td>3</td>
</tr>
<tr>
<td>CIS 95 Internship in Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS 67 Foundations for Creating Web Pages</td>
<td>3</td>
</tr>
<tr>
<td>CIS 127 Creating Web Sites</td>
<td>3</td>
</tr>
<tr>
<td>CIS 137 Managing a Successful Web Project</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Units Required: 16**

---

**Computer Information Systems Courses**

---

**CIS 5 Computer Keyboarding and Word Processing Basics**

*Units: 3*

*Advisory: Eligibility for ESL 20L and 20R*

*Hours: 72 (54 lecture, 18 laboratory)*

Introduction to touch-typing techniques. Development of accuracy and speed. Basic computer concepts and production of standard business documents using word processing software. Prepares students for CIS 20 or any course requiring typed documents. Not recommended for students with one year of high school keyboarding or word processing. (CSU)
CIS 20 KEYBOARDING REVIEW AND SKILL BUILDING  
Units: 3  
Advisory: Eligibility for ESL 540L and 540R; completion of CIS 5, ability to type at least 30 wpm, or one year high school computer keyboarding or equivalent recommended  
Hours: 72 (54 lecture, 18 laboratory)  
Computer keyboarding review using proper techniques. Setting performance goals with emphasis on accuracy and speed. Developing enhanced proofreading skills. Utilizing word processing software to create and format more complex business documents. (CSU)

CIS 26 PREPARATION FOR A+ CERTIFICATION  
Formerly known as CST 30  
Units: 3  
Advisory: Completion of MECH 25 with grade of “C” or better recommended  
Hours: 72 (54 lecture, 18 laboratory)  
Focuses on the tools and techniques required to meet the objectives of CompTIA's A+ certification. Includes troubleshooting and repairing personal computers and associated peripheral devices, installation, configuration, upgrading, diagnosing, repair, safety and preventive maintenance. (not transferable)

CIS 28 INDEPENDENT STUDY  
Units: 1-3  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

CIS 30 FUNDAMENTAL COMPUTER CONCEPTS AND APPLICATIONS  
Units: 3  
Hours: 72 (54 lecture, 18 laboratory)  
Hands-on introduction to personal computer applications for students with little prior computer experience. Includes basics of file management, word processing, spreadsheets and data entry. Introduces students to Windows operating system, Internet, online course materials and web-based email. (CSU)

CIS 30L FUNDAMENTAL COMPUTER CONCEPTS AND APPLICATIONS LABORATORY  
Units: 0.5  
Corequisite: Concurrent enrollment in CIS 30  
Hours: 36 laboratory  
Optional problem solving course to accompany CIS 30. For students with little prior computer experience. Basics of file management, word processing, spreadsheets and data entry, using Windows operating system, Internet and web-based email. (pass/no pass grading) (not transferable)

CIS 35 COMPUTER SKILLS FOR SUCCESS IN AN ONLINE COURSE  
Units: 1-3  
Advisory: Completion of CIS 30 with a grade of “C” or better  
Hours: 18 lecture hours per unit  
Hands-on introduction to specialized computer and Internet skills needed for success in an online course. Topics include selected elements of Windows file management, Internet, Web Browser, Email, Word, Online learning system (such as Blackboard). (CSU)

CIS 50 APPLYING COMPUTER SOFTWARE  
Units: 3  
Advisory: Completion of CIS 30 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
An overview of the use and relevancy of common office application software for word processing, spreadsheets, charting data, databases and presentations. Using current business operating system software and online tools; transmitting files via the Internet. Introduction to common computer hardware and software system concepts; impact of computers on society, ethics, networks and security. (CSU)

CIS 52 CREATING A VIRTUAL OFFICE  
Also known as BUS 52  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Introduction to the Virtual Office Profession. Explores issues to be addressed when creating a virtual office. Topics include managing time, customizing workplace environment, evaluating and buying technology, communicating with technology and business ethics. (not transferable)

CIS 53 MARKETING A VIRTUAL OFFICE  
Also known as BUS 53  
Units: 3  
Advisory: Completion of BUS 52/CIS 52 and CIS 70 with grades of “C” or better  
Hours: 54 lecture  
Introduction to virtual marketing techniques and skills needed to obtain virtual employment positions and clients. Students identify and evaluate various employment marketing techniques such as networking, conducting virtual interviews, joining professional organizations, developing flyers and brochures, developing a professional Internet web site and using numerous Web-based resources to market skills and services. (not transferable)
CIS 54 MANAGING A VIRTUAL OFFICE
Also known as BUS 54
Units: 3
Advisory: Completion of CIS 50, BUS 52/CIS 52 and BUS 53/CIS 53 with grades of “C” or better
Hours: 54 lecture
Examines specialized professional administrative concepts and documents used to manage information in the virtual workplace. Organizational concepts, decision making, effective business relationships, time and stress management, business plans, ethics, customer service, virtual business technology and team work skills are emphasized. (not transferable)

CIS 62 BUSINESS INFORMATION SYSTEMS
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 72 (54 lecture, 18 laboratory)
Examination of information systems and their role in business. Focus on information systems, database management systems, networking, e-commerce, ethics and security, computer systems hardware and software components. Application of these concepts and methods through hands-on projects developing computer-based solutions to business problems. (C-ID ITIS 120) (CSU)

CIS 65 NETWORKING FUNDAMENTALS
Formerly known as CST 40
Units: 3
Advisory: Completion of CSCI 10 or CIS 50 with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Installation and administration of Local Area Networks (LANs) and Wide Area Networks (WANs). Topics include architectures, topologies, protocols, network operating systems, sharing network devices and software, network backup/recovery, diagnostics, internetworking and virtualization. Laboratory assignments focus on building and configuring LANs using the most recent versions of Microsoft’s server and client operating systems and other vendor products. (CSU)

CIS 67 FOUNDATIONS FOR CREATING WEB PAGES
Units: 3
Advisory: Completion of CIS 37 and 50 or equivalent
Hours: 72 (54 lecture, 18 laboratory)
Introduction to building Web pages using HTML and basic Web-authoring software; technical concepts behind Web pages: how the Internet works, connection technologies, Web search techniques, evaluating Web pages, file transfer, file compression, browser tips and tricks, mailing lists, Internet security. Prepares for CIS 127 and 137. (CSU)

CIS 70 WORD PROCESSING-BEYOND THE BASICS
Units: 3
Advisory: Keyboarding skill of 25 w.p.m. and completion of CIS 50 or equivalent
Hours: 72 (54 lecture, 18 laboratory)
Includes styles and outlines, generating form letters, mailing labels and envelopes, working with master documents, mapping features, indexes and tables of content, creating a report using wizards and templates, applying macros, integrating software, creating web pages and online forms. (CSU)

CIS 80 SPREADSHEETS IN A BUSINESS ENVIRONMENT
Units: 3
Advisory: Completion of CIS 50 or equivalent recommended
Hours: 72 (54 lecture, 18 laboratory)
Design and use of “what-if” analysis, static and dynamic web pages, financial functions, data and lookup tables, amortization schedules and templates. Includes working with multiple worksheets and workbooks, analyzing worksheet results, sorting and querying a worksheet database, using macros and integrating software. (CSU)

CIS 87 BEGINNING ARC GIS SOFTWARE
Also known as ESCI 91A and GEOG 91A
Units: 1
Hours: 18 lecture
Introduction to Geographic Information Systems (GIS) mapping software used to manage, analyze and display spatial information. Create reports and map layouts, query geographic databases and solve spatial problems. Emphasis on using GIS software for practical applications in the fields of natural resource management, disaster mapping, cartographic design, urban planning, business and other related fields. (CSU)

CIS 88 COMPUTER FORENSICS
Also known as ADMJ 88
Units: 3
Advisory: Completion of ADMJ 54
Hours: 72 (54 lecture, 18 laboratory)
Introduces tools and techniques of preserving and investigating digital evidence in a systematic and scientifically reliable manner using modern computer forensic software applications. Students introduced to the interpretation and analysis of recovered data for the purpose of collecting legal evidence. Exposure to data in an array of formats and applications from several computer types and operating systems as well as deleted, encrypted and damaged information. Evidence reporting practices also introduced. (CSU)
CIS 90 DATABASE MANAGEMENT  
Units: 3  
Advisory: Completion of CIS 50 with grade of “C” or better or equivalent recommended  
Hours: 72 (54 lecture, 18 laboratory)  
Developing database systems using the current version of Microsoft Access. Includes designing database structures: tables, queries, forms, reports and more. Also includes integrating with the Web, Excel and other programs. Emphasis on hands-on learning. (CSU)

CIS 95 INTERNSHIP IN COMPUTER INFORMATION SYSTEMS  
Units: 0.5-4  
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

CIS 100 SOFTWARE FOR DYNAMIC PRESENTATIONS  
Units: 3  
Advisory: Completion of CIS 50 or equivalent recommended  
Hours: 72 (54 lecture, 18 laboratory)  
Integration of text, graphics, animation, music, movies and other software applications within a realistic business context. Customizing and executing quality presentations using basic through advanced design styles and techniques. (CSU)

CIS 105 MICROSOFT OUTLOOK-MANAGING INFORMATION  
Units: 3  
Advisory: Completion of CIS 50 or equivalent recommended  
Hours: 72 (54 lecture, 18 laboratory)  
Includes managing email folders; sending, receiving, forwarding email messages; using “netiquette” and distribution lists; scheduling appointments, meetings, events; creating contacts, address books and calendars; tracking tasks; setting reminders; sharing information and publishing schedules via the web. (not transferable)

CIS 115 SOFTWARE CONFIGURATION AND TROUBLESHOOTING  
Units: 3  
Advisory: Completion of CIS 50 and CIS 65 or equivalent recommended  
Hours: 72 (54 lecture, 18 laboratory)  
Basic skills in software troubleshooting and configuration, including configuring the operating system, setting a computer for different printers, diagnosing hardware and software problems and providing interactive instructions for the solution. (CSU)

CIS 120 CREATING BUSINESS GRAPHICS WITH MICROSOFT PUBLISHER  
Units: 3  
Advisory: Completion of CIS 50 or CIS 70 or equivalent recommended  
Hours: 72 (54 lecture, 18 laboratory)  
Designed to assist the office professional utilize Microsoft Publisher to create high-quality desktop publishing documents. Learning activities include preparation of a flyer, newsletter, logo, CD liner, business card, tri-fold brochure, calendar, catalog, event program, coupon and certificate. (CSU)

CIS 127 CREATING WEB SITES  
Units: 3  
Prerequisite: Completion of CIS 50 and CIS 67 or equivalent  
Advisory: Completion of or concurrent enrollment in CIS 137 or equivalent recommended  
Hours: 72 (54 lecture, 18 laboratory)  
Introduction to basic techniques for creating web sites using the industry standard Windows-based software. Fundamentals of planning, coding, publishing and testing documents on a web server. Presenting and evaluating web sites from a business perspective. (CSU)

CIS 135 PROJECT MANAGEMENT CONCEPTS  
Units: 3  
Advisory: Completion of BUS 100 with a grade of “C” or better  
Hours: 54 lecture  
Project management is used in every field in today’s competitive marketplace such as construction, software development, the health care industry and marketing. Concepts include scheduling, budgeting, communications, team building, planning, implementation and completion. Students apply lessons in a project based learning environment. (not transferable)

CIS 136 PROJECT MANAGEMENT SOFTWARE  
Units: 3  
Advisory: Completion of CIS 135 with a grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Explores use of the most recent version of Microsoft Office Project and other project management tools through hands-on exercises and classroom learning experiences. Includes WBS, budgeting and resource allocation. Prepares students to use these software packages in their daily duties as a project manager. (not transferable)
CIS 137 MANAGING A SUCCESSFUL WEB PROJECT
Units: 3
Advisory: Completion with grade of “C” or better, or concurrent enrollment in CIS 67
Hours: 72 (54 lecture, 18 laboratory)
Introduction to the process of managing a successful web project; integrating technology, creativity, business and end-user information. Key issues and techniques, from original idea through implementation of a new or redesigned site including: purpose, usability, user-focus, conceptual design, hosting, domain names, promotion, maintenance. Emphasis on planning for, investing in and building a successful site. (CSU)

CIS 141 INSTALLING, CONFIGURING AND ADMINISTERING MICROSOFT CLIENT OS
Formerly known as CST 45
Units: 3
Advisory: Completion of CIS 65/CSCI 65 or equivalent
Hours: 72 (54 lecture, 18 laboratory)
Setup and support for a desktop operating system using Microsoft’s current Desktop Operating System in a networked environment. Creation of local and domain-level accounts, creation of shared resources, use of network services, remote access, resource management and monitoring and security considerations. (CSU)

CIS 142 INSTALLING, CONFIGURING & ADMINISTERING A SECURE WINDOWS SERVER
Formerly known as CST 50
Units: 3
Prerequisite: Completion of CIS 141 with grade of “C” or better or equivalent
Hours: 72 (54 lecture, 18 laboratory)
Setup, configuration and support of a server operating system in a networked environment. Creation of local and domain-level accounts. Use of network services in a mixed and native mode environment. Remote access, resource management, monitoring and security considerations with a more in-depth look at directory services. Preparation for Microsoft certification examination. (CSU)

CIS 143 MANAGING A WINDOWS NETWORK ENVIRONMENT
Formerly known as CST 56
Units: 3
Prerequisite: Completion of CIS 142 or equivalent
Hours: 72 (54 lecture, 18 laboratory)
Instructs students in the skills needed to perform desktop and server installation and configuration tasks. Network and operating system management tasks in a Microsoft Windows environment including implementation, management and troubleshooting. Preparation for MSCA certification examination. (not transferable)

CIS 144 SUPPORTING A NETWORK INFRASTRUCTURE
Formerly known as CST 55
Units: 3
Prerequisite: Completion of CIS 142 or equivalent
Hours: 72 (54 lecture, 18 laboratory)
Covers issues relating to installation, configuration and management of network infrastructures. DHCP, DNS, RRAS, IIS and other services needed to support a Windows Active Directory environment. Preparation for Microsoft certification examination. (CSU)

CIS 145 IMPLEMENTING AND ADMINISTERING DIRECTORY SERVICES
Formerly known as CST 60
Units: 3
Prerequisite: Completion of CIS 144 or equivalent
Hours: 72 (54 lecture, 18 laboratory)
Implementation and administration of network directory services. Planning and use of Group Policies and tasks required to centrally manage users and computers. Preparation for Microsoft certification examination. (CSU)

CIS 146 WIRELESS NETWORKING AND SECURITY
Formerly known as CST 71
Units: 3
Advisory: CIS 142 or equivalent experience
Hours: 72 (54 lecture, 18 laboratory)
Design, plan, implement, operate and troubleshoot wireless networks. Includes a comprehensive overview of technologies, security and design best practices. Particular emphasis on hands-on skills in wireless LAN setup & troubleshooting, resilient WLAN design, installation and configuration, site surveys and vendor interoperability strategies. (not transferable)

CIS 147 INTERNET AND INTRANET SECURITY
Formerly known as CST 70
Units: 3
Advisory: Completion of CIS 142 with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Knowledge and skills required for Network Administrators and Information Technology Professionals to be aware of security vulnerabilities, to implement security measures, to analyze an existing network environment in consideration of known security threats or risks, to defend against attacks or viruses and to ensure data privacy and integrity. Terminology and procedures for implementation and configuration of security, including access control, authorization, encryption, packet filters, firewalls and Virtual Private Networks (VPNs). Course is mapped to meet the objectives of the CompTIA Security+ certification exam. (not transferable)
CIS 149 DATABASE ADMINISTRATION IN A CLIENT/SERVER ENVIRONMENT  
Formerly known as CST 85  
Units: 3  
Advisory: Completion of CSCI 52, CIS 90 or equivalent  
Hours: 72 (54 lecture, 18 laboratory)  
Installation, configuration, administration and troubleshooting of a client-server database management system. Includes information on security, backup strategies, transaction log management, data mining and more. (not transferable)

CIS 160 HOME TECHNOLOGY INTEGRATION  
Formerly known as CST 41  
Units: 3  
Advisory: Completion of CIS 65/CSCI 65, or CIE 25, or equivalent experience  
Hours: 72 (54 lecture, 18 laboratory)  
Introduction to home technology integration. Home networks and control of electrical sub-systems from the home computer or remotely through a web connection. Hands-on experience installing home technology equipment looking at issues, options and design considerations within the industry. Topics include tools and equipment needs, codes and standards and installation options. (not transferable)

CIS 300 SELECTED TOPICS IN COMPUTER INFORMATION SYSTEMS  
Units: 0.5-4  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU)

CIS 347A LAYOUT EMPHASIS IN CREATING WEB SITES  
Units: 3  
Prerequisite: Completion of CIS 127 and 137  
Hours: 72 (54 lecture, 18 laboratory)  
Applying techniques for creating web sites using the industry standard Windows-based layout software. Emphasis on applying and enhancing web production skills to build more efficiently and to create more effective web sites. Advanced site planning, coding, evaluation and critique of web sites. (CSU)

CIS 400 SELECTED TOPICS IN COMPUTER INFORMATION SYSTEMS  
Units: 0.5-4  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

CIS 421 VIRTUALIZATION CONCEPTS AND TECHNOLOGIES  
Units: 3  
Advisory: Completion of CIS 65 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Knowledge and skills necessary to understand and implement Virtualization Concepts. The core concepts of creating and managing virtual machines, network servers and network design presented. Labs demonstrate benefits associated with virtualization such as fault tolerance and high availability. Successful completion of the class meets the educational requirement for VMware certification. (not transferable)

CIS 601 COMPUTER BASICS  
Formerly known as CIS 1  
Units: 3  
Hours: 72 (54 lecture, 18 laboratory)  
Basic hands-on introduction for new computer users: turning on the computer, operating a mouse, using data storage. Extensive hands-on practice. Includes basic terminology, simple word processing, email and web browsing. (not degree applicable)

COMPUTER INTEGRATED ELECTRONICS  
(See Mechatronics)

(Also see Computer Information Systems and Mechatronics)

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION  
DEAN: Sonja Lolland  
ASSOCIATE DEAN: Darlene Jackson  
DIVISION OFFICE: B 3  
FACULTY: B. Brown, B. Cole, M. Dobeck  
LIAISON COUNSELORS: N. Martinis, Reyes Ortega

The Computer Science curriculum prepares students for careers in computer programming and for transfer to state colleges and universities for further study in computer sciences or information science. The curriculum offers students both the theory and practical experience for entry level positions of employment. There are computer courses for non-science majors as well as science majors. In all cases, students should consult with a counselor for specific transfer requirements.

The Computer Science curriculum meets the Data Processing Management Association mode curriculum for undergraduate computer information systems education.
### COMPUTER SCIENCE—COMPUTER SCIENCE CONCENTRATION

#### A.A. OR A.S. DEGREE

The curriculum in Computer Science concentration prepares students for transfer to many university Computer Science degree programs. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 12</td>
<td>Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 13</td>
<td>Intermediate Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 26</td>
<td>Discrete Structures for Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 39</td>
<td>Introduction to Computer Architecture and Assembly Language</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 50</td>
<td>Introduction to Unix/Linux</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 62</td>
<td>Web Programming I</td>
<td>3</td>
</tr>
</tbody>
</table>

#### PLUS 9 ADDITIONAL UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 21</td>
<td>The Game Development Process</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 27</td>
<td>Visual Basic .NET Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 46</td>
<td>System Programming with C</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 52</td>
<td>Introduction to SQL</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 54</td>
<td>Visual Basic .NET Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 55</td>
<td>ASP.NET Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 63</td>
<td>Web Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 66</td>
<td>Object-Oriented Programming Using C++</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 76A</td>
<td>Game Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 79</td>
<td>Mobile Device Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

#### TOTAL UNITS REQUIRED: 27

### COMPUTER SCIENCE—MANAGEMENT INFORMATION SYSTEMS CONCENTRATION

#### A.A. OR A.S. DEGREE

The curriculum in Management Information Systems has special emphasis on development, installation and maintenance of business software applications. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 10</td>
<td>Introduction to Computing</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 27</td>
<td>Visual Basic .NET Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 50</td>
<td>Introduction to Unix/Linux</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 52</td>
<td>Introduction to SQL</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 54</td>
<td>Visual Basic .NET Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 56</td>
<td>Web Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CIS 65</td>
<td>Networking Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>

#### PLUS 6 ADDITIONAL UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 12</td>
<td>Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 26</td>
<td>Discrete Structures for Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 39</td>
<td>Introduction to Computer Architecture and Assembly Language</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 46</td>
<td>System Programming with C</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 55</td>
<td>ASP.NET Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 59</td>
<td>Web Programming with PHP</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 59R</td>
<td>Ruby on Rails</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 63</td>
<td>Web Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 79</td>
<td>Mobile Device Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

#### TOTAL UNITS REQUIRED: 27

### COMPUTER SCIENCE—EMBEDDED SYSTEMS CONCENTRATION

#### CERTIFICATE OF ACHIEVEMENT

Successful completion of the curriculum in Embedded Systems concentration prepares students for entry-level programming positions in companies which manufacture products that have embedded microprocessors. A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 12</td>
<td>Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 26</td>
<td>Discrete Structures for Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 39</td>
<td>Introduction to Computer Architecture and Assembly Language</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 46</td>
<td>System Programming with C</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 59</td>
<td>Mobile Device Programming</td>
<td>4</td>
</tr>
<tr>
<td>MECH 10</td>
<td>Fundamentals of Electronics</td>
<td>4</td>
</tr>
</tbody>
</table>

#### TOTAL UNITS REQUIRED: 20
COMPUTER SCIENCE—WEB PROGRAMMING CONCENTRATION
CERTIFICATE OF ACHIEVEMENT

Successful completion of the curriculum in Web Programming Concentration prepares students for careers in Web design, access and implementation and for writing programs that can be run from the Internet. A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 55 ASP.NET Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 59P Web Programming with PHP</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 59R Ruby on Rails</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 62 Web Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 63 Web Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 79 Mobile Device Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 19

COMPUTER SCIENCE COURSES »

CSCI 10 INTRODUCTION TO COMPUTING

Units: 3
Advisory: Completion of MATH A with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Survey of computer science technologies and methods. Introduction to computer hardware and software, structured programming, operating system concepts, communications and social impacts of computer technology. Explore current and emerging topics such as robotics, computer security and artificial intelligence. (CSU, UC)

CSCI 12 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING

Units: 3
Prerequisite: Completion of CSCI 10 with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Introductory programming course emphasizing simple algorithms, sequence, selection, repetition, modularity, arrays, abstract data types, object-oriented design, classes, member functions, encapsulation and basic file input/output. (CSU, UC)

CSCI 13 INTERMEDIATE OBJECT-ORIENTED PROGRAMMING

Units: 3
Prerequisite: Completion of CSCI 12 with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Intermediate programming course emphasizing object-oriented program design and implementation. Applying techniques for systematic problem analysis, program specification, design, coding testing, debugging and documentation of larger programs. Advanced language features: strings, text and non-text files, references. Managing program complexity using abstraction. Abstract data types: simple lists, stacks and queues. Introduction to algorithm analysis and Big-O notation. Recursive algorithms. (CSU, UC)

CSCI 20 THE GAME DEVELOPMENT PROCESS

Units: 3
Advisory: Completion of MATH D with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Introduction to the history, technology, ethics and design of computer games. A generally accessible course about the process of creating computer games from concept to implementation, including documentation, storyboards, character design, gameplay, animation and marketing. Students use these concepts to create a complete computer game of their own design. Programming experience not required. (CSU, UC)

CSCI 26 DISCRETE STRUCTURES FOR COMPUTER SCIENCE

Units: 3
Prerequisite: Completion of CSCI 12 and MATH 12 with grades of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Introduction to the essential discrete structures used in Computer Science, with emphasis on their applications. Includes elementary formal logic and set theory, elementary combinatorics, recursive programming and algorithm analysis, Boolean algebra, digital logic, combinatorial circuits, graph theory, circuit design and minimization and computer arithmetic. (CSU, UC)

CSCI 27 VISUAL BASIC .NET PROGRAMMING I

Units: 3
Prerequisite: Completion of CSCI 10 with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Introduction to methods and techniques of Visual Basic .NET programming. Includes coverage of user interface design, variables, decisions, menus, functions, object-oriented programming, looping, arrays and printing. Designed to bring students up to the necessary skill and knowledge level for an intermediate-level programming course. (CSU)

CSCI 28 INDEPENDENT STUDY

Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

CSCI 39 INTRODUCTION TO COMPUTER ARCHITECTURE AND ASSEMBLY LANGUAGE

Units: 3
Prerequisite: Completion of CSCI 10 with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Assembly language programming techniques and introductory computer architecture concepts. Topics include addressing modes; pseudo operations; stack processing; subroutine linkage; arithmetic and logical operations; input and output; digital logic. Programs are designed, coded, tested and debugged. (CSU, UC)
CSCI 46 SYSTEM PROGRAMMING WITH C  
Units: 3  
Prerequisite: Completion of CSCI 12 with grade of “C” or better  
Advisory: Completion of CSCI 50 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Introduction to the C language and system programming on a Unix-like operating system. Topics include the standard C library, memory allocation, file I/O, permissions, system calls and process management. Development in a Unix environment will cover editors, shell scripting, makefiles, source code control and networking. (CSU, UC)

CSCI 50 INTRODUCTION TO UNIX/LINUX  
Units: 3  
Prerequisite: Completion of CSCI 10 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
An introduction to the Unix and Linux operating systems with an emphasis on system programming. Topics include the filesystem, permissions, regular expressions, processes, networking, basic system administration and shell scripting. Extensive hands-on experience using the command line interface. (CSU, UC)

CSCI 52 INTRODUCTION TO SQL  
Units: 3  
Prerequisite: Completion of CSCI 10 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Survey of SQL (Structured Query Language). Includes database models, database design, table and view definition, transaction and data manipulation, queries and reports, data integrity, stored procedures, triggers, recovery and security. Hands-on experience using a popular SQL database. (CSU)

CSCI 54 VISUAL BASIC .NET PROGRAMMING II  
Units: 3  
Prerequisite: Completion of CSCI 27 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Intermediate Visual Basic .NET programming. Includes coverage of multilayer applications, database applications, databases using related tables, database updates, using Web forms, Web forms database & updates, XML Web services and writing database reports using Crystal Reports. (CSU, UC)

CSCI 55 ASP.NET PROGRAMMING  
Units: 3  
Prerequisite: Completion of CSCI 27 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Intermediate Web programming course. Combines ASP (Active Server Pages) and Visual Basic .NET programming to create dynamic data-driven Web applications. Covers Web programming concepts including advanced topics of ADO and implementing security in ASP. (CSU)

CSCI 59P WEB PROGRAMMING WITH PHP  
Formerly known as CSCI 303  
Units: 3  
Prerequisite: Completion of CSCI 12 or CSCI 27 or equivalent  
Advisory: Completion of CSCI 62 or equivalent experience  
Hours: 72 (54 lecture, 18 laboratory)  
Create dynamic, session-oriented, data-driven web sites using the PHP scripting language. Covers processing fill-out forms, database backends, session management, authentication and searching. (CSU)

CSCI 59R RUBY ON RAILS  
Units: 3  
Prerequisite: Completion of CSCI 12 or CSCI 27 with grade of “C” or better  
Advisory: Completion of CSCI 62 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Introduction to the Ruby object-oriented programming language and Rails web application framework. Using Ruby on Rails, web applications with tight database integration can be developed and deployed with speed and agility. Covers the fundamentals of programming in Ruby as it pertains to using Rails. Other topics include: the Rails model/viewer/controller architecture, SQL database backends, using layouts, scaffolds and session management. (not transferable)

CSCI 62 WEB PROGRAMMING I  
Units: 3  
Prerequisite: Completion of CSCI 10 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Introduction to methods and techniques of Web programming. Includes coverage of HyperText Markup Language (HTML), Cascading Style Sheets (CSS) and Extensible HyperText Markup Language (XHTML). Designed to bring students up to the necessary skill and knowledge level for an intermediate Web programming course. (CSU)

CSCI 63 WEB PROGRAMMING II  
Units: 3  
Prerequisite: Completion of CSCI 62 with grade of “C” or better  
Hours: 72 (54 lecture, 18 laboratory)  
Intermediate Web programming course. Emphasizes Extensible HyperText Markup Language (XHTML) and JavaScript. Includes: animated Web pages; rollovers, menus, filters and transitions; interactive windows/frames; form validation using regular expressions; shopping carts; and creating a dynamic table of contents. (CSU)

CSCI 66 OBJECT-ORIENTED PROGRAMMING USING C++  
Units: 3  
Prerequisite: Completion of CSCI 12 or CSCI 46 or equivalent  
Hours: 72 (54 lecture, 18 laboratory)  
An introduction to the concepts of object-oriented programming and the application of the C++ language. Extensive programming practice using C++ as the vehicle toward modular, reusable object-oriented code. (CSU, UC)
CSCI 76A GAME PROGRAMMING
Units: 3
Prerequisite: Completion of CSCI 12 with grade of “C” or better
Advisory: Completion with grade of “C” or better or concurrent enrollment in CSCI 13
Hours: 72 (54 lecture, 18 laboratory)
Explore the algorithms, data structure and techniques used to program computer video games. Emphasis on arcade-style video games (new and classic) written in Java. Topics include 2D animation, sprites, interaction, music and sound. Underlying issues include graphical user interface programming, multi-threaded applications, real-time programming, use of sophisticated APIs and societal impacts of computer gaming. (CSU, UC)

CSCI 79 MOBILE DEVICE PROGRAMMING
Formerly known as CSCI 309
Units: 4
Prerequisite: Completion of CSCI 12 with grade of “C” or better
Hours: 108 (54 lecture, 54 laboratory)
Introduction to creating software applications for the iPhone, iPod Touch and iPad devices. Topics include Objective-C, the iPhone SDK, CocoaTouch, core frameworks, model-view-controller patterns and software development using Mac OS X. (CSU)

CSCI 95 INTERNSHIP IN COMPUTER SCIENCE
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

CSCI 300 SELECTED TOPICS IN COMPUTER SCIENCE
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC–with unit limitation)

CSCI 400 SELECTED TOPICS IN COMPUTER SCIENCE
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

CONSTRUCTION TECHNOLOGY

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION
DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
LIAISON COUNSELORS: C. Epting-Davis, D. Quadros

The Construction Technology curriculum is designed to give students broad training not only in a specific trade but in a variety of useful academic subjects. Preparatory training through education is provided in areas of the industry such as contracting, remodeling, finish carpentry and cabinetry making. The program provides foundational training for construction management programs as well as training for entry-level employment in the building industry. Courses include the study of practices, materials and codes related to California Green Technology, “Net Zero Energy” policies and ICF construction.

RESIDENTIAL BUILDING CONSTRUCTION
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

The curriculum in Residential Building Construction prepares students for entry-level positions in areas of the building construction industry, such as carpentry, electrical and plumbing professions and estimating. Credit for up to one and one-half years of the contractor’s examination experience requirement may be granted by the Contractors State License Board for completion of the Residential Building Construction degree. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTR 1 Residential Construction Safety and Machine Operations.</td>
<td>3</td>
</tr>
<tr>
<td>CTR 5 Production Cabinetry (Traditional)</td>
<td>3</td>
</tr>
<tr>
<td>CTR 41 Finish Carpentry</td>
<td>3</td>
</tr>
<tr>
<td>CTR 42 Foundations and Floor Systems</td>
<td>3</td>
</tr>
<tr>
<td>CTR 44 Conventional and Green Framing</td>
<td>3</td>
</tr>
<tr>
<td>CTR 45 Building Industry Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CTR 47 Residential Building Plan and Document Reading</td>
<td>1</td>
</tr>
<tr>
<td>CTR 48 Estimating</td>
<td>3</td>
</tr>
<tr>
<td>CTR 60 Residential House Wiring and Codes</td>
<td>3</td>
</tr>
<tr>
<td>CTR 62 Plumbing Installation and Design</td>
<td>3</td>
</tr>
</tbody>
</table>
PLUS 6 ADDITIONAL UNITS FROM:
CTR 24 Interior and Exterior Finishing ........................................ 3
CTR 37A Advanced Skill and Speed Development—Concrete .... 3
CTR 37B Advanced Skill and Speed Development—Framing ....... 3
CTR 38 Skill and Speed Development-Cabinetry and Furniture .. 3
CTR 52 Residential Building Codes ........................................... 3
DES 20 Architectural Drawing I ................................................. 3
DES 21 Architectural Drawing II ............................................... 3
ESS 30 Beginning Photovoltaic Systems .................................. 4
TOTAL UNITS REQUIRED: 35

CONSTRUCTION TECHNOLOGY
(RESIDENTIAL COURSES) »

CTR 1 RESIDENTIAL CONSTRUCTION SAFETY AND
MACHINE OPERATIONS
Formerly known as CTC 1
Units: 3
Hours: 108 (36 lecture, 72 laboratory)
Fundamentals of woodworking hand tools, power hand tools
and woodworking machinery to safely develop knowledge and
skills leading to cabinet work and furniture making. Emphasis on
basic cabinet making construction details, nomenclature, draw-
ers, guides, doors and cabinet design with an introduction to
computer aided cabinetry design. (not transferable)

CTR 5 PRODUCTION CABINERY (TRADITIONAL)
Formerly known as CTC 5
Units: 3
Advisory: Completion with grade of “C” or better or concurrent
enrollment in CTR 1
Hours: 108 (36 lecture, 72 laboratory)
Economy and custom grade conventional case construction
revolving around industrial standards, joinery, processes, struc-
tures and hardware of residential case structural systems. Also
includes computer-aided spatial designs. Lab work shall be
instructor-initiated case structures for a residential project. (not
transferable)

CTR 24 INTERIOR AND EXTERIOR FINISHING
Formerly known as CTC 24
Units: 3
Hours: 108 (36 lecture, 72 laboratory)
Focus on removal and preparation of existing and new finishes,
sanding, masking, caulking, applications of stains, shellac, var-
nishes and lacquers, interior and exterior painting with primers
and paint, use of brushes, rollers and spray systems, HVLP and
airless. (not transferable)

CTR 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge
at an independent study level in an area where no specific cur-
riculum offering is currently available. Independent study might
include, but is not limited to, research papers, special subject
area projects and research projects. See Independent Study page
in catalog. (CSU)

CTR 37A ADVANCED SKILL AND SPEED DEVELOPMENT—
CONCRETE
Units: 3
Prerequisite: Concurrent enrollment in or completion of CTR 42
with grade of “C” or better
Hours: 108 (36 lecture, 72 laboratory)
Designed to provide an advanced level of skill, speed and
experience for concrete students. Continued in-depth study of
materials acquisition, scheduling, detailed layouts, forming for
foundations or other applications using concrete as a base. Uses
extensive problem solving in the completion of a department-
selected project. (not transferable)

CTR 37B ADVANCED SKILL AND SPEED DEVELOPMENT—
FRAMING
Units: 3
Prerequisite: Concurrent enrollment in or completion of CTR 44
with grade of “C” or better
Hours: 108 (36 lecture, 72 laboratory)
Designed to provide an advanced level of skill, speed and experi-
ence for framing students. Continued in-depth study of materials
acquisition, scheduling, detailed layouts for framing structures, to
include floors, walls, rooms and roofs. Uses extensive problem
solving in the completion of a department-selected project. (not
transferable)

CTR 38 SKILL AND SPEED DEVELOPMENT-CABINERY
AND FURNITURE
Formerly known as CTC 35
Units: 3
Prerequisite: Completion with grade of “C” or better or concurrent
enrollment in CTR 1
Advisory: Completion of CTR 5 with grade of “C” or better
Hours: 108 (36 lecture, 72 laboratory)
Designed to further develop skill, speed and experience capabili-
ties to advance knowledge in construction technology. In-depth
study of architectural woodwork standards; extensive problem
solving in student-selected laboratory projects. (not transferable)
CTR 41 FINISH CARPENTRY
Units: 3
Prerequisite: Completion with grade of “C” or better or concurrent enrollment in CTR 1
Hours: 108 (36 lecture, 72 laboratory)
Fundamentals of woodworking hand tools, power hand tools and woodworking machinery to safely develop knowledge and skills leading to finish trim carpentry. Emphasis on residential construction finish carpentry standards, details, nomenclature, trims and methods of setting interior and exterior doors, window jamb and trims, closet packs, cabinet installs, wainscoting, stair trim and railings, base and ceiling trims and finished flooring applications. (not transferable)

CTR 42 FOUNDATIONS AND FLOOR SYSTEMS
Units: 3
Hours: 108 (36 lecture, 72 laboratory)
Fundamentals of residential foundation and floor system techniques involving layout and construction to include: establishing elevations, site preparation, types of foundation forms, rebar and bolt installation, concrete placement techniques, various types of floor systems and code requirements specific to the above. Major lab project: construction of a foundation and floor system. Includes use and practices of materials and codes related to California Green Technology and “Net Zero Energy” policies. (CSU)

CTR 43 CONSTRUCTION TECHNOLOGY
Units: 4
Advisory: Completion with grades of “C” or better or concurrent enrollment in CTR 42 and 44
Hours: 72 lecture
A general survey of the building industry to include: overview, construction process, permits, financing, business ownership, contracts, insurance, labor costs, mechanics liens and contractor license. (CSU)

CTR 44 CONVENTIONAL AND GREEN FRAMING
Units: 3
Hours: 108 (36 lecture, 72 laboratory)
Fundamentals of residential framing both conventional and green energy efficient techniques involving layout and construction to include: exterior and interior walls, ceilings, roof systems, stair designs and installation. Major lab project: framing a project in the community. Includes use and practices of materials and codes related to California Green Technology and “Net Zero Energy” policies. (CSU)

CTR 47 RESIDENTIAL BUILDING PLAN AND DOCUMENT READING
Units: 1
Corequisite: Must be taken concurrently with CTR 48
Advisory: Completion with grades of “C” or better or concurrent enrollment in CTR 42 and 44
Hours: 18 lecture
Introduction to residential building plans and document reading, to include fundamentals of reading construction documents and plans, symbols, dimensioning, detail drawings, specifications, hold downs, Leed certification schedules and shear schedules. (CSU)

CTR 48 ESTIMATING
Units: 3
Corequisite: Must be taken concurrently with CTR 47
Advisory: Completion with grades of “C” or better or concurrent enrollment in CTR 42 and 44
Hours: 54 lecture
Introduction to residential cost estimating to include material and labor costs calculations, specifications, problem solving and bid preparations. (CSU)

CTR 52 RESIDENTIAL BUILDING CODES
Units: 3
Hours: 54 lecture
Instruction in building codes for light frame one- or two-story dwellings related to local jurisdictions and the State of California. Application of codes to existing buildings with a study of regulations and abatement procedures for standard frame and ICF green technology buildings. Includes codes related to California Green Technology and “Net Zero Energy” policies. (not transferable)

CTR 60 RESIDENTIAL HOUSE WIRING AND CODES
Units: 3
Hours: 108 (36 lecture, 72 laboratory)
Instruction basic to the electrical wiring trade. Inside wiring as applied to residential structures. Electrical service requirements for photovoltaic systems. Use of tools and materials of the trade. Review of the National Electrical Code and the applications and CEC updates due to California Green Technology and “Net Zero Energy” policies. (CSU)

CTR 62 PLUMBING INSTALLATION AND DESIGN
Units: 3
Hours: 108 (36 lecture, 72 laboratory)
Planning, installing and maintaining simple waste, water and gas plumbing systems in accordance with good practice and in conformity to local codes and ordinances. Overview of new plumbing techniques. Includes use of materials and codes related to California Green Technology and “Net Zero Energy” policies. (CSU)
DEAF STUDIES

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
LIAISON COUNSELORS: S. Bramlett, B. Oliver

The Deaf Studies curriculum provides students with the knowledge and skills of American Sign Language (ASL). It also focuses on the uniqueness of ASL as a language, of the Deaf culture, the history of the Deaf Community, of Deaf educational practices and the Interpreting profession. The curriculum is designed to assist students in determining which area of Deaf Studies to enter or to aide them in the area they are currently pursuing.

DEAF STUDIES: AMERICAN SIGN LANGUAGE
A.A. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

The Deaf Studies program offers courses leading to a certificate as well as an Associate in Arts degree. The Deaf Studies: American Sign Language degree program is designed to prepare students to transfer to a four-year baccalaureate program as a Deaf Studies major. The degree and certificate program helps develop Sign Language skills fluent enough to communicate as skilled signers for personal or work-related use. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFST 1 American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>DFST 2 American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>DFST 3 American Sign Language III</td>
<td>4</td>
</tr>
</tbody>
</table>

PLUS 7 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFST 4 American Sign Language IV</td>
<td>4</td>
</tr>
<tr>
<td>DFST 10 Introduction to Deaf Studies</td>
<td>3</td>
</tr>
<tr>
<td>DFST 28 Independent Study AND/OR</td>
<td></td>
</tr>
<tr>
<td>DFST 95 Internship in Deaf Studies</td>
<td>5-3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 19

Recommended electives: ANTH 2; BIOL 55; COMM 3, 7, 10; DRMA 10A, 13; HDEV 1, 4; HED 2; PSYC 100, 103, 104; SOC 1.

CTR 95 INTERNSHIP IN CONSTRUCTION TECHNOLOGY

Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

CTR 300 SELECTED TOPICS IN CONSTRUCTION TECHNOLOGY

Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU)

CTR 400 SELECTED TOPICS IN CONSTRUCTION TECHNOLOGY

Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)
DEAF STUDIES COURSES »

DFST 1 AMERICAN SIGN LANGUAGE I
Units: 4
Hours: 72 lecture
Introduction to the fundamental principles of American Sign Language (ASL). Preparation for visual/gestural communication including basic information relating to Deaf culture, intensive work on comprehension skills and grammatical structures. (CSU, UC)

DFST 2 AMERICAN SIGN LANGUAGE II
Units: 4
Prerequisite: Completion of DFST 1 with grade of “C” or better
Hours: 72 lecture
Continuation of American Sign Language I (ASL I). Designed for students who wish to enhance their proficiency in ASL usage and stresses continued development of basic conversational skills with emphasis on vocabulary and expressive skills. (CSU, UC)

DFST 3 AMERICAN SIGN LANGUAGE III
Units: 4
Prerequisite: Completion of DFST 2 with grade of “C” or better
Hours: 72 lecture
Continuation of American Sign Language II (ASL II). Shifts from comprehension to production of ASL. Further study of vocabulary and grammatical patterns. Continues to develop ASL competencies in numerous conversational settings. Brings ASL fluency to a point of self-generated ASL for the purpose of furthering language use in ASL. (CSU, UC)

DFST 4 AMERICAN SIGN LANGUAGE IV
Units: 4
Prerequisite: Completion of DFST 3 with grade of “C” or better
Hours: 72 lecture
Continuation of American Sign Language III (ASL III). Advanced study of ASL grammar. Further development and refinements of ASL skills and fluency. Intensive work on expressive and receptive skills. Further study of Deaf cultural issues. (CSU, UC)

DFST 10 INTRODUCTION TO DEAF STUDIES
Units: 3
Hours: 54 lecture
Course introduces topics central to the Deaf and Deaf community, including audiology, interpreting, education, culture, history, linguistics, sociology and psychology. Designed to introduce basic information of the American Deaf experience in the United States: Deaf Community/culture and American Sign Language. (CSU, UC)

DFST 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

DFST 95 INTERNSHIP IN DEAF STUDIES
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

DFST 300 SELECTED TOPICS IN DEAF STUDIES
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)
DRAFTING AND ENGINEERING SUPPORT
(Formerly Engineering and Support Technology)

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION
DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
FACULTY: A. Salome
LIAISON COUNSELORS: B. Gosney, Reyes Ortega

The Drafting and Engineering Support curriculum is designed to prepare students for careers in industry as engineering support technicians who plan, prepare and interpret engineering sketches for design and drafting relative to mechanical and architectural designs, civil structures and developments, weldments, electronic circuits, or landscape architecture and design. Includes sketching and the application of Computer Aided Drafting and Design (CADD) software to the creation of graphic representations and simulations in support of engineering projects.

A.A. and A.S. degrees as well as certificates can be earned in the Drafting and Engineering Support Program. The certificate programs do not satisfy A.A./A.S. degree requirements but do qualify students for a certificate in the field of study.

DRAFTING AND ENGINEERING SUPPORT—ARCHITECTURAL/CIVIL CONCENTRATION
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT
(FORMERLY ENGINEERING SUPPORT TECHNOLOGY-ARCHITECTURAL CONCENTRATION)

Successful completion of the curriculum in Drafting and Engineering Support-Architectural/Civil Concentration, prepares students for entry-level positions as document support technicians in the field of architecture, interior design and kitchen/bath design. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES 1 Technical Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>DES 2 Technical Drafting II</td>
<td>3</td>
</tr>
<tr>
<td>DES 10 Industrial and Civil Applications of Computer-Aided Design</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21.5-25
Recommended Electives: ENGR 10; WELD 20
### DRAFTING ESSENTIALS

**SKILLS CERTIFICATE**

Designed to give students the basic drafting support knowledge and abilities required to enter the workforce at an entry level. Focuses on skills relative to the fields of architecture and mechanical computer-aided drafting (CAD). Appropriate for students seeking retraining. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES 1 Technical Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>DES 2 Technical Drafting II</td>
<td>3</td>
</tr>
<tr>
<td>DES 20 Architectural Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>DES 21 Architectural Drawing II</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 12

---

### ARCHITECTURAL DRAFTING SPECIALIST

**SKILLS CERTIFICATE**

Designed to give students the advanced drafting support knowledge and abilities required to enter the workforce at the specialist level. Focuses on skills relative to specialized architectural documentation such as is used in architectural and civil construction trades. Appropriate for students seeking retraining. This is a specialty skills certificate designed to provide career technical skills; it is not equivalent to an associate degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES 20 Architectural Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>DES 21 Architectural Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>DES 22 Architectural Drawing III-BIM (Building Information Modeling)</td>
<td>3</td>
</tr>
<tr>
<td>DES 10 Industrial and Civil Applications of Computer-Aided Design OR CTR 44 Conventional and Green Framing</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 12

---

### MECHANICAL DRAFTING SPECIALIST

**SKILLS CERTIFICATE**

Designed to give students the advanced drafting support knowledge and abilities required to enter the workforce at the specialist level. Focuses on skills relative to specialized mechanical documentation such as is used in aerospace and automotive drafting. Appropriate for students seeking retraining. Will help successful candidates prepare to sit for the professional ASME (American Society of Mechanical Engineers) Y14.5 Geometric Dimensioning and Tolerancing certification exam. This is a specialty skills certificate designed to provide career technical skills; it is not equivalent to an associate degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES 1 Technical Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>DES 2 Technical Drafting II</td>
<td>3</td>
</tr>
<tr>
<td>DES 12 Geometric Dimensioning and Tolerancing</td>
<td>3</td>
</tr>
<tr>
<td>DES 11 Three-Dimensional Modeling OR ENGR 22B Descriptive Geometry and Solid Modeling</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 12

---

### DRAFTING AND ENGINEERING SUPPORT COURSES

#### DES 1 TECHNICAL DRAFTING I

*Formerly known as EST 1*

**Units:** 3

**Hours:** 90 (36 lecture; 54 laboratory which may be scheduled TBA)

Fundamental use of design equipment to create both two dimensional technical sketches and two and three dimensional computer generated working drawings that are used for product definition. Introduction to product and process definition as specified by engineering design disciplines. Designed for students with no previous experience in engineering design/drafting. (CSU)

#### DES 2 TECHNICAL DRAFTING II

*Formerly known as EST 2*

**Units:** 3

**Prerequisite:** Completion of DES 1 with grade of “C” or better or equivalent as determined by instructor

**Hours:** 90 (36 lecture; 54 laboratory which may be scheduled TBA)

Intermediate concepts of engineering design including sections, auxiliaries, threads, fasteners and dimensional tolerancing. Basic concepts of Geometric Dimensioning and Tolerancing. Design for manufacturability and assembly explored to include material selection and properties of materials. Designed for students who have attained a fundamental knowledge of the processes and practices of engineering design/drafting. (CSU)

#### DES 5 COMPUTER-AIDED DRAFTING IA

*Formerly known as EST 5*

**Units:** 3

**Hours:** 90 (36 lecture; 54 laboratory which may be scheduled TBA)

Introduction to the use of computer-aided drafting/design systems to include hardware and software. Emphasis on the production of two-dimensional working drawings. Designed for disciplines that require computer-aided drafting skill sets, such as architectural studies, mechanical engineering, civil engineering, landscape, fashion, interior design, technical theater and geographical information systems (GIS). (CSU)

#### DES 6 COMPUTER-AIDED DRAFTING IB

*Formerly known as EST 6*

**Units:** 3

**Prerequisite:** Completion of DES 5 with grade of “C” or better; or completion of DES 1 and 2 with grades of “C” or better; or equivalent as determined by instructor

**Hours:** 90 (36 lecture; 54 laboratory which may be scheduled TBA)

Continuation of DES 5. Application of advanced computer-aided drafting (CAD) features to produce 2D and 3D working drawings. Emphasis on attribute extraction, data interchange file (DXF), file translation and external referencing. Introduction to wire-frame, surface and solid modeling. (CSU)
DES 10 INDUSTRIAL AND CIVIL APPLICATIONS OF COMPUTER-AIDED DESIGN
Formerly known as EST 10
Units: 3
Prerequisite: Completion of DES 2 or 20 with grade of “C” or better or equivalent as determined by instructor
Hours: 90 (36 lecture; 54 laboratory which may be scheduled TBA)
Development of drafting skills used in the areas of industrial and civil engineering support. Emphasis on land division, determination of location and direction, development of plots based upon legal description and the fundamentals of surveying as applied to preliminary and final maps. Designed for students who have attained an intermediate knowledge of the processes and practices of engineering design/drafting support. Introduction to AutoCAD Civil 3D software. (CSU)

DES 11 THREE-DIMENSIONAL MODELING
Formerly known as EST 11
Units: 3
Prerequisite: Completion of DES 1 and 2 with grades of “C” or better; or equivalent as determined by instructor
Hours: 90 (36 lecture; 54 laboratory which may be scheduled TBA)
Processes employed in developing design solutions using a feature based parametric solid modeler. Includes part and assembly modeling and the development of 2-dimensional part and assembly drawings. SolidWorks is the solid modeler used. (CSU, UC)

DES 12 GEOMETRIC DIMENSIONING AND TOLERANCING
Formerly known as EST 12
Units: 3
Prerequisite: Completion of DES 2 with grade of “C” or better or equivalent as determined by instructor
Hours: 54 lecture
Expands upon basic knowledge of dimensioning mechanical drawings by adding form and feature controls in order to clearly define parts. Review of basic dimensioning and tolerancing. Topics, as defined in ASME Y14.5-2009 Standard, include geometric tolerancing symbols and terms, rules of geometric dimensioning and tolerancing, datums, material condition symbols, tolerances of form and profile, tolerances of orientation and runout, location tolerances and virtual condition. (CSU)

DES 20 ARCHITECTURAL DRAWING I
Formerly known as EST 20
Units: 3
Hours: 90 (36 lecture; 54 laboratory which may be scheduled TBA)
Introduction to the fundamentals of residential construction and its design. Drawings of a residence are developed and detailed, to include sketches, plot and floor plans, foundation, elevations, schedules, framing, electrical, plumbing and section views. Auto-CAD instruction is incorporated to develop CAD drawings and electronic data sets. (CSU)

DES 21 ARCHITECTURAL DRAWING II
Formerly known as EST 21
Units: 3
Prerequisite: Completion of DES 20 with grade of “C” or better or equivalent as determined by instructor
Hours: 90 (36 lecture; 54 laboratory which may be scheduled TBA)
Continuation of the residential design started in DES 20 to include major detailing to conform to the current industry building codes. Drawings to include fireplaces, stairs, interiors, mechanical specifications, Title 24, a two-point perspective drawing and renderings. Basic introduction to Building Information Modeling. (CSU)

DES 22 ARCHITECTURAL DRAWING III-BIM (BUILDING INFORMATION MODELING)
Units: 3
Prerequisite: Completion of DES 21 with grade of “C” or better or equivalent as determined by instructor
Hours: 90 (36 lecture; 54 laboratory which may be scheduled TBA)
Continuation of the architectural design started in DES 20 and 21. Students utilize Building Information Modeling (BIM) using REVIT software to develop commercial architectural documentation (including electronic data sets) in adherence to the International Building Code (IBC) and local county and state codes. (CSU)

DES 28 INDEPENDENT STUDY
Formerly known as EST 28
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

DES 40 MANAGING THE COMPUTER-AIDED DESIGN (CAD) ENVIRONMENT
Formerly known as EST 40
Units: 3
Prerequisite: Completion of DES 10, 11 or 22 with grade of “C” or better, or equivalent as determined by instructor
Hours: 90 (36 lecture; 54 laboratory which may be scheduled TBA)
Designed for the advanced Engineering Support and Drafting student. Topics include proper CAD management skills and the development of “as built” models used in the manufacturing, architectural and civil disciplines. Focus on utilizing, creating and instituting CAD standards, policies and procedures. Development of prototypes integral to the design process in their chosen area of concentration (mechanical, civil and/or architecture). (CSU)
DES 95 INTERNSHIP IN DRAFTING AND ENGINEERING SUPPORT
Formerly known as EST 95
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

DES 300 SELECTED TOPICS IN DRAFTING AND ENGINEERING SUPPORT
Formerly known as EST 300
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU)

THEATER ARTS
A.A. DEGREE
The Theater Arts Program prepares students for future professional employment, upper division study in the theatrical arts and participation in the theater and entertainment community. Classes in theater production, including acting and technical training and basic theatrical concepts are available. The course work provides the student with experience and knowledge to transfer to a four-year college or pursue a future professional career in theater arts. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRMA 10A Fundamentals of Acting</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 13 Introduction to Theater</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 14 Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 15 Stage Lighting</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 4 UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRMA 22A Production Crew I</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22B Production Crew II</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22C Production Crew III</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22D Production Crew IV</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23A Rehearsal and Performance—Cast I</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23B Rehearsal and Performance—Cast II</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23C Rehearsal and Performance—Cast III</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23D Rehearsal and Performance—Cast IV</td>
<td>2</td>
</tr>
</tbody>
</table>

PLUS 9 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRMA 10B Advanced Acting</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 11 Stage Movement</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 16A Costume History</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 16B Costume Construction</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 17 Makeup</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 19A Stage Properties</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 19B Scenic Painting</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 20 Play, Performance and Perception</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 21 Script Analysis</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 28 Independent Study</td>
<td>1-3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 25
STAGECRAFT
SKILLS CERTIFICATE
Trains students to build scenery and properties in the technical theater. Provides experience in construction, painting, hanging lighting instruments and working backstage. Prepares students to communicate and participate as members of a production team with an understanding of appropriate terminology and procedures. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRMA 14 Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 15 Stage Lighting</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 19A Stage Properties OR</td>
<td></td>
</tr>
<tr>
<td>DRMA 19B Scenic Painting</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 28 Independent Study OR</td>
<td></td>
</tr>
<tr>
<td>DRMA 95 Internship in Drama</td>
<td>1-2</td>
</tr>
</tbody>
</table>

PLUS 4 UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRMA 22A Production Crew I</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22B Production Crew II</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22C Production Crew III</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22D Production Crew IV</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23A Rehearsal and Performance—Cast I</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23B Rehearsal and Performance—Cast II</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23C Rehearsal and Performance—Cast III</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23D Rehearsal and Performance—Cast IV</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 14-15

COSTUMING
SKILLS CERTIFICATE
Designed for students interested in building period costumes and creating visual characters, as a cutter, stitcher or makeup artist. Focuses on the use of color, different fabrics and finishes and provides basic sewing techniques used for the stage. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRMA 16A Costume History</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 16B Costume Construction</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 17 Makeup</td>
<td>3</td>
</tr>
<tr>
<td>DRMA 28 Independent Study OR</td>
<td></td>
</tr>
<tr>
<td>DRMA 95 Internship in Drama</td>
<td>1-2</td>
</tr>
</tbody>
</table>

PLUS 4 UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRMA 22A Production Crew I</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22B Production Crew II</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22C Production Crew III</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 22D Production Crew IV</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23A Rehearsal and Performance—Cast I</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23B Rehearsal and Performance—Cast II</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23C Rehearsal and Performance—Cast III</td>
<td>2</td>
</tr>
<tr>
<td>DRMA 23D Rehearsal and Performance—Cast IV</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 14-15

DRAMA COURSES »

DRMA 10A FUNDAMENTALS OF ACTING

<table>
<thead>
<tr>
<th>UNITS</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>54</td>
</tr>
</tbody>
</table>

Analysis and practice of acting techniques: interpretation, pantomime and oral expression. Characterization through improvisation and selected scenes. (CSU, UC)

DRMA 10B ADVANCED ACTING

<table>
<thead>
<tr>
<th>UNITS</th>
<th>PREREQUISITE</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Completion of DRMA 10A with grade of &quot;C&quot; or better</td>
<td>54</td>
</tr>
</tbody>
</table>

Analysis and practice in major styles of acting with particular emphasis on the realistic convention. Activities include one or more acting projects, monologues, scenes and participation in a play. (CSU, UC)

DRMA 11 STAGE MOVEMENT

<table>
<thead>
<tr>
<th>UNITS</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>54</td>
</tr>
</tbody>
</table>

Analysis and practice of movement styles used in the theater; basic movement, control, relaxation and interpretation. Character development through physical exploration and scene study. (CSU, UC)

DRMA 13 INTRODUCTION TO THEATER

<table>
<thead>
<tr>
<th>UNITS</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>54</td>
</tr>
</tbody>
</table>

A study of the theater, procedures, productions and performances in the major periods of dramatic art. Designed for both majors and non-majors interested in acquiring an appreciation of theater as a performing art. (CSU, UC)

DRMA 14 STAGECRAFT

<table>
<thead>
<tr>
<th>UNITS</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>90</td>
</tr>
</tbody>
</table>

Set construction including tools and hardware, painting and techniques of construction, mounting and shifting stage scenery. Theater architecture, rigging and machinery. (CSU, UC)

DRMA 15 STAGE LIGHTING

<table>
<thead>
<tr>
<th>UNITS</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>90</td>
</tr>
</tbody>
</table>

Basic execution of theatrical lighting. Study of design principles, electrical principles, lighting instruments and control equipment. (CSU, UC)

DRMA 16A COSTUME HISTORY

<table>
<thead>
<tr>
<th>UNITS</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>54</td>
</tr>
</tbody>
</table>

Costumes from Greek period to the present. Emphasis on the use of historical costumes for the stage. Costume design project for period play. Designed for both theater majors and non-majors who are interested in acquiring an appreciation and terminology of apparel through history. Students may begin with either 16A or 16B. (CSU, UC)
DRMA 16B COSTUME CONSTRUCTION  
Units: 3  
Hours: 90 (18 lecture, 72 activity)  
Study and implementation of stage costume construction techniques, from pattern drafting and fabric selection to sewing, serging, fitting, draping and dyeing. Students may begin with either 16A or 16B. (CSU, UC)

DRMA 17 MAKEUP  
Units: 3  
Hours: 90 (18 lecture, 72 activity)  
Theory and practical application of stage makeup and prosthetics, including crew work on major productions. Discussion and criticism of student projects. (CSU, UC)

DRMA 19A STAGE PROPERTIES  
Units: 3  
Hours: 90 (18 lecture, 72 activity)  
Study of stage properties including locating and procuring props. Implementation of construction techniques; use and examination of common, unusual and specialized materials. Includes period research for prop implementation and identification. (CSU, UC)

DRMA 19B SCENIC PAINTING  
Units: 3  
Hours: 90 (18 lecture, 72 activity)  
Scenic painting including mixing and matching paints, painting practices and standards. Implementation of painting techniques; use and theory of common, specialized and experimental materials and tools. (CSU, UC)

DRMA 20 PLAY, PERFORMANCE AND PERCEPTION  
Units: 3  
Hours: 54 lecture  
Read and attend theater performances presented throughout the region. Pre-performance analysis and post-performance critiques and discussion with emphasis on production. Geared for both theater majors and non-majors interested in the theater performance experience. (CSU, UC)

DRMA 21 SCRIPT ANALYSIS  
Units: 3  
Hours: 54 lecture  
Introduces Dramatic Arts Majors and other students to the fundamental techniques of script analysis. Focus on students' ability to interpret and describe concepts and ideas related to historical and contemporary dramatic literature. Emphasis on development of techniques of script analysis specific to use in acting, directing, design and critical and social analysis. (CSU, UC)

DRMA 22A PRODUCTION CREW I  
Formerly known as DRMA 12A  
Units: 2  
Hours: 80 activity  
Participation in a college production as a technical assistant, assistant to the designer, or crew member. Focus on one or more of the following areas during the development of the play: scenery building and painting, stage lighting, make-up, costuming, stage operations, publicity and/or house management. (CSU, UC)

DRMA 22B PRODUCTION CREW II  
Units: 2  
Prerequisite: Completion of DRMA 22A with grade of “C” or better  
Hours: 80 activity  
Participation in a college production as a member of the technical crew or production staff at an intermediate level of responsibility. Focus on one or more of the following areas during the development of the play: scenery building and painting, stage lighting, make-up, costuming, stage operations, publicity and/or house management. (CSU)

DRMA 22C PRODUCTION CREW III  
Units: 2  
Prerequisite: Completion of DRMA 22B with grade of “C” or better  
Hours: 80 activity  
Participation in a college production in an advanced leadership level as a member of the production crew, technical staff or design team of a college production. Focus on one or more of the following areas during the development of the play: scenery building and painting, stage lighting, make-up, costuming, stage operations, theatrical design, stage management, publicity and/or house management. (CSU)

DRMA 22D PRODUCTION CREW IV  
Units: 2  
Prerequisite: Completion of DRMA 22C with grade of “C” or better  
Hours: 80 activity  
Participation in a college production in an advanced leadership level as a member of the production crew, technical staff or design team of a college production. Focus on one or more of the following areas during the development of the play: scenery, lighting, make-up, costuming, stage operations, stage management, publicity and/or house management. (CSU)

DRMA 23A REHEARSAL AND PERFORMANCE—CAST I  
Formerly known as DRMA 12B  
Units: 2  
Hours: 80 activity  
Provides an opportunity for students to participate in a college production as a performing ensemble member of the cast. Students develop fundamental rehearsal and performance techniques. All actors are required to audition for roles. (CSU, UC)
DRMA 23B REHEARSAL AND PERFORMANCE—CAST II
Units: 2
Prerequisite: Completion of DRMA 23A with grade of “C” or better
Hours: 80 activity
Enables students to participate in a college production as a principal performing member of the cast. Students investigate increasingly sophisticated ensemble and performance techniques as well as develop more advanced approaches to script analysis and characterization. A successful audition is required. (CSU)

DRMA 23C REHEARSAL AND PERFORMANCE—CAST III
Units: 2
Prerequisite: Completion of DRMA 23B with grade of “C” or better
Hours: 80 activity
Allows students to perform in a college production in a demanding principal role. Students apply increasingly advanced rehearsal and performance techniques to the study of characters of great complexity and depth. A successful audition is required. (CSU)

DRMA 23D REHEARSAL AND PERFORMANCE—CAST IV
Units: 2
Prerequisite: Completion of DRMA 23C with grade of “C” or better
Hours: 80 activity
Provides an opportunity for student actors to explore specific stylistic performance challenges, such as poetic text, operatic or musical roles, non-realistic performance styles, circus skills, mask work and others. Students apply these advanced performance techniques as a principal actor in an appropriate college production. A successful audition is required. (CSU)

DRMA 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

DRMA 95 INTERNSHIP IN DRAMA
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

DRMA 300 SELECTED TOPICS IN DRAMA
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

DRMA 809 SELECTED TOPICS IN FILM STUDIES
Units: 0
Hours: 8 to 54 lecture as scheduled
Course designed for older adults. Introduction to a series of films examined for originality, creative virtuosity, impact, structure and direction. Selected films illustrate a specific dimension of film genre. Genres change with each offering. May be repeated. (noncredit)
EARTH SCIENCE
(Also see Geography)

SCIENCES AND MATHEMATICS
DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211
FACULTY: A. Amigo, F. DeCourten, H. Dodson, R. Hilton
LIAISON COUNSELORS: M. Braga, C. Morris

These courses give a general educational background of the earth’s geology, atmosphere, oceans and its place in time and space.

TRANSFER MAJOR REQUIREMENTS are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Positions for which four-year graduates in the disciplines in Earth Science are qualified include teaching, research, industry, regional planning, environmental analysis and others in the minerals-fuels industries.

GEOLOGY FOR TRANSFER
AS-T DEGREE
Geology investigates our planet Earth from diverse perspectives, spanning from the smaller scale study of its building blocks (minerals) to the larger scale study of its dynamism (Theory of Plate Tectonics), as well as its history and the relationship between the physical environment and the evolution of life. This is accomplished by viewing the planet as a system, where there are interactions between the lithosphere, the atmosphere, the hydrosphere and the biosphere. Within this context, students develop strong critical thinking, problem solving, communication and technical skills to work in a relatively large set of career fields beyond that of Geology, such as Hydrology, Geophysics, Oceanography, Meteorology and Environmental Science. The required curricular sequence also provides the necessary skills in the physical sciences and mathematics required for junior standing at baccalaureate institutions. Thus, future Earth Scientists acquire both a global and sequential way to approach topics, with an emphasis on the interdisciplinary nature of the field and also enhance their expertise through hands-on laboratory work, readying themselves for the applied nature of the workforce (industry, consulting and government agencies).

The Associate in Science in Geology for Transfer degree (AS-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Geology. Students completing the Associate in Science in Geology for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Science in Geology for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:
- completion of the major requirements with grades of C or better; and
- certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI 1 Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 1L Physical Geology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ESCI 3 Historical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 3L Historical Geology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 1A General Chemistry OR</td>
<td></td>
</tr>
<tr>
<td>CHEM 3A General Chemistry AND</td>
<td></td>
</tr>
<tr>
<td>CHEM 3B General Chemistry</td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 1B General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>MATH 30 Analytical Geometry and Calculus</td>
<td></td>
</tr>
<tr>
<td>MATH 31 Analytical Geometry and Calculus</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 26-29

Additional Recommended Preparation (while these courses are not required for this degree, completion of these courses will better prepare students for upper-division geology courses):
- PHYS 205 Principles of Physics: Mechanics AND
- PHYS 205L Principles of Physics Laboratory: Mechanics
- PHYS 210 Principles of Physics: Electricity and Magnetism AND
- PHYS 210L Principles of Physics Laboratory: Electricity and Magnetism
- PHYS 215 Principles of Physics: Heat, Waves and Modern Physics AND
- PHYS 215 Principles of Physics Laboratory: Heat, Waves and Modern Physics

GEOLOGY
A.S. DEGREE
A two-year associate degree in Geology prepares students to work in entry-level technical positions in the geological profession, including such fields as environmental assessment and mitigation, hydrology, mining, agronomy, conservation and interpretation. Additional professional opportunities are available for students with advanced degrees. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI 1 Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 1L Physical Geology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ESCI 3 Historical Geology</td>
<td>3</td>
</tr>
</tbody>
</table>
EARTH SCIENCE COURSES

ESCI 1 PHYSICAL GEOLOGY
Formerly known as GEOL 1
Units: 3
Prerequisite: Eligibility for ENGL 1A
Advisory: Concurrent enrollment in ESCI 1L
Hours: 54 lecture
Dynamic nature of earth’s geologic processes. Earthquakes, volcanoes, mountain building, landslides, rocks, minerals, fossils, erosion, glaciation, deserts, shorelines, groundwater and plate tectonics. (C-ID GEOL 100) (CSU, UC)

ESCI 1L PHYSICAL GEOLOGY LABORATORY
Formerly known as GEOL 1L
Units: 1
Prerequisite: Completion of or concurrent enrollment in ESCI 1
Hours: 54 laboratory
Minerals, rocks, fossils, aerial photos, topographic and geologic maps. Field trip(s) may be required during regular lab time. (C-ID GEOL 100L) (CSU, UC)

ESCI 2 CALIFORNIA GEOLOGY
Formerly known as GEOL 2
Units: 3
Advisory: Completion of ESCI 10 with grade of “C” or better
Hours: 54 lecture
An introduction to the geology of California, including tectonic processes, geologic structures, physiographic provinces, local rocks and minerals, landforms, natural resources, geologic history and natural hazards in the state. (C-ID GEOL 200) (CSU, UC)

ESCI 3 HISTORICAL GEOLOGY
Formerly known as GEOL 3
Units: 3
Corequisite: Concurrent enrollment in ESCI 3L
Advisory: Completion of ESCI 1 and 1L with grades of “C” or better
Hours: 54 lecture
An introduction to Earth’s history and the life it supports. Includes 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. Designed for Geology majors. (C-ID GEOL 110) (CSU, UC)

ESCI 3L HISTORICAL GEOLOGY LABORATORY
Formerly known as GEOL 3L
Units: 1
Corequisite: Concurrent enrollment in ESCI 3
Hours: 54 laboratory
Hands-on learning in the topics of Earth history. Includes geologic dating, fossils, plate tectonics, minerals and rocks, biological evolution, the planet’s origin and the processes that have influenced paleogeography and life history during the past 4.6 billion years. (C-ID GEOL 110L) (CSU, UC)
**ESCI 6 INTRODUCTION TO MINERALS AND ROCKS**  
*Formerly known as GEOL 6*  
*Units: 3*  
*Hours: 90 (36 lecture, 54 laboratory)*

Rocks and minerals of the earth's crust. Crystal forms and systems as means of identification. Methods of testing and identifying rock forming and metallic ore minerals. Laboratory exercises provide instruction on mineral identification using physical properties and chemical testing. Emphasis on developing field identification skills for geologists, prospectors and collectors. Field trip(s) required. (CSU)

**ESCI 7 ENERGY, ENVIRONMENT AND CLIMATE**  
*Also known as ESS 7*  
*Units: 3*  
*Advisory: Eligibility for ENGL 1A*  
*Hours: 54 lecture*

Analysis of the nature of Energy and the environmental impact of its societal use in the context of Earth's record of changing climate. Explores current global climate change due to post-1750 greenhouse gas emissions and current strategies for mitigation and adaptation to changing climate predictions, including future alternative energy sources. (CSU, UC)

**ESCI 10 INTRODUCTION TO EARTH SCIENCE**  
*Units: 3*  
*Prerequisite: Eligibility for ENGL 1A*  
*Hours: 54 lecture*

Introduction to concepts of geology, oceanography, meteorology and astronomy for science or nonscience majors. (C-ID GEOL 120) (CSU, UC)

**ESCI 10L INTRODUCTION TO EARTH SCIENCE LABORATORY**  
*Units: 1*  
*Prerequisite: Completion with grade of “C” or better, or concurrent enrollment in ESCI 10*  
*Hours: 54 laboratory*

Exploration of the solid Earth, its atmosphere, hydrosphere and place in the solar system. Learning through investigation and systematic laboratory procedures, focused on the physical and chemical systems of the Earth such as the tectonic cycle, rock cycle, hydrologic cycle, weather and climate. Field trip(s) may be required during regular lab time. (C-ID GEOL 120L) (CSU, UC)

**ESCI 14 NATURAL DISASTERS**  
*Units: 3*  
*Prerequisite: Eligibility for ENGL 1A*  
*Hours: 54 lecture*

Analysis of the principles underlying natural disasters such as earthquakes, volcanic eruptions, landslides, floods, severe weather, fires and their impact on the environment and human populations. (CSU, UC)

**ESCI 15 INTRODUCTION TO OCEANOGRAPHY**  
*Units: 3*  
*Advisory: Eligibility for ENGL 1A or equivalent*  
*Hours: 54 lecture*

Physical, chemical and biological aspects of our ocean environment with emphasis on geologic processes. (CSU, UC)

**ESCI 15L INTRODUCTION TO OCEANOGRAPHY LABORATORY**  
*Units: 1*  
*Prerequisite: Completion of or concurrent enrollment in ESCI 15*  
*Hours: 54 laboratory*

Exploration of the ocean environment, including physical, chemical and biological aspects. Learning through investigation and systematic laboratory procedures. (CSU, UC)

**ESCI 16G FIELD PALEONTOLOGY AND ANCIENT ENVIRONMENTS**  
*Formerly known as GEOL 16G*  
*Also known as BIOL 16G*  
*Units: 1-4*  
*Hours: 30 (12 lecture, 18 laboratory) per unit*

Investigations into the ecology of environments in the geologic past through field work at fossil sites. Comparisons/contrasts made between ancient (fossil) communities and the current (living) communities of selected study sites. Differences and similarities between the plants and animals used as evidence to reconstruct ancient ecological communities. (CSU)

**ESCI 28 INDEPENDENT STUDY**  
*Units: 1-3*  

Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

**ESCI 50 GEOLOGY OF NATIONAL PARKS AND MONUMENTS**  
*Formerly known as GEOL 50*  
*Units: 3*  
*Hours: 54 lecture*

Investigation of geology and geologic history in the formation of North American national parks and monuments including the Grand Canyon, Bryce, Zion and Yosemite. (CSU)

**ESCI 54A SIERRA NEVADA AND WESTERN BASIN AND RANGE PROVINCES**  
*Formerly known as GEOL 51A*  
*Units: 0.5*  
*Hours: 9 lecture*

Field lecture course designed to teach students the geology of portions of the Sierra Nevada and Western Basin and Range Provinces. Sites along I-80 and old highway 40 are examined. Entrance and transportation fees may be required. (CSU)
ESCI 54B GREAT VALLEY AND COAST RANGE PROVINCES
Formerly known as GEOL 51B
Units: 0.5
Hours: 9 lecture
Field lecture course designed to teach students the geology of portions of the Great Valley and the Coast Range Provinces. Sites along I-80, the Russian River, the Pacific Coast and the San Andreas Fault are examined. Entrance and transportation fees may be required. (CSU)

ESCI 54C GREAT VALLEY, COAST RANGES AND SUTTER BUTTES
Formerly known as GEOL 51C
Units: 0.5
Hours: 9 lecture
Field lecture course designed to teach students the geology of portions of the Great Valley, the Coast Ranges and the Sutter Buttes. Sites west from Roseville through Woodland and Capay Valley to Clear Lake, the Central Sacramento Valley and the Sutter Buttes are examined. Entrance and transportation fees may be required. (CSU)

ESCI 54D WESTERN SIERRA NEVADA AND THE MOTHER LODE
Formerly known as GEOL 51D
Units: 0.5
Hours: 9 lecture
Field lecture course designed to teach students the geology of portions of the Western Sierra Nevada and the Mother Lode. Sites along Highway 49 are examined. Entrance and transportation fees may be required. (CSU)

ESCI 54E MAJOR ROCK UNITS OF THE NORTHERN SIERRA
Formerly known as GEOL 51E
Units: 0.5
Hours: 9 lecture
Field lecture course designed to teach students the geology of major rock units of the Northern Sierra Nevada. Moderate day hike is involved. Entrance and transportation fees may be required. (CSU)

ESCI 54F WEEKEND FIELD GEOLOGY
Formerly known as GEOL 52F
Units: 1
Hours: 18 lecture
Weekend (sometimes including Friday) field trips to selected locations of geologic interest in California and bordering areas. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

ESCI 56F FIELD GEOLOGY OF WESTERN NORTH AMERICA
Formerly known as GEOL 53F
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
One-week field experience to selected areas of geologic interest. Emphasis placed on the geologic history of the many parks and monuments of the west. A three-hour pre-session prior to the trip is required. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

ESCI 91A BEGINNING ARC GIS SOFTWARE
Formerly known as GEOL 91A
Also known as CIS 87 and GEOG 91A
Units: 1
Hours: 18 lecture
Introduction to Geographic Information Systems (GIS) mapping software used to manage, analyze and display spatial information. Create reports and map layouts, query geographic databases and solve spatial problems. Emphasis on using GIS software for practical applications in the fields of natural resource management, disaster mapping, cartographic design, urban planning, business and other related fields. (CSU)

ESCI 95 INTERNSHIP IN EARTH SCIENCE
Formerly known as GEOL 95
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

ESCI 300 SELECTED TOPICS IN EARTH SCIENCE
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC–with unit limitation)

ESCI 301 GEOLOGY, OCEANOGRAPHY AND METEOROLOGY OF COSTA RICA
Units: 1-4
Hours: As scheduled for the appropriate combination of lecture/laboratory hours
The new world (American) tropics are referred to as the neotropics. This is a survey course covering the basics in neotropical natural history including general life zones of Costa Rica (specifically) and their geologic history. Includes general physical processes of Costa Rica geology and geography. (CSU)
ECON 1B FUNDAMENTALS OF ECONOMICS
Units: 3
Prerequisite: Eligibility for ENGL 50 or ENGL N; completion of two years of high school algebra or MATH D with grade of "C" or better, or placement by matriculation assessment process
Hours: 54 lecture
MICRO-economics. Supply and demand as it relates to individual firms in the market. The pricing and employment of resources; use of analytical tools. Includes study of international economics. (CSU, UC)

ECON 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

ECON 300 SELECTED TOPICS IN ECONOMICS
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

ECONOMICS COURSES »

ECON 1A FUNDAMENTALS OF ECONOMICS
Units: 3
Prerequisite: Eligibility for ENGL 50 or ENGL N; completion of two years of high school algebra or MATH D with grade of "C" or better, or placement by matriculation assessment process
Hours: 54 lecture
The basic foundations of MACRO-economic analysis; national income accounting, employment and economic growth; money and banking; monetary and fiscal policy. (CSU, UC)

EDUCATION

LIBERAL STUDIES—ELEMENTARY EDUCATION
A.A. DEGREE
This program, designed for students interested in teaching in public and private elementary schools, prepares students for transfer to four-year colleges and universities. It provides exposure to the fields of natural sciences, social sciences, humanities, composition...
and critical thinking. Students transferring to CSUS as Liberal Studies majors must take all courses listed below. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

4 UNITS FROM NATURAL SCIENCES:
BIOL 11 Concepts of Biology................................................. 4
ESCI 10 Introduction to Earth Science AND
ESCI 10L Introduction to Earth Science Laboratory.................. 4

PLUS 15 UNITS FROM SOCIAL SCIENCES AND HUMANITIES:
ECON 1A Fundamentals of Economics.................................. 3
EDU 7 Tutoring Elementary Students in Reading (also ENGL 7) . 3
EDU 10 Introduction to Elementary Education with
Field Experience .................................................................. 3
HIST 17A History of the United States to 1877 ..................... 3
HIST 50 World History to 1500 ............................................ 3
HIST 51 World History since 1500 ....................................... 3
HDEV 9 Child and Adolescent Development.................... 3
POLS 1 American Government.............................................. 3

PLUS 3 UNITS FROM LANGUAGE AND RATIONALITY:
ENGL 1B Critical Thinking and Writing about Literature OR
ENGL 1C Critical Thinking and Writing across the Curriculum . 3
ENGL 2 Structure of English................................................. 3
COMM 5 Communication Experience................................. 3
MATH 17 Concepts of Mathematics.................................... 3

TOTAL UNITS REQUIRED: 22

EDUCATION COURSES »

EDU 10 INTRODUCTION TO ELEMENTARY EDUCATION WITH FIELD EXPERIENCE

Units: 3
Advisory: Completion of HDEV 1 with grade of “C” or better
Hours: 90 (36 lecture, 54 laboratory)
Explores the career of elementary school teaching during weekly class meetings and supervised field work in a local elementary school. Covers the profession and culture of teaching, observation skills, communication skills, diversity and social issues. Requires completion of a service learning project at participating schools. Fulfills one of the early field experiences for the CSUS Liberal Studies major. Negative TB test and fingerprint screening required. (CSU, UC)

EDU 28 INDEPENDENT STUDY

Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

EDU 95 INTERNSHIP IN EDUCATION

Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

SCIENCES AND MATHEMATICS

DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211
FACULTY: M. Barron, D. Harris, D. Hill, P. Pattengale, A. Wong
LIAISON COUNSELORS: C. Axton, B. Gosney, Reyes Ortega

The Engineering Department offers courses that satisfy the lower division engineering requirements of most California colleges and universities. Students may begin their study of chemical, civil, electrical, or mechanical engineering at Sierra College. Job openings abound in many engineering fields.

TRANSFER MAJOR REQUIREMENTS in Engineering are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Four-year graduates in Engineering are qualified for positions in research, building industry, manufacturing and business.
### ENGINEERING
#### A.A. OR A.S. DEGREE
The Engineering major recognizes a concentration in the field of Engineering. Successful completion of the curriculum in Engineering prepares engineering students for transfer to four-year colleges or universities. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1A General Chemistry OR CHEM 3A General Chemistry AND CHEM 3B General Chemistry</td>
<td>5-6</td>
</tr>
<tr>
<td>ENGR 35 Statics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 45 Materials Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH 30 Analytical Geometry and Calculus I</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 31 Analytical Geometry and Calculus II</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 32 Analytical Geometry and Calculus III</td>
<td>4</td>
</tr>
</tbody>
</table>

**PLUS 6 UNITS FROM:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1B General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 17 Introduction to Circuit Theory</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 17L Circuit Theory Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENGR 22A Engineering Drawing and CAD</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 22B Descriptive Geometry and Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 95 Internship in Engineering</td>
<td>5-4</td>
</tr>
<tr>
<td>ENGR 150 Introduction to Engineering Profession</td>
<td>1</td>
</tr>
<tr>
<td>MATH 33 Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 31-33**

### CIVIL ENGINEERING TECHNOLOGY
#### CERTIFICATE OF ACHIEVEMENT
Successful completion of the curriculum in Civil Engineering Technology will prepare students for entry-level positions as civil engineering technicians. The certificate is designed to provide knowledge and career technical skills in mathematics, physics, chemistry and civil engineering to assist engineers in fields such as surveying, construction, architecture, environmental, material testing, public utilities and land use. The certificate is not equivalent to an associate degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1A General Chemistry OR CHEM 3A General Chemistry AND CHEM 3B General Chemistry</td>
<td>5-6</td>
</tr>
<tr>
<td>CIS 50 Applying Computer Software</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 10 Engineering Survey Measurements</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 22A Engineering Drawing and CAD</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 150 Introduction to Engineering Profession</td>
<td>1</td>
</tr>
<tr>
<td>MATH 8 Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>MECH 10 Fundamentals of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 105 General Physics I AND PHYS 105L General Physics I Laboratory OR PHYS 205 Principles of Physics: Mechanics AND PHYS 205L Principles of Physics Laboratory: Mechanics</td>
<td>4-5</td>
</tr>
</tbody>
</table>

**PLUS AT LEAST 3 ADDITIONAL UNITS FROM:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1B General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 17 Introduction to Circuit Theory</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 17L Circuit Theory Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENGR 22A Engineering Drawing and CAD</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 22B Descriptive Geometry and Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 95 Internship in Engineering</td>
<td>5-4</td>
</tr>
<tr>
<td>ENGR 150 Introduction to Engineering Profession</td>
<td>1</td>
</tr>
<tr>
<td>MATH 33 Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 33-36**
### GENERAL ENGINEERING TECHNOLOGY

**CERTIFICATE OF ACHIEVEMENT**

Successful completion of the curriculum in General Engineering Technology will prepare students for entry-level positions as engineering technicians. The certificate is designed to provide knowledge and career technical skills in mathematics, physics, chemistry and engineering to assist engineers in fields such as fabrication, HVAC, building maintenance, environmental, industrial, safety, mechanical equipment and medical equipment. The certificate is not equivalent to an associate degree.

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1A General Chemistry OR CHEM 3A General Chemistry AND CHEM 3B General Chemistry</td>
<td>5-6</td>
</tr>
<tr>
<td>CIS 50 Applying Computer Software</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 22A Engineering Drawing and CAD</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 150 Introduction to Engineering Profession</td>
<td>1</td>
</tr>
<tr>
<td>MATH 8 Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>MECH 10 Fundamentals of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 105 General Physics I AND PHYS 105L General Physics I Laboratory OR PHYS 205 Principles of Physics: Mechanics AND PHYS 205L Principles of Physics Laboratory: Mechanics</td>
<td>4-5</td>
</tr>
</tbody>
</table>

#### PLUS AT LEAST 7 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1B General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 22B Descriptive Geometry and Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td>MATH 29 Pre-Calculus Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 110 General Physics II AND PHYS 110L General Physics II Laboratory OR PHYS 210 Principles of Physics: Electricity and Magnetism AND PHYS 210L Principles of Physics Laboratory: Electricity and Magnetism</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 31-33**

### ENGR 17 INTRODUCTION TO CIRCUIT THEORY

**Units: 3**

Prerequisite: Completion of MATH 32 and PHYS 4B with grades of “C” or better; completion with grade of “C” or better or concurrent enrollment in MATH 33

**Hours: 54 lecture**

Introduction to circuit analysis. Includes all basic, passive circuit elements and operational amplifiers. Topics covered: constant and time variant circuit networks; network analysis and simplification techniques; response of circuit networks, natural and forced; steady state sinusoidal circuit analysis development from the network differential equations; power calculations; analysis involving operational amplifiers. (CSU, UC)

### ENGR 17L CIRCUIT THEORY LABORATORY

**Units: 1**

Prerequisite: Completion with grade of “C” or better, or concurrent enrollment in ENGR 17

**Hours: 54 laboratory**

Designed to parallel ENGR 17. Experimental verification of circuit analysis concepts. Laboratory exercises include DC, transient and AC measurements on circuits including resistors, capacitors, inductors and operational amplifiers. Basic electrical instrumentation is used. (CSU, UC)

### ENGR 22A ENGINEERING DRAWING AND CAD

**Units: 3**

**Hours: 90 (36 lecture; 54 laboratory which may be scheduled TBA)**

Introduction to the graphical methods, equipment and software used to produce and interpret engineering drawings. Fundamentals of technical drawing including sketching, geometric constructions, orthographic projection, dimensioning, sectional views, auxiliary views, threads and fasteners and pictorial projection. Emphasis on the production of two-dimensional working drawings utilizing freehand sketching and computer-aided (CAD) hardware and software. (CSU)

### ENGR 22B DESCRIPTIVE GEOMETRY AND SOLID MODELING

**Formerly known as ENGR 23**

**Units: 3**

Prerequisite: Completion of ENGR 22A or DES 1 and 2 with grade(s) of “C” or better

**Hours: 90 (36 lecture; 54 laboratory which may be scheduled TBA)**

Fundamental principles of descriptive geometry with application to technical drawing and engineering problems. Visualizing spatial relationships from orthographic drawings. Includes sketches and computer-aided drafting (CAD) projects. Includes an introduction to solid modeling including part and assembly modeling. Designed for Engineering and Drafting and Engineering Support majors. (CSU, UC)
ENGR 28 INDEPENDENT STUDY  
Units: 1-3  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

ENGR 35 STATICS  
Units: 3  
Prerequisite: Completion of PHYS 4A or equivalent  
Advisory: Completion of ENGR 22A or 22B  
Hours: 54 lecture  
Force systems and equilibrium conditions applied to engineering problems. Includes graphical solutions and diagrams to aid analytical solutions. Information on analytical mechanics, development of skills to analyze and solve problems in statics encountered in engineering work. (CSU, UC)

ENGR 37 MANUFACTURING PROCESSES  
Units: 3  
Advisory: Completion of ENGR 22A with grade of “C” or better  
Hours: 90 (36 lecture, 54 laboratory)  
Application of multiple fabrication techniques including tools and materials required for the manufacture of a product. Introduction to design and documentation of a final product. Manufacturing processes in the areas of forming, joining, material removal, casting, assembly and prototyping which includes hands on use of manufacturing equipment. Each student will fabricate a final project based on principles of manufacturing. (CSU)

ENGR 45 MATERIALS SCIENCE  
Units: 3  
Prerequisite: CHEM 1A (may be taken concurrently) and completion of PHYS 4A or equivalent  
Hours: 90 (36 lecture, 54 laboratory)  
Basic principles of physical & chemical behavior of metals, polymers, composites and ceramics in engineering applications; topics include bonding, crystalline structure and imperfections, diffusion, kinetics, phase diagrams, corrosion and electrical properties. Laboratory experiments analyze actual behavior of materials; topics include metallography, mechanical properties of metals and heat treatment. (CSU, UC)

ENGR 95 INTERNSHIP IN ENGINEERING  
Units: 0.5-4  
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

ENGR 150 INTRODUCTION TO ENGINEERING PROFESSION  
Units: 1  
Hours: 18 lecture  
Exploration of the engineering profession, focusing on branches of engineering and relationships between them, spectrum of work functions, professionalism and ethics. Includes orientation to Sierra College engineering program, evaluation of engineering as a personal career choice and development of a student educational plan for transfer. (CSU, UC)

ENGINEERING SUPPORT TECHNOLOGY  
(See Drafting and Engineering Support)

LIBERAL ARTS  
INTERIM DEAN: Rebecca Bocchicchio  
ASSOCIATE DEAN: Anne Fleischmann  
DIVISION OFFICE: W 107  
LIAISON COUNSELORS: C. Axton, P. Neal  
The Department of English faculty subscribes to the idea that the language and literary arts are a basic and a chief way of discovering who we are, especially if “we” is defined broadly to take in the whole of past and present culture as it resides in the English language. We offer students the means of appreciating excellence in the literary language of the past and of developing excellence in their present uses of language. We believe that this experience can enhance a sense of personal identity as that sense is put in relation to “our” manifestations of identity in the past.

TRANSFER MAJOR REQUIREMENTS in English are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements.

ENGLISH FOR TRANSFER  
AA-T DEGREE  
This program is designed to award the Associate in Arts in English for Transfer degree (AA-T) to those students who have completed a specialization in English. The major provides students with a comprehensive study of composition, literary analysis and rhetorical strategies. Students will be able to identify the major themes,
works, authors and movements in literature, particularly British and American literature. Students are trained in composition and given a solid background to explore literature as an intellectual discipline and an art. The required courses help students hone critical thinking, research, rhetoric and writing skills.

The Associate in Arts in English for Transfer degree prepares students to transfer into the CSU system to complete a bachelor’s degree in English. Students completing the Associate in Arts in English for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in English for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

• completion of the major requirements with grades of C or better; and
• certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1B Critical Thinking and Writing about Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1C Critical Thinking and Writing across the Curriculum</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 30A American Literature—Beginnings through Civil War</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 30B American Literature—Civil War to the Present</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 46A English Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 46B English Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 UNITS FROM THE FOLLOWING COURSES OR UNUSED COURSES FROM ABOVE:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 19 Introduction to Creative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 29 Introduction to Drama as Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 32 Introduction to Poetry</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 34 Introduction to the Novel</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 47A World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 47B World Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING COURSES OR UNUSED COURSE FROM ABOVE:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 20 Creative Writing (Poetry)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 21 Creative Writing (Fiction)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 24 Introduction to Literary Criticism and Critical Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 33 Introduction to Shakespeare (The Drama)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 40 The Filmed Novel</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 48 Literature of Science Fiction</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21

ENGLISH

A.A. DEGREE

The English major is awarded for concentrated study in English with an emphasis on literature. Successful completion of the curriculum in English will prepare students for transfer to four-year colleges or universities. The major has been designed to meet lower-division requirements for English majors at most transfer institutions. Students should choose the emphasis or track appropriate to their transfer institution or areas of interest. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better. The major requires a minimum of 60 units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 18 Creative Writing (Non-Fiction)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 19 Introduction to Creative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 20 Creative Writing (Poetry)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 21 Creative Writing (Fiction)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 22 Creative Publication</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 24 Introduction to Literary Criticism and Critical Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 33 Introduction to Shakespeare (The Drama)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 37 American Film Masterpieces</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 38 International Film Masterpieces</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 40 The Filmed Novel</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 41 The Documentary Film: Argumentative Discourse</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 42 The Documentary Film</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 47A World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 47B World Literature</td>
<td>3</td>
</tr>
</tbody>
</table>
ENGLISH COURSES

ENGL A MECHANICS AND BASIC COMPOSITION
Units: 3
Prerequisite: Completion of ENGL 501 or 571 with grade of “C” or better, or placement by matriculation assessment process
Hours: 54 lecture
Reviews essay organization and development, sentence structure, usage, punctuation and mechanics. Includes writing a variety of paragraphs, essays and other assignments to a minimum of 4,000 words. A departmental proficiency essay exam is required for successful completion. For students who need review to become eligible for ENGL 1A. Not open to students who have completed ENGL N. (not transferable)

ENGL N INTEGRATED READING AND COMPOSITION
Units: 6
Prerequisite: Completion of ENGL 501, 570 and 570L with grades of “C” or better, or placement by matriculation assessment process
Hours: 108 lecture
Introduction to college level reading and writing, emphasizing them as interrelated processes. Focuses on strategies to improve comprehension, including vocabulary development, textual analysis, analysis of main ideas, tone, bias, inference. Reviews essay organization and development, sentence structure, usage, punctuation, mechanics. Includes reading and writing a variety of paragraphs and essays. Departmental proficiency essay exam required for successful completion. Course equivalent to ENGL A, ENGL 50 and ENGL 50L, combined. Not open to students who have completed ENGL A, 50 and/or 50L. (not transferable)

ENGL 1A INTRODUCTION TO COMPOSITION
Units: 3
Prerequisite: Placement by matriculation assessment process OR completion of ENGL A, ENGL N or ESL 30W with grade of “C” or better
Hours: 54 lecture
Writing, reading and critical thinking skills necessary for successful completion of a four-year college program. Includes reading, discussion and analysis of selected non-fiction texts. Writing assignments (6,500 words of formal writing) teach students to summarize, explain, analyze, synthesize and organize information logically and to propose and defend original ideas. Instruction in research, MLA documentation and completion of a fully-documented paper using multiple sources. (C-ID ENGL 100) (CSU, UC)

ENGL 1B CRITICAL THINKING AND WRITING ABOUT LITERATURE
Units: 3
Prerequisite: Completion of ENGL 1A or ESL 40W with grade of “C” or better
Hours: 54 lecture
Develops critical thinking, reading and writing skills applicable to the analysis of prose, poetry, drama and criticism from diverse cultural sources and perspectives. Emphasis on the techniques and principles of effective written argument. 6,500 words of formal writing and some research required. (CSU, UC)

ENGL 1C CRITICAL THINKING AND WRITING ACROSS THE CURRICULUM
Units: 3
Prerequisite: Completion of ENGL 1A or ESL 40W with grade of “C” or better
Hours: 54 lecture
Develops critical thinking, reading and writing skills as they apply to textual analysis of primary and secondary sources, essays, articles and book-length works from a range of academic and cultural contexts. Emphasis on the techniques and principles of effective written argument in research-based writing across the curriculum. Requires 6,500 words of formal writing. (C-ID ENGL 105) (CSU, UC)

ENGL 2 STRUCTURE OF ENGLISH
Units: 3
Prerequisite: Completion of ENGL 1A with grade of “C” or better
Hours: 54 lecture
Study of structure of English grammar, both descriptive and prescriptive. Introduction to terminology and structure of traditional grammar; analysis of standard rules for agreement, punctuation, pronoun reference, etc.; introduction to varied methods of language acquisition among culturally diverse populations. For students who plan to teach or who are particularly interested in grammar as it relates to writing. Intended to meet CSU requirement for Liberal Studies major. (CSU, UC)

ENGL 7 TUTORING ELEMENTARY STUDENTS IN READING
Also known as EDU 7
Units: 3
Prerequisite: Eligibility for ENGL 11 or completion of ENGL 1A with grade of “C” or better
Hours: 90 (36 lecture, 54 laboratory)
An opportunity to learn and practice basic methods of tutoring elementary school children in reading. Combines lecture/discussion with field experience doing extensive tutoring at local elementary school. Negative TB test and fingerprint clearance required. Satisfies one of the two required field experience courses for the CSUS Liberal Studies Program. (CSU)
ENGL 11 ANALYTICAL AND CRITICAL THINKING IN READING
Units: 3
Prerequisite: Placement by matriculation assessment process OR completion of ENGL 50/50L or ENGL N with grade(s) of “C” or better
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Designed to teach critical thinking and critical examination of texts and other printed material. Emphasizes principles of critical thinking, logic and fallacies, reasoning strategies, author’s purpose and bias, research evaluation, propaganda, advertising and reading for academic purpose. Includes instruction in analyzing digital texts. (CSU)

ENGL 12 WRITING IN THE WORKPLACE
Units: 3
Prerequisite: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Principles and practices of workplace writing. Includes organizing, writing and revising clear, readable documents for the workplace, such as letters, memos, emails, summaries, reports, job application documents, instructions, proposals and business graphics. (CSU)

ENGL 18 CREATIVITY WRITING (NON-FICTION)
Units: 3
Prerequisite: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Composition of non-fiction prose, with non-fiction reading and analysis assignments drawn from the following genres: autobiography and memoir, philosophical/contemplative reflections, travel writing, nature writing and political/social commentary. Includes discussion and criticism, in workshop mode, of original student writing. (CSU, UC)

ENGL 19 INTRODUCTION TO CREATIVITY WRITING
Units: 3
Prerequisite: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Composition of imaginative writing, with reading assignments of literary models in poetry, fiction and drama. Includes analysis of the models as well as discussion and criticism, in a workshop mode, of original student poems, fiction and plays. (C-ID ENGL 200) (CSU, UC-with unit limitation)

ENGL 20 CREATIVITY WRITING (POETRY)
Units: 3
Prerequisite: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Writing poetry, with reading assignments of literary models in classical, modern and contemporary poetry. Includes analysis of the models as well as discussion and criticism, in a workshop mode, of original student poems. (CSU, UC)

ENGL 21 CREATIVITY WRITING (FICTION)
Units: 3
Prerequisite: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Writing fiction, with reading assignments of literary models in short story and/or novel. Includes analysis of the models as well as discussion and criticism, in a workshop mode, of original student prose. (CSU, UC)

ENGL 22 CREATIVITY PUBLICATION
Units: 3
Advisory: Completion of ENGL 1A with grade of “C” or better
Hours: 72 (36 lecture, 36 activity)
Technique and experience in editing the college literary journal. Writing, selecting and editing manuscripts and graphics, discussing and designing layout and processing copy for all printing will be emphasized. Provides experience in marketing, distribution and other matters related to production management. Production occurs only in the spring semester. (CSU)

ENGL 24 INTRODUCTION TO LITERARY CRITICISM AND CRITICAL CONCEPTS
Units: 3
Prerequisite: Eligibility for ENGL 1A
Hours: 54 lecture
Introduction to the issues, concepts and contexts central to literary interpretation, with particular concentration on the relationships of aesthetics, culture, history, politics, issues of race, gender and class, to conceptions of literary meaning and developments in literary form. Includes surveys and history of major approaches to literary criticism. (CSU, UC)

ENGL 27 LITERATURE BY WOMEN
Units: 3
Prerequisite: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Critical analysis and historical survey of selected works by women from Middle Ages to the present. Emphasizes British and American cultural foundations and literary traditions to further examine the universal and intercultural dynamic of gender roles, personal identity and political consciousness. (CSU, UC)

ENGL 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)
ENGL 29 INTRODUCTION TO DRAMA AS LITERATURE  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Introduction to drama as literature emphasizing the critical analysis of individual plays; the analysis and exploration of the social, historical and critical contexts of the writing and performance of dramatic literature; and exploration and analysis of the changing nature of its performance and reception. Class explores significant works of drama from a variety of cultures and historical periods. Intended for both English and Drama majors and non-majors. (CSU, UC)

ENGL 30A AMERICAN LITERATURE—BEGINNINGS THROUGH CIVIL WAR  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Survey of major authors, themes and genres of American literature from its beginnings through the Civil War. Students may begin with either 30A or 30B. (C-ID ENGL 130) (CSU, UC)

ENGL 30B AMERICAN LITERATURE—CIVIL WAR TO THE PRESENT  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Survey of major authors, themes and genres of American literature from the Civil War to the present. Students may begin with either 30A or 30B. (C-ID ENGL 135) (CSU, UC)

ENGL 32 INTRODUCTION TO POETRY  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Develops a critical appreciation of poetry as genre through study of selected poets and historical periods; examines poetic structures, styles, themes and contexts. Students read representative works in English as well as selected works in translation. (CSU, UC)

ENGL 33 INTRODUCTION TO SHAKEspeare (THE DRAMA)  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Reading and discussion of selected plays of Shakespeare; includes discussion of the historical context and contemporary critical views. (CSU, UC)

ENGL 34 INTRODUCTION TO THE NOVEL  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Reading, discussion and critical analysis of selected novels from the eighteenth century to present. Includes discussion of the historical context and contemporary critical views. (CSU, UC)

ENGL 35 INTRODUCTION TO THE SHORT STORY  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  

ENGL 37 AMERICAN FILM MASTERPIECES  
Units: 3  
Hours: 72 (36 lecture, 36 activity)  
Development of a critical appreciation of the motion picture as art and literature. Emphasis on American films. (CSU, UC-with unit limitation)

ENGL 38 INTERNATIONAL FILM MASTERPIECES  
Units: 3  
Hours: 72 (36 lecture, 36 activity)  
Development of a critical appreciation of the motion picture as art and literature. Emphasis on International films. (CSU, UC-with unit limitation)

ENGL 40 THE FILMED NOVEL  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
A specialized course focusing on the film adaptations of novels. Includes historical background and basic terminology for the novel and film genres. Examines the challenges of adapting one art form into another, while studying specific novels and their film adaptations. (CSU, UC)

ENGL 41 THE DOCUMENTARY FILM: ARGUMENTATIVE DISCOURSE  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Examines documentary films as a mode of argumentative discourse. Emphasizes documentaries exploring selected contemporary cultural, social and political controversies. Explores the use of documentary films to analyze cultural, political and social issues, to promote political action and discourse and to shape opinion. (CSU, UC)

ENGL 42 THE DOCUMENTARY FILM  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Development of a critical appreciation of modern documentary film across a variety of subject matter: sports, advertising, politics, music, art, biography, foreign affairs, business, science and history. (CSU, UC)
ENGL 44 INTRODUCTION TO CHILDREN’S LITERATURE  
Also known as HDEV 44  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Examination of classic and contemporary children’s literature, including criteria for selection, uses in child development and education and practices in presentation and analysis. Designed for parents, prospective teachers, aides, child development professionals and students interested in the field of literature for children ages 1-13. (C-ID ENGL 180) (CSU)

ENGL 45 INTRODUCTION TO ADOLESCENT LITERATURE  
Units: 3  
Prerequisite: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
An examination of works which have earned merit as classics written for young adults, including discussion of literary form, the criteria for selection, practice in presentation and analysis and aesthetic appreciation in young readers. May include representative writers such as Shakespeare, Dickens, Twain and Tolkien as well as contemporary, multiculturally diverse writers such as Salinger, Angelou, Tan, Walker and Wright. (CSU)

ENGL 46A ENGLISH LITERATURE  
Units: 3  
Prerequisite: Eligibility for ENGL 1A  
Hours: 54 lecture  
Survey of English literature from the Anglo-Saxon period through the mid 18th century. Includes study of selected major authors and texts of each period as well as significant or representative minor authors and texts. Incorporates analysis of the development of literary forms, developments and transformations of central themes and developments in the historical, socioeconomic and cultural contexts of the literature. Students may begin with either 46A or 46B. (C-ID ENGL 160) (CSU, UC)

ENGL 46B ENGLISH LITERATURE  
Units: 3  
Prerequisite: Eligibility for ENGL 1A  
Hours: 54 lecture  
Survey of British, British Empire and Commonwealth authors from the Romantic Movement through the early 21st century. Includes works of principal Romantic, Victorian and 20th century poets, novelists, playwrights and/or essayists, as well as selected works of significant and representative minor authors. Incorporates analysis of the development of literary forms, developments and transformations of central themes and developments in the historical, socioeconomic and cultural contexts of the literature. Students may begin with either 46A or 46B. (C-ID ENGL 165) (CSU, UC)

ENGL 47A WORLD LITERATURE  
Units: 3  
Prerequisite: Eligibility for ENGL 1A  
Hours: 54 lecture  
Survey of world literature in translation from the ancient world through the 16th Century. Includes representative works from major world literary cultures and eras; explores traditions where appropriate. Incorporates analysis of the development of literary forms, developments and transformations of central themes and developments in the historical and cultural contexts of the literature. Includes cross-cultural analysis and exploration of cross-cultural influences in literary culture. Students may begin with either 47A or 47B. (C-ID ENGL 140) (CSU, UC)

ENGL 47B WORLD LITERATURE  
Units: 3  
Prerequisite: Eligibility for ENGL 1A  
Hours: 54 lecture  
A survey of world literature in translation from the seventeenth through twenty-first centuries. Includes representative works from major world literary cultures and eras, including post-colonial developments; explores traditions where appropriate. Incorporates analysis of the development of literary forms, developments and transformations of central themes and developments in the historical and cultural contexts of the literature. Includes cross-cultural analysis and exploration of cross-cultural influences in literary culture. Students may begin with either 47A or 47B. (C-ID ENGL 145) (CSU, UC)

ENGL 48 LITERATURE OF SCIENCE FICTION  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Major themes and types of science fiction literature, its primary artists and its literary and historical relevance. (CSU, UC)

ENGL 50 MASTERING COLLEGE ACADEMIC LITERACY  
Units: 3  
Prerequisite: Completion of ENGL 570 and 570L with grades of “C” or better or placement by matriculation assessment process; AND completion with grade of “C” or better, or concurrent enrollment in, ENGL 50L  
Hours: 54 lecture  
Emphasis on inferential comprehension, critical evaluation and academic strategies for college-level texts. Critical academic skills include evaluation of college level texts, analysis of media-based information. Not open to students who have completed English N. (not transferable)
ENGL 510 WRITING FOR PROFICIENCY
Units: 1
Hours: 18 lecture
Review and practice in understanding writing assignments; structuring and developing paragraphs and essays; editing and correcting errors in grammar and mechanics. (pass/no pass grading) (not degree applicable)

ENGL 560 FOUNDATIONS OF COLLEGE ACADEMIC LITERACY
Units: 3
Prerequisite: Completion with grade of "C" or better, or concurrent enrollment in, ENGL 560L
Advisory: Placement by matriculation assessment process
Hours: 54 lecture
Designed to assist students in developing foundational strategies for success in college level reading and learning. Increases competency in vocabulary, word usage, spelling and writing strategies. (not degree applicable)

ENGL 560L FOUNDATIONS OF COLLEGE ACADEMIC LITERACY LABORATORY
Units: 1
Prerequisite: Completion with grade of "C" or better, or concurrent enrollment in, ENGL 560
Advisory: Placement by matriculation assessment process
Hours: 54 laboratory
Development of a variety of comprehension strategies to apply to a range of texts. (not degree applicable)

ENGL 50L MASTERING COLLEGE ACADEMIC LITERACY LABORATORY
Units: 1
Prerequisite: Completion of ENGL 570 and 570L with grades of "C" or better or placement by matriculation assessment process; AND completion with grade of "C" or better, or concurrent enrollment in, ENGL 50
Hours: 54 laboratory
Application of inferential comprehension and research strategies to a variety of college level texts. (not transferable)

ENGL 60 BASIC GRAMMAR AND PUNCTUATION
Formerly known as ENGL 400A
Units: 1
Advisory: Eligibility for ENGL A
Hours: 18 lecture
Review of fundamentals of English grammar and usage with a focus on helping students edit their own writing. Reviews parts of speech, parts and types of sentences, pronoun usage, subject-verb agreement and punctuation. Not intended as a comprehensive course in English grammar. (not transferable)

ENGL 300 SELECTED TOPICS IN ENGLISH
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

ENGL 400 SELECTED TOPICS IN ENGLISH
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "400" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

ENGL 501 DEVELOPMENTAL WRITING
Units: 4
Hours: 90 (54 lecture, 36 activity)
Focuses on basic writing skills through practice in writing and reading. Emphasizes the writing process leading to development of skills in writing sentences, single paragraphs and multi-paragraph assignments. Reviews paragraph organization and development, grammar, punctuation, usage and mechanics. Designed for students who need review prior to enrolling in ENGL A. Not open to students who have completed ENGL 571. (not degree applicable)
ENGLISH AS A SECOND LANGUAGE

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: M. Brock, K. Foster, R. Persiani, J. Schamber
LIAISON COUNSELORS: C. Axton, P. Neal

English as a Second Language (ESL) is a program for non English-speaking students. Courses are offered for all fluency levels and are based on innovative curriculum and a variety of methods and techniques to fit different learning styles. The program serves students who speak a large variety of languages and offers seven levels of courses from novice to advanced college. At least one year of ESL adult education is recommended for resident students entering at the novice level. There are four courses at most levels: writing, grammar, reading/vocabulary and listening/speaking.

ENGLISH AS A SECOND LANGUAGE ACADEMIC PREPAREDNESS
SKILLS CERTIFICATE

The ESL Academic Preparedness Skills Certificate recognizes advanced-low level proficiency in English language writing, reading, listening/speaking and grammar skills. This skills certificate may be used to demonstrate academic preparedness for college courses as well as workplace-ready language skills. This skills certificate is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESL 25G Academic Grammar and Editing</td>
<td>3</td>
</tr>
<tr>
<td>ESL 25L Academic Listening and Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ESL 30R Advanced Reading and Vocabulary</td>
<td>3</td>
</tr>
<tr>
<td>ESL 30W Advanced Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 12

ENGL 571 INTEGRATED FOUNDATIONS OF READING AND COMPOSITION

Units: 4-6
Prerequisite: Completion of ENGL 560 and 560L with grades of “C” or better, or placement by matriculation assessment process
Hours: 72 lecture (4 units); 108 lecture (6 units)

Practice in pre-college level reading and writing, emphasizing their interrelatedness. Focuses on strategies to improve comprehension, develop vocabulary, analyze expository and literary texts, paragraph structure and development, sentence structure, usage, punctuation and mechanics. Includes reading and writing a variety of paragraphs and progressing into essays. Variable unit course: 4 units accelerated or 6 units standard based upon assessment scores. Course equivalent to ENGL 501, 570 and 570L, combined. Not open to students who have successfully completed ENGL 501, 570, or 570L. (not degree applicable)

ENGL 812 POETRY WRITING & EXPERIMENT

Units: 0
Hours: 8 to 18 lecture as scheduled

Designed for older adults interested in exploring the writing of poetry. Exercises and experiments with language in writing poetry. Uses primarily American poets (from Walt Whitman to Susan Howe and from George Oppen to Emily Dickinson) to determine how writers use image, form, sound and rhythm effectively. Develops a language with which to speak about the craft of poetry. May be repeated. (noncredit)

ENGL 813 BIBLE AS LITERATURE

Units: 0
Hours: 8 to 54 lecture as scheduled

Course for older adults interested in exploring the Bible as literature. Close reading of books from the Bible discussed in the historical and cultural context of the times. Emphasis on literary characteristics of the books and/or topics. Different books and/or topics examined each class offering. May be repeated. (noncredit)

ENGL 814 SELECTED TOPICS IN CREATIVE WRITING

Units: 0
Hours: 8 to 54 lecture as scheduled

Course for older adults interested in exploring creative writing. Exercises in creative writing drawing ideas from personal observation and experience. Overcome obstacles of how and where to begin writing, what to write about and how to shape ideas into a variety of formats—creative paragraphs, short stories, nonfiction and fiction. Experiment with various styles, structures and forms of writing. Focus and topics will vary with each offering. May be repeated. (noncredit)

ENGL 815 SELECTED TOPICS IN LITERATURE

Units: 0
Hours: 8 to 54 lecture as scheduled

Course for older adults interested in exploring literature. Study of selected styles of work and/or authors in literature. Examination of theme and impact of work on society. Includes discussion of the influences of the geographic, economic, cultural and physical setting at the time of writing. May be repeated. (noncredit)
ENGLISH AS A SECOND LANGUAGE COURSES »

ESL 24P ACCENT REDUCTION AND PRONUNCIATION FOR ESL STUDENTS
Units: 1
Prerequisite: Completion of ESL 520L with grade of "C" or better, or placement through assessment process at or above the ESL 530 level
Advisory: Concurrent enrollment in ESL 530L and/or ESL 25L
Hours: 18 lecture
Focuses on accent reduction for non-native speakers of English. Offers intensive practice and refinement of pronunciation skills that enable students to sound more like native-speakers of English. (not transferable)

ESL 25G ACADEMIC GRAMMAR AND EDITING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process, completion of ESL 530G with grade of "C" or higher, or eligibility for ENGL A
Advisory: Concurrent enrollment in ESL 540W or 30W recommended
Hours: 72 (54 lecture, 18 laboratory)
Multi-skill course emphasizing academic grammar and editing skills for non-native speakers. Focus on verb tense usage and sequence, conditional, passive voice for research writing, clauses and self-editing strategies. Open to students eligible for ESL 540, ESL 30 or ENGL A. (CSU)

ESL 25L ACADEMIC LISTENING AND SPEAKING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 530L with a grade of "C" or better
Hours: 72 (54 lecture, 18 laboratory)
Speaking and listening course for non-native speakers with emphasis on advanced oral skills and tasks necessary to succeed in academic situations, including note-taking, listening comprehension and academic speaking tasks. Open to students eligible for ESL 540 or ESL 30. (CSU)

ESL 25W ACADEMIC TIMED WRITING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process at ESL 540W or higher or at ENGL A or higher, or completion of ESL 530W or ENGL 501 with a grade of "C" or better
Hours: 54 lecture
Review and practice for non-native English speakers in understanding and responding to academic timed writing assignments. Emphasis on topic analysis, organization, drafting and editing for errors in sentence structure, grammar, mechanics and word choice in timed writing settings. Open to students eligible for ESL 540W, 30W, 40W, ENGL A or higher. (CSU)

ESL 30R ADVANCED READING AND VOCABULARY
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 540R with grade of "C" or better
Hours: 72 (54 lecture, 18 laboratory)
Multi-skill course emphasizing advanced reading and vocabulary skills for non-native English speakers. Focus on strategies for comprehending and analyzing authentic literary, journalistic and academic texts and building academic vocabulary. (CSU)

ESL 30W ADVANCED WRITING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 540W with a grade of "C" or better
Advisory: Concurrent enrollment in ESL 30R recommended
Hours: 54 lecture
Multi-skill course emphasizing advanced writing skills for non-native English speakers. Focus on essay organization, development, support from sources, timed writing and editing strategies. Departmental writing exam/portfolio process required for successful course completion. Prepares students for ESL 40W or ENGL 1A. (CSU, UC-with unit limitation)

ESL 40L COLLEGE COMMUNICATION FOR NON-NATIVE SPEAKERS
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 25L with a grade of "C" or better
Hours: 72 (54 lecture, 18 laboratory)
College speaking and listening course for non-native speakers. Focus on formal and informal speaking and class participation skills for college settings, including lecture comprehension/note-taking and oral presentations. (CSU)

ESL 40W COLLEGE COMPOSITION FOR NON-NATIVE SPEAKERS
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 30W or ENGL A with a grade of "C" or better
Hours: 54 lecture
College writing for non-native speakers emphasizing essay development, writing from textual sources, argumentation and research. Departmental writing exam/portfolio process and a research paper required for successful course completion. Satisfies composition requirement for A.A. degree and CSU General Education requirement and transfers to UC as elective credit. (CSU, UC-with unit limitation)

ESL 300 SELECTED TOPICS IN ESL
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)
ENGLISH AS A SECOND LANGUAGE

**ESL 500G NOVICE GRAMMAR**
- Units: 3
- Prerequisite: Placement by ESL matriculation process
- Advisory: Concurrent enrollment in ESL 500W, 500R and 500L
- Hours: 54 lecture
- Multi-skill course emphasizing grammar skill development for non-native English speakers. Focus on basic grammar usage for sentence-level writing. (not degree applicable)

**ESL 500L NOVICE LISTENING & SPEAKING**
- Units: 3
- Prerequisite: Placement by ESL matriculation process
- Advisory: Concurrent enrollment in ESL 510W, 510G and 510L
- Hours: 72 (54 lecture, 18 laboratory)
- Multi-skill course emphasizing listening and speaking skill development for non-native English speakers. Focus on listening comprehension, oral fluency, novice-high vocabulary and structures. (not degree applicable)

**ESL 500R NOVICE READING & VOCABULARY**
- Units: 3
- Prerequisite: Placement by ESL matriculation process
- Advisory: Concurrent enrollment in ESL 510W, 510G and 510L
- Hours: 72 (54 lecture, 18 laboratory)
- Multi-skill course emphasizing reading and vocabulary skill development for non-native English speakers. Focus on novice skills in reading short texts for comprehension and vocabulary acquisition. (not degree applicable)

**ESL 500W NOVICE WRITING**
- Units: 3
- Prerequisite: Placement by ESL matriculation process
- Advisory: Concurrent enrollment in ESL 500G, 500R and 500L recommended
- Hours: 54 lecture
- Multi-skill course emphasizing writing skills for non-native English speakers. Focus on sentence-level writing. Departmental writing examination/portfolio process required for successful course completion. (not degree applicable)

**ESL 510G NOVICE-HIGH GRAMMAR**
- Units: 3
- Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 500G with a grade of "C" or better
- Advisory: Concurrent enrollment in ESL 510W, 510R and 510L
- Hours: 72 (54 lecture, 18 laboratory)
- Multi-skill course emphasizing grammar skills for non-native English speakers. Focus on grammar for paragraph-level writing. (not degree applicable)

**ESL 510L NOVICE-HIGH LISTENING AND SPEAKING**
- Units: 3
- Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 500L with a grade of "C" or better
- Advisory: Concurrent enrollment in ESL 510W, 510G and 510L
- Hours: 72 (54 lecture, 18 laboratory)
- Multi-skill course emphasizing listening and speaking skill development for non-native English speakers. Focus on listening comprehension, oral fluency, novice-high vocabulary and structures. (not degree applicable)

**ESL 510R NOVICE-HIGH READING AND VOCABULARY**
- Units: 3
- Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 500R with a grade of "C" or better
- Advisory: Concurrent enrollment in ESL 510W, 510G and 510L
- Hours: 72 (54 lecture, 18 laboratory)
- Multi-skill course emphasizing reading and vocabulary skill development for non-native English speakers. Focus on reading comprehension, vocabulary and dictionary skills. (not degree applicable)

**ESL 510W NOVICE-HIGH WRITING**
- Units: 3
- Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 500W with a grade of "C" or better
- Advisory: Concurrent enrollment in ESL 510R, 510G and 510L
- Hours: 54 lecture
- Multi-skill course emphasizing writing skills for non-native English speakers. Focus on paragraph-level writing. Departmental writing examination/portfolio process required for successful course completion. (not degree applicable)

**ESL 515 ESL THROUGH COMPUTER TECHNOLOGY**
- Units: 3
- Hours: 72 (36 lecture, 36 activity)
- Introduction for non-native speakers of English to computer parts and function vocabulary, keyboarding, word processing, mySierra, Canvas and internet and software use for language learning. Prepares students for future or current ESL lab classes. (not degree applicable)

**ESL 520G INTERMEDIATE-LOW GRAMMAR**
- Units: 3
- Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 510G with a grade of "C" or better
- Advisory: Concurrent enrollment in ESL 520W, 520R and 520L
- Hours: 72 (54 lecture, 18 laboratory)
- Multi-skill course emphasizing grammar skills for non-native English speakers. Focus on grammar for paragraphs and short essays including sentence structures, simple and complex verb tenses, auxiliary verbs and modifiers. (not degree applicable)
ESL 520L INTERMEDIATE-LOW LISTENING AND SPEAKING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 510L with a grade of “C” or better
Advisory: Concurrent enrollment in ESL 520W, 520G and 520R
Hours: 72 (54 lecture, 18 laboratory)
Multi-skill course emphasizing listening and speaking skill development for non-native English speakers. Focus on listening comprehension, oral fluency, intermediate-low vocabulary and structures. (not degree applicable)

ESL 520R INTERMEDIATE-LOW READING AND VOCABULARY
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 510R with a grade of “C” or better
Advisory: Concurrent enrollment in ESL 520W, 520G and 520L
Hours: 72 (54 lecture, 18 laboratory)
Multi-skill course emphasizing reading and vocabulary skill development for non-native English speakers. Focus on reading texts with greater comprehension, speed and more vocabulary acquisition. (not degree applicable)

ESL 520W INTERMEDIATE-LOW WRITING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 510W with a grade of “C” or better
Advisory: Concurrent enrollment in ESL 520G, 520R and 520L
Hours: 54 lecture
Multi-skill course emphasizing writing skills for non-native English speakers. Focus on paragraph and short multiple-paragraph writing. Departmental writing examination/portfolio process required for successful course completion. (not degree applicable)

ESL 530G INTERMEDIATE-MID GRAMMAR
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 520G with a grade of “C” or better
Advisory: Concurrent enrollment in ESL 530W, 530R and 530L
Hours: 72 (54 lecture, 18 laboratory)
Multi-skill course emphasizing grammar skills for non-native English speakers. Focus on grammar for short essays including complex sentence structures, perfect and progressive verb tenses and modal auxiliaries. (not degree applicable)

ESL 530L INTERMEDIATE-MID LISTENING AND SPEAKING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 520L with a grade of “C” or better
Advisory: Concurrent enrollment in ESL 530W, 530G and 530R
Hours: 72 (54 lecture, 18 laboratory)
Multi-skill course emphasizing listening and speaking skill development for non-native English speakers. Focus on listening comprehension, oral fluency for academic and community situations and intermediate-mid vocabulary and structures. (not degree applicable)

ESL 530R INTERMEDIATE-MID READING AND VOCABULARY
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 520R with a grade of “C” or better
Advisory: Concurrent enrollment in ESL 530W, 530G and 530L
Hours: 72 (54 lecture, 18 laboratory)
Multi-skill course emphasizing reading and vocabulary skill development for non-native English speakers. Focus on reading longer more complex texts with greater comprehension and speed and vocabulary and idiom acquisition. (not degree applicable)

ESL 530W INTERMEDIATE-MID WRITING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 520W with a grade of “C” or better
Advisory: Concurrent enrollment in ESL 530G, 530R and 530L
Hours: 54 lecture
Multi-skill course emphasizing writing skills for non-native English speakers. Focus on basic organization and development in essay writing. Departmental writing examination/portfolio process required for successful course completion. (not degree applicable)

ESL 540C INTRODUCTION TO ACADEMIC READING AND WRITING
Units: 5
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 530R and 530W with grades of “C” or better
Advisory: Concurrent enrollment in ESL 25G
Hours: 108 (90 lecture, 18 laboratory)
Introduction for non-native speakers to essay organization, timed-writing and editing, as well as comprehension and evaluation of academic texts. Prepares students for the 30 level courses. Course equivalent to 540R and 540W, combined. Not open to students who have successfully completed ESL 540R or 540W. (not degree applicable)
ENVIRONMENTAL STUDIES AND SUSTAINABILITY

SCIENCES AND MATHEMATICS
DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211
FACULTY: K. Gilbert
LIAISON COUNSELORS: M. Braga, E. Farrelly

The Environmental Studies and Sustainability program at Sierra College provides students with the opportunity to meet the requirements to transfer to four-year colleges in the environmental fields including Environmental Studies and Environmental Science. The program provides students with a common interdisciplinary base with which to address issues of environmental health, sustainability and global stewardship. Students will have the opportunity to apply principles from a range of fields including the physical and life sciences, social sciences and philosophy, as well as technical skills utilized in ecosystem assessment and the expanding field of solar energy. In addition to A.S. and transfer opportunities, skills certificates are available in the field of photovoltaics.

ENVIRONMENTAL STUDIES AND SUSTAINABILITY
A.S. DEGREE
Successful completion of the Environmental Studies and Sustainability curriculum will prepare students for transfer to four-year colleges or universities. The major has been designed to meet lower-division requirements for Environmental Studies and Environmental Science majors at transfer institutions. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1 General Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 2 Botany</td>
<td>4.5</td>
</tr>
<tr>
<td>BIOL 3 General Zoology</td>
<td>4</td>
</tr>
<tr>
<td>ESCI 1 Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1A Fundamentals of Economics OR ECON 1B Fundamentals of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ESS 1 The Environment and the Human Impact</td>
<td>3</td>
</tr>
</tbody>
</table>

ESL 540R INTERMEDIATE-HIGH READING AND VOCABULARY
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 530R with a grade of "C" or better
Advisory: Concurrent enrollment in ESL 540W recommended
Hours: 72 (54 lecture, 18 laboratory)
Intermediate-high reading course for non-native speakers on reading longer academic texts with better understanding, improving reading speed and extensive out-of-class reading. (not degree applicable)

ESL 540W INTERMEDIATE-HIGH WRITING
Units: 3
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 530W with a grade of "C" or better
Advisory: Concurrent enrollment in ESL 25G, 540R and 25L recommended
Hours: 54 lecture
Intermediate-high writing course for non-native speakers on academic essay organization, timed writing, integration of writing and grammar and editing. Departmental writing examination/portfolio process required for successful course completion. Prepares students for ESL 30W. (not degree applicable)

ESL 805 ENGLISH FOR WORK SUCCESS
Units: 0
Hours: 48-96 activity as scheduled
Novice-level vocational English as a Second Language focusing on workplace language needs and skills. Emphasis on listening and speaking in workplace situations and related grammar, structure, vocabulary, reading and writing skills. May be repeated. (noncredit)

ENVIRONMENTAL HORTICULTURE
(See Agriculture, Biological Sciences and Recreation Management)
ENVIRONMENTAL STUDIES AND SUSTAINABILITY

### PLUS 4-6 UNITS FROM THE FOLLOWING:
- AGRI 198 Food, Society and the Environment ............................................. 3
- AGRI 221 Introduction to Soil Science .......................................................... 3
- ANTH 2 Cultural Anthropology ................................................................. 3
- ANTH 14 Globalization Studies .................................................................. 3
- BIOL 13 Field Methods in Ecology .............................................................. 3
- BIOL 14 Natural History, Ecology and Conservation .................................... 4
- *BIOL 16 Field Studies in Biology (any) .................................................. .5-3
- BIOL 23 Wildflower Identification (also AGRI 162) ..................................... 1
- BIOL 24 Wildland Trees and Shrubs (Dendrology) (also AGRI 163) ................. 4
- ECON 1A Fundamentals of Economics OR ECON 1B Fundamentals of Economics ................................................................. 3
- ESCI 1L Physical Geology Laboratory ....................................................... 1
- ESCI 10 Introduction to Earth Science .......................................................... 3
- *ESCI 16G Field Paleontology and Ancient Environments (also BIOL 163) .......... 1-3
- *ESCI 54 Saturday Field Geology (any) .................................................. .5-3
- *ESCI 55F Weekend Field Geology .............................................................. 1
- ESS 6 The Sierra Nevada ............................................................................ 3
- ESS 7 Energy, Environment and Climate (also ESCI 7) ............................... 3
- ESS 10 Conservation of Natural Resources .................................................. 3
- ESS 13 Environmental Regulations .............................................................. 3
- ESS 30 Beginning Photovoltaic Systems ...................................................... 4
- GEOG 1 Physical Geography ..................................................................... 3
- GEOG 2 Cultural Geography ...................................................................... 3
- GEOG 90 Introduction to Geographic Information Systems (GIS) ................. 3
- GEOG 91A Beginning ArcGIS Software (also CIS 87, ESCI 91A) ............... 1
- GEOG 91B Intermediate ArcGIS Software ................................................. 1
- MATH 13 Elementary Statistics .................................................................. 4
- PHIL 60 Introduction to Environmental Ethics ............................................. 3
- PSYC 170 Environmental Psychology .......................................................... 3
- *A maximum of 3 units may be taken from the BIOL 16 and ESCI 16, 54 and 55 field studies courses.

**TOTAL UNITS REQUIRED: 25.5-27.5**

### PHOTOVOLTAIC ADVANCED SKILLS CERTIFICATE

The purpose of the Photovoltaic Advanced Skills Certificate is to provide students with the knowledge and skills required to obtain employment as Photovoltaic System Installers and Technicians. Emphasis is on the critical skill competencies as recommended by the North American Board of Certified Energy Practitioners for entry level photovoltaic systems work. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESS 30 Beginning Photovoltaic Systems</td>
<td>4</td>
</tr>
<tr>
<td>ESS 32 Intermediate Photovoltaic Systems</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 8**

### ENVIRONMENTAL STUDIES AND SUSTAINABILITY COURSES »

#### ESS 1 THE ENVIRONMENT AND THE HUMAN IMPACT

*Formerly known as INT 1*

**Units: 3**

**Advisory: Completion of ENGL A with grade of “C” or better**

**Hours: 54 lecture**

Theoretical and practical understanding of the principles of ecology, the complexities of technology and the contemporary problems of the environment on both a local and global level. Lecture/discussion and films in the areas of population, technology, environmental restoration, land use, energy, pollution and world hunger, as well as the basic concepts, economics, politics, poetry, literature and philosophy of ecology. (CSU, UC)

#### ESS 6 THE SIERRA NEVADA

*Formerly known as INT 6*

**Units: 3**

**Advisory: Completion of ENGL A with grade of “C” or better**

**Hours: 54 lecture**

Integrated study of the Sierra Nevada including its physical attributes, geological characteristics, origin and development, flora and fauna, water resources, historical and economic significance and influences on literature, art and culture. Includes contemporary environmental, economic and management issues in the Sierra. (CSU, UC)

#### ESS 7 ENERGY, ENVIRONMENT AND CLIMATE

*Also known as ESCI 7*

**Units: 3**

**Advisory: Eligibility for ENGL 1A**

**Hours: 54 lecture**

Analysis of the nature of Energy and the environmental impact of its societal use in the context of Earth’s record of changing climate. Explores current global climate change due to post-1750 greenhouse gas emissions and current strategies for mitigation and adaptation to changing climate predictions, including future alternative energy sources. (CSU, UC)
ESS 10 CONSERVATION OF NATURAL RESOURCES
Formerly known as AGRI 190 and NATR 10
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Use and protection of natural resources, including soil, water, forest, mineral, plant and animal life, with particular attention to California conditions. Ecological principles, history of the conservation movement, modern problems in resource use and the citizen’s role in conservation. (CSU, UC)

ESS 13 ENVIRONMENTAL REGULATIONS
Formerly known as BIOL 13A
Units: 1
Advisory: Completion of BIOL 14 or ESS 10 with grade of "C" or better
Hours: 18 lecture
Survey of major California environmental regulations plus relevant federal regulations. Designed using case study analyses to explore environmental laws applicable to water, land and air resources. (CSU)

ESS 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

ESS 30 BEGINNING PHOTOVOLTAIC SYSTEMS
Units: 4
Hours: 108 (54 lecture, 54 laboratory)
Introduction to photovoltaic concepts, applications and the solar energy industry. Includes basics of electricity, load estimation, energy efficiency, solar site surveying, photovoltaic system components, sizing, financial analysis, design, installation concepts and maintenance. This course taken with ESS 32 prepares students to sit for the NABCEP PV Entry Level Certificate of Knowledge exam. (CSU)

ESS 32 INTERMEDIATE PHOTOVOLTAIC SYSTEMS
Units: 4
Prerequisite: Completion of ESS 30 with grade of "C" or better
Hours: 108 (54 lecture, 54 laboratory)
Expands on the fundamentals of photovoltaics with a focus on system design and installation concepts of grid-connected residential and small commercial systems. Topics include detailed system sizing, array layout, mounting on various roof constructions, mechanical and electrical integration as well as related electrical codes and workplace safety standards. This course, taken with ESS 30, prepares students to sit for the NABCEP PV Entry Level Certificate of Knowledge exam. (CSU)

ESS 34 ADVANCED PHOTOVOLTAIC SYSTEMS
Units: 4
Prerequisite: Completion of ESS 30 and ESS 32 with grades of "C" or better
Hours: 108 (54 lecture, 54 laboratory)
Third course in the series which examines the theoretical and technical dimensions of photovoltaic (PV) systems in detail. Topics include advanced principles of electricity and how they apply to PV systems, commissioning, troubleshooting, net metering laws, local codes and National Electric Code PV requirements. Off campus activities required. (CSU)

ESS 95 INTERNSHIP IN ENVIRONMENTAL STUDIES AND SUSTAINABILITY
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

ESS 300 SELECTED TOPICS IN ENVIRONMENTAL STUDIES AND SUSTAINABILITY
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)
FASHION

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
LIAISON COUNSELOR: C. Epting-Davis

The Fashion program is designed to provide students with the necessary background for careers in the fashion industry or as a basis for advanced study. An A.S. degree, Certificate of Achievement and two Skills Certificates may be earned.

FASHION INDUSTRIES
A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

The Fashion Industries program is designed to provide students with the necessary background for a variety of careers in the fashion industry or as a basis for advanced study. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Interssegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
FASH 1 Introduction to Fashion ............................ 3
FASH 2 Fashion Analysis and Selection .................... 3
FASH 3 Textiles ........................................ 3
FASH 4A Basic Clothing Construction ..................... 3
FASH 7 Fashion Promotion OR FASH 14 Visual Merchandising ............................ 3
FASH 8 Fashion Illustration ............................... 3
FASH 11 Buying for the Fashion Industry ................ 1
FASH 12 Fashion History OR FASH 15 Clothing and Culture ....................... 3
FASH 16 Fashion Portfolio Development ................ 3
FASH 28 Independent Study OR FASH 95 Internship in Fashion ......................... 3
BUS 120 Introduction to Marketing OR
BUS 123 Retailing ....................................... 3
BUS 140 Small Business Management .................. 3
TOTAL UNITS REQUIRED: 32

FASHION DESIGN
SKILLS CERTIFICATE

Designed to give students basic support knowledge and abilities required to enter the workforce. Focuses on skills relative to the fields of fashion design, fashion consulting, alterations, wardrobe styling and personal shopping. This is a specialty skills certificate designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
FASH 2 Fashion Analysis and Selection ............................ 3
FASH 3 Textiles ........................................ 3
FASH 4A Basic Clothing Construction ..................... 3
FASH 4B Intermediate Clothing Construction ............. 3
FASH 8 Fashion Illustration ............................... 3
TOTAL UNITS REQUIRED: 15

FASHION MERCHANDISING
SKILLS CERTIFICATE

Designed to give students basic support knowledge and abilities required to enter the workforce. Focuses on skills relative to the fields of fashion retail, fashion merchandising, wardrobe styling and personal shopping. This is a specialty skills certificate designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
FASH 1 Introduction to Fashion ............................ 3
FASH 2 Fashion Analysis and Selection .................... 3
FASH 7 Fashion Promotion ............................... 3
FASH 11 Buying for the Fashion Industry ................ 1
FASH 14 Visual Merchandising ............................ 3
BUS 120 Introduction to Marketing OR
BUS 123 Retailing ....................................... 3
BUS 140 Small Business Management .................. 3
TOTAL UNITS REQUIRED: 16

FASHION COURSES »

FASH 1 INTRODUCTION TO FASHION
Units: 3
Hours: 54 lecture
Exploration of the diversity and complexities of the fashion business. Career opportunities and qualifications are studied. The relationship between the fashion world and the public, including sources of fashion, influences on fashion and fashion prediction and promotion, are addressed. (CSU)

FASH 2 FASHION ANALYSIS AND SELECTION
Units: 3
Hours: 54 lecture
Consideration of the psychological, sociological and physical factors which have an impact on dress. Principles of design as they relate to clothing and appearance. Consumer issues related to the selection and use of clothing. (CSU)
FASH 3 TEXTILES
Units: 3
Hours: 54 lecture
Introduction to the study of characteristics and uses of natural and synthetic fibers and fabrics. Emphasizes evaluation and selection of textile products. (CSU, UC)

FASH 4A BASIC CLOTHING CONSTRUCTION
Units: 3
Hours: 108 (27 lecture, 81 laboratory)
Techniques of garment construction; use of commercial patterns, pattern alterations and fitting techniques; comparison of construction techniques and costs between ready-to-wear and custom-made clothing; the social and psychological aspects of clothing selection, with emphasis on basic design principles. (CSU)

FASH 4B INTERMEDIATE CLOTHING CONSTRUCTION
Units: 3
Prerequisite: Completion of FASH 4A with grade of "C" or better
Hours: 108 (27 lecture, 81 laboratory)
Intermediate and advanced techniques of garment construction. Designed for individuals with basic knowledge of sewing principles. Development and improvement of skills in working with designer patterns; techniques of handling specialty fabrics, including knit fabrics; use of sergers. (CSU)

FASH 7 FASHION PROMOTION
Units: 3
Hours: 54 lecture
Emphasis on the role of promotion in the selling and advertising of fashion goods. All avenues of fashion promotion explored and evaluated including: advertising, publicity, special events, fashion show production, direct marketing and target market research. Promotion skills developed through the planning and promotion of special events. (CSU)

FASH 8 FASHION ILLUSTRATION
Units: 3
Hours: 108 (36 lecture, 72 laboratory)
Illustration techniques with emphasis on figure proportions used in the fashion industry. Various media used to communicate fashion and apparel details. SNAP Fashun presented with focus on flat sketch. (CSU)

FASH 11 BUYING FOR THE FASHION INDUSTRY
Units: 1
Hours: 18 lecture
Examines the roles and responsibilities of fashion industry buyers and merchandising managers that must balance the needs of retailers, objectives of vendors and preferences of consumers. The roles of trend forecasting, inventory analysis and assortment planning discussed as they relate to the fashion industry. Introduction to domestic and international fashion markets and market weeks. Prepares students for fashion industry careers as vendors, buyers, or retailers of fashion goods and services. (not transferable)

FASH 12 FASHION HISTORY
Units: 3
Hours: 54 lecture
Fashion and adornment through the ages to the present. Emphasis on the historical flow and how fashion themes are reinterpreted or influence designs in later periods including the present. Provides a basis for understanding and appreciating fashion as well as how the times and environment affect styling, colors, fabric and details. Field trip may be required. (CSU)

FASH 14 VISUAL MERCHANDISING
Units: 3
Hours: 72 (36 lecture, 36 activity)
Introduces contemporary display techniques, equipment and materials for designing three-dimensional product presentations within the retail environment. Emphasis is placed on fashion items and includes the use of mannequins and dress forms. Students complete a window display on campus. Field trips required. (CSU)

FASH 15 CLOTHING AND CULTURE
Units: 3
Hours: 54 lecture
Study of clothing and its relationship to culture, society and the individual. The psychological and sociological influences of dress, the physical aspects of appearance and the influences of gender, sexuality, ethnicity and class on the development of personal identity are explored through the study of style in traditional cultures, popular culture and everyday life. (CSU)

FASH 16 FASHION PORTFOLIO DEVELOPMENT
Units: 3
Prerequisite: Completion of FASH 4A, 7, 8 and 14 with grades of "C" or better
Hours: 72 (36 lecture, 36 activity)
Creation and use of fashion portfolio for college transfer to a four year school and/or job interviews in the fashion industries. Students brand and market themselves highlighting individual skills and strengths. Exploration of different presentation styles includes print and digital material. As a culmination of their studies students present the portfolio in interview format as final project. For advanced students. (not transferable)

FASH 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)
FASHION 95 INTERNSHIP IN FASHION
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

FIRE TECHNOLOGY

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION
DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
AREA OFFICE: Room 205, Roseville Gateway Center, Phone (916) 781-6255
LIAISON COUNSELORS: C. Axton, S. Muraki

The Fire Technology program prepares students for a career in the fire service and provides educational and training opportunities for employed and volunteer firefighters.

The Associate Degree and Certificate programs incorporate the standardized Fire Technology curriculum identified by the offices of the California State Chancellor and State Fire Marshal. Elective courses are those developed under the guidelines of related fire service training and educational programs such as CFSTES (California Fire Service Training and Education System), DOT (Department of Transportation), FEMA (Federal Emergency Management Agency), F.S.T.E.P. (Fire Service Training and Education Program) and NFA (National Fire Academy).

Most Fire Technology courses, up to 30 units, may be transferred to CSU.

FIREFIGHTER I ACADEMY
The Firefighter I Academy is offered through partnerships with the Placer and Nevada County Fire Chiefs’ Associations and The City of Roseville Fire Department. Sierra College is recognized by the California State Fire Marshal and the State Board of Fire Services as an Accredited Regional Training Program.

Students must enroll in FIRE 100, Firefighter I Academy (500 hours) and PHED 200 Fire Academy Physical Training (80 hours). Prerequisites to the Academy require completion of FIRE 1, Fire Protection Organization and HSCI 2, Emergency Medical Technician I.

The Firefighter I Academy is offered in an extended format (evenings and weekend classes), which enables students to maintain employment while preparing for a career in the fire service. The fall Academy is held August through December and in the spring, January through late May or early June. Classes are held Tuesday and Thursday nights and on Saturdays. Classes may also be scheduled on some Friday nights and Sundays. The Physical Training classes meet on Monday and Wednesday nights.

Individuals completing the Academy may apply to the State of California for a Firefighter I Certificate after successfully completing either one year as a volunteer firefighter or six months as a paid firefighter with a California fire department.

Other Certificates of Training awarded upon completion of the Academy include: (subject to change)
- Basic Incident Command System – ICS 200
- Confined Space Awareness
- Hazardous Materials First Responder—Operational (CSTI)
- First Responder Operational—Decontamination (CSTI)
- Fire Control 3
- Fire Control 4A / 4B
- Low Angle Rescue
- RIC-Firefighter Survival
- Vehicle Extrication
- CAL FIRE Basic Wildland Firefighter
- S-130 Basic Wildland Firefighter
- S-190 Beginning Fire Behavior
- Swift Water Rescue Awareness
- L-180 Human Factors in the Wildland Fire Service
- S-134 LCES

Acceptance into the Fire Academy is by an application process, which includes a physical examination. Applications for the Academy are available in April for the fall academy and October for the spring academy.

FIRE OFFICER COURSES
The following Fire Technology courses are part of the State Fire Marshal’s certification track for FIRE OFFICER. These courses are designed for individuals currently employed as professional or volunteer firefighters. Individuals without this experience will be unable to contribute to the educational process and utilize the information in a timely manner.

COURSES UNITS
FIRE 150 Command 1A-Command Principles for Company Officers ................................. 2
FIRE 151 Command 1B-Incident Management for Company Officers ............................. 2
FIRE 152 Fire Command 1C—I-Zone Fire Fighting for Company Officers ..................... 2
FIRE 154 Fire Investigation 1A—Fire Cause, Origin and Determination ........................... 2
FIRE 157 Management and Supervision for Company Officers ...................................... 2
FIRE 159 Fire Prevention 1A—Introduction to the California Fire Code ........................... 2
FIRE 160 Fire Prevention 1B—Fire Protection Systems and Special Hazards .................. 2
FIRE 165 Training Instructor 1A ......................................................................................... 1.5
FIRE 166 Training Instructor 1B ......................................................................................... 1.5
FIRE 242 I-300: Intermediate ICS for Expanding Incidents ............................................. 1
CHIEF OFFICER COURSES

The following Fire Technology courses are part of the State Fire Marshal’s certification track for CHIEF OFFICER and are currently part of Sierra College’s curriculum. These courses are intended for individuals currently employed as professional or volunteer fire officers who hold a Chief Officer position. Individuals without this experience will be unable to contribute to the educational process and utilize the information in a timely manner.

COURSES  UNITS
FIRE 220 Fire Command 2A—Command Tactics at Major Fires  2
FIRE 221 Fire Command 2B—Management of Major Haz-Mat Incidents  2
FIRE 222 Fire Command 2C—High Rise Fire Tactics  2
FIRE 223 Fire Command 2D—Planning for Large-Scale Disasters  2
FIRE 224 Fire Command 2E—Wildland Fire Tactics  2

FIRE TECHNOLOGY
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES  UNITS
FIRE 1 Fire Protection Organization  3
FIRE 3 Fire Behavior and Combustion  3
FIRE 4 Fire Protection Equipment and Systems  3
FIRE 5 Fire Prevention Technology  3
FIRE 8 Building Construction for Fire Protection  3
FIRE 10 Principles of Fire and Emergency Services Safety and Survival  3

PLUS 12 ADDITIONAL UNITS FROM:
FIRE 7 Fundamentals of Fire Service Operations  3
FIRE 50 Basic Firefighter Training  3
FIRE 73 Fire Hydraulics  3
FIRE 74 Fire Apparatus and Equipment  3
FIRE 75 Wildland Fire Control  3
FIRE 77 Public Education I  2
FIRE 95 Internship in Fire Technology  5-4
FIRE 100 Firefighter I Academy  17.5
FIRE 150 Command 1A-Command Principles for Company Officers  2
FIRE 151 Command 1B-Incident Management for Company Officers  2
FIRE 152 Fire Command 1C—I-Zone Fire Fighting for Company Officers  2
FIRE 153 Fire Prevention 1A—Introduction to the California Fire Code  2
FIRE 154 Fire Investigation 1A—Fire Cause, Origin and Determination  2
FIRE 155 Fire Investigation 1B—Techniques of Fire Investigation  2
FIRE 157 Management and Supervision for Company Officers  2
FIRE 159 Fire Prevention 1A—Introduction to the California Fire Code  2
FIRE 160 Fire Prevention 1B—Fire Protection Systems and Special Hazards  2
FIRE 165 Training Instructor 1A  1.5
FIRE 166 Training Instructor 1B  1.5
FIRE 167 Training Instructor 1C  1.5
FIRE 220 Fire Command 2A—Command Tactics at Major Fires  2
FIRE 221 Fire Command 2B—Management of Major Haz-Mat Incidents  2
FIRE 222 Fire Command 2C—High Rise Fire Tactics  2
FIRE 223 Fire Command 2D—Planning for Large-Scale Disasters  2
FIRE 224 Fire Command 2E—Wildland Fire Tactics  2
FIRE 241 I-200: Incident Command System  .5
FIRE 242 I-300: Intermediate ICS for Expanding Incidents  1
FIRE 243 I-400: Advanced ICS for Complex Incidents  .5
FIRE 262 Fire Investigation 2A: Criminal and Legal Procedures  1
FIRE 263 Fire Investigation 2B: Field Case Studies  1

TOTAL UNITS REQUIRED: 30

FIRE TECHNOLOGY COURSES »

FIRE 1 FIRE PROTECTION ORGANIZATION
Units: 3
Hours: 54 lecture
Introduction to the fire service and fire protection. Topics include career opportunities, philosophy and history of the fire service, fire loss analysis, organization and function of public and private fire protection services, fire departments as part of local government, laws and regulations affecting the fire service, fire service nomenclature, basic fire chemistry and physics, introduction to fire protection systems, introduction to tactics and strategy, incident command system and National Incident Management System. (CSU—with unit limitation)

FIRE 3 FIRE BEHAVIOR AND COMBUSTION
Units: 3
Advisory: Completion with grade of “C” or better or concurrent enrollment in FIRE 1
Hours: 54 lecture
Theory and fundamentals of how and why fires start, spread and are controlled; an in-depth study of fire chemistry and physics, fire characteristics of materials, extinguishing agents and fire control techniques. (CSU—with unit limitation)
FIRE 4 FIRE PROTECTION EQUIPMENT AND SYSTEMS  
Units: 3  
Advisory: Completion of or concurrent enrollment in FIRE 1  
Hours: 54 lecture  
Design, operation, maintenance and inspection of automatic fire sprinkler systems, standpipes, water supply systems, special fire protection systems, smoke management systems and portable fire extinguishers in accordance with local, state and national guidelines. (CSU–with unit limitation)

FIRE 5 FIRE PREVENTION TECHNOLOGY  
Units: 3  
Advisory: Completion of or concurrent enrollment in FIRE 1  
Hours: 54 lecture  
History and philosophy of fire prevention technology, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards and the relationship of fire prevention with fire safety education and detection and suppression systems. (CSU–with unit limitation)

FIRE 7 FUNDAMENTALS OF FIRE SERVICE OPERATIONS  
Units: 3  
Advisory: Completion with grade of “C” or better or concurrent enrollment in FIRE 1  
Hours: 54 lecture  
Fundamentals of fire department organization, management and resources and the use of those resources to control various emergencies. Includes safety, operational considerations, evaluation of tactics and strategies with a focus on making behavioral changes for positive outcomes. (CSU–with unit limitation)

FIRE 8 BUILDING CONSTRUCTION FOR FIRE PROTECTION  
Units: 3  
Advisory: Completion with grade of “C” or better or concurrent enrollment in FIRE 1  
Hours: 54 lecture  
Basic principles of building construction and how it relates to fire and life safety. Focal points include building history, codes, design process, occupancy types, construction types, components, inspection process relating to preplanning, safety, collapse, expected fire behavior with different building types and materials and fire ground operations. (CSU–with unit limitation)

FIRE 10 PRINCIPLES OF FIRE AND EMERGENCY SERVICES SAFETY AND SURVIVAL  
Units: 3  
Hours: 54 lecture  
Introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavioral change throughout the emergency services. Includes the history of fire service culture; the national context of health and safety; training, equipment and emergency response; organizational health and safety profile; risk management; and public education for fire prevention. (CSU–with unit limitation)

FIRE 28 INDEPENDENT STUDY  
Units: 1-3  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU–with unit limitation)

FIRE 50 BASIC FIREFIGHTER TRAINING  
Units: 3  
Hours: 61 (54 lecture, 7 laboratory)  
Training in proper techniques to effectively and safely perform as a member of a fire crew in controlling and suppressing wildfire. Includes physics of fire behavior, complexities and inter-relationships of weather, topography and wildland fuel beds in fire behavior, Incident Management Organization, personal safety, situational awareness and hazard recognition. Meets NWCG S-130, S-190, S-134, L-180 & I-100 requirements. (CSU–with unit limitation)

FIRE 73 FIRE HYDRAULICS  
Units: 3  
Hours: 54 lecture  
Investigate the principles and characteristics of water and water flow, water supply systems, fire apparatus and pumps and fire streams. Review of applied mathematics; hydraulic laws; and application of formulas and mental calculation to hydraulics and water supply problems, as applied to the fire service. (CSU–with unit limitation)

FIRE 74 FIRE APPARATUS AND EQUIPMENT  
Units: 3  
Hours: 54 lecture  
Principles and techniques for maintaining and operating fire service pumping and other mobile apparatus. Fire service equipment and apparatus troubleshooting; principles and techniques of preventive maintenance; construction and operation of fire service pumps and pump accessories; basic highway operating techniques for fire apparatus; fire apparatus specifications and testing procedures. (CSU–with unit limitation)

FIRE 75 WILDLAND FIRE CONTROL  
Units: 3  
Hours: 54 lecture  
Principles and techniques of wildland fire prevention, behavior, control and suppression. Covers legal areas of wildland fire protection, mutual aid, fire investigating and reporting methods and ecology factors of wildland and urban interface fires. Complies with S-190, Basic Wildland Fire Behavior certification. (CSU–with unit limitation)
FIRE 77 PUBLIC EDUCATION I
Units: 2
Hours: 40 lecture
Systematic planning process for public education; communication skills; program evaluation; working with the media; integrating programs into schools; gaining community support; fire safety for children; interviewing and counseling juvenile fire setters; creating and using audio/visual resources and idea and resource sharing. (not transferable)

FIRE 95 INTERNSHIP IN FIRE TECHNOLOGY
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

FIRE 100 FIREFIGHTER I ACADEMY
Units: 17.5
Prerequisite: Completion of FIRE 1 with grade of "C" or better, possession of a current Emergency Medical Technician certificate and submission of a physician's physical verification, including a spirometry test
Corequisite: concurrent enrollment in PHED 200
Hours: 500 (230 lecture, 270 laboratory)
Designed for entry level firefighters. Approved by the CA State Board of Fire Services and Fire Marshal's Office. When combined with a specified experience component leads to state certification as a Firefighter I. Includes: fire behavior, control techniques, ground operations, hazardous materials, incident command system, confined space awareness, auto extrication, salvage operations and wildland fire behavior/control. Certificate of Completion issued with grade of "C" or better in both FIRE 100 and PHED 200. Physically demanding program. Materials fee required. (not transferable)

FIRE 150 COMMAND 1A-COMMAND PRINCIPLES FOR COMPANY OFFICERS
Units: 2
Prerequisite: Completion of FIRE 241 with grade of "C" or better or completion of a certified I-200 Incident Command System course
Hours: 40 lecture
Initial decision and action processes at a working fire: includes function of command, fire chemistry, fire behavior, pre-fire planning, fireground safety, resources, operations and management. (CSU–with unit limitation)

FIRE 151 COMMAND 1B-INCIDENT MANAGEMENT FOR COMPANY OFFICERS
Units: 2
Prerequisite: Completion of FIRE 150 with grade of "C" or better or completion of a State Fire Marshal certified Fire Command 1A class
Hours: 40 lecture
Responsibilities of the “first-in” officer at incidents involving multiple casualties, hazardous materials and wildland fires. Through the use of simulations, emphasis on the development of management and decision-making practices required for successful scene management. (CSU–with unit limitation)

FIRE 152 FIRE COMMAND 1C—I-ZONE FIRE FIGHTING FOR COMPANY OFFICERS
Units: 2
Prerequisite: Completion of FIRE 150 with grade of "C" or better or completion of a State Fire Marshal certified Fire Command 1A class
Hours: 40 lecture
Designed around the responsibilities of the company officer at a wildland/urban interface incident. Emphasis on fire environment, incident command system, I-zone operation principles, safety and survival and I-zone incident operations. Meets established federal and state training guidelines. (CSU–with unit limitation)

FIRE 154 FIRE INVESTIGATION 1A—FIRE CAUSE, ORIGIN AND DETERMINATION
Formerly known as FIRE 62
Units: 2
Hours: 40 lecture
Develop skills to determine the origin and cause of fire, its human and environmental effects and develop interpersonal skills needed to successfully investigate, apprehend and convict an arsonist. (CSU–with unit limitation)

FIRE 155 FIRE INVESTIGATION 1B—TECHNIQUES OF FIRE INVESTIGATION
Units: 2
Prerequisite: Completion of FIRE 154 with grade of "C" or better or completion of an approved Fire Investigation 1A class
Hours: 40 lecture
Investigation of fire behavior; building construction; techniques required for incendiary, accidental, fatal, vehicle, wildland and juvenile fire investigations; report writing; and evidence collection and preservation procedures. (CSU–with unit limitation)
FIRE 157 MANAGEMENT AND SUPERVISION FOR COMPANY OFFICERS
Formerly known as FIRE 64
Units: 2
Hours: 40 lecture
Concepts of supervision and management for company officers, organizational structure, problem solving and decision making, communication, group dynamics, performance evaluations, counseling, legal aspects of supervision, managing change, time management, leadership qualities and traits. (CSU—with unit limitation)

FIRE 158 FIRE PREVENTION 1–FIRE PREVENTION FOR THE COMPANY OFFICER
Units: 1.5
Hours: 32 lecture
Fire prevention fundamentals for developing fire prevention techniques at the company officer level: the student will learn basic fire code, construction, occupancy types, fire and life safety, conducting inspections, recording inspection reports and communicating deficiencies and violations to obtain proper correction or mitigation. This course is intended for working firefighters. (CSU—with unit limitation)

FIRE 159 FIRE PREVENTION 1A—INTRODUCTION TO THE CALIFORNIA FIRE CODE
Formerly known as FIRE 65
Units: 2
Hours: 40 lecture
A broad technical overview of fire prevention codes and ordinances, inspection practices, extinguishing systems and key hazards including flammable and combustible liquids and gases, explosives and fireworks. (CSU—with unit limitation)

FIRE 160 FIRE PREVENTION 1B—FIRE PROTECTION SYSTEMS AND SPECIAL HAZARDS
Formerly known as FIRE 66
Units: 2
Prerequisite: Completion of FIRE 159 with grade of “C” or better or completion of State Fire Marshal certified Fire Prevention 1A course
Hours: 40 lecture
Focuses on the codes, ordinances and statutes that pertain to fire prevention practices in California, including flammable and combustible liquids and gases, hazardous materials and explosives, fire extinguishers, fire suppression systems and detection and alarm systems. (CSU—with unit limitation)

FIRE 165 TRAINING INSTRUCTOR 1A
Formerly known as FIRE 164
Units: 1.5
Hours: 40 (24 lecture, 16 laboratory)
Methods and techniques for training in accordance with the latest concepts in career education: selecting, adapting, organizing and using instructional materials appropriate for teaching cognitive lessons; criteria and methods to evaluate teaching and learning efficiency; apply major principles of learning through teaching demonstrations. (CSU—with unit limitation)

FIRE 166 TRAINING INSTRUCTOR 1B
Formerly known as FIRE 163
Units: 1.5
Prerequisite: Completion of FIRE 165 with grade of “C” or better or successful completion of State Fire Marshal Training Instructor 1A course
Hours: 40 (24 lecture, 16 laboratory)
Methods and techniques for training in accordance with the latest concepts in career education; selecting, adapting, organizing and using instructional materials appropriate for teaching psychomotor lessons; criteria and methods to evaluate teaching and learning efficiency; apply major principles of learning through teaching demonstrations. (CSU—with unit limitation)

FIRE 167 TRAINING INSTRUCTOR 1C
Units: 1.5
Prerequisite: Completion of FIRE 166 with grade of “C” or better or successful completion of State Fire Marshal Training Instructor 1B course
Hours: 40 (24 lecture, 16 laboratory)
The third of a three-course series. Topics include methods and techniques for developing lesson plans, ancillary components and tests in accordance with the latest concepts in career education. Offers the opportunity to develop, receive feedback and finalize instructional materials and deliver a teaching demonstration. (CSU—with unit limitation)

FIRE 220 FIRE COMMAND 2A—COMMAND TACTICS AT MAJOR FIRES
Units: 2
Prerequisite: Completion of FIRE 150 and 242 with grades of “C” or better
Hours: 40 lecture
Emphasis on the latest emergency management techniques, efficient utilization of resources and implementation of fireground safety principles when commanding multiple alarms or large suppression forces. (not transferable)
FIRE 221 FIRE COMMAND 2B—MANAGEMENT OF MAJOR HAZ-MAT INCIDENTS
Units: 2
Prerequisite: Completion of FIRE 151, 220 and 242 with grades of "C" or better
Hours: 40 lecture
Provides Incident Commanders with the skills and competency necessary to mitigate an incident, initiate remedial action and ensure the restoration of normal services with a comprehensive resource management approach. Students participate in simulated incident scenarios and mock civil court settings. (not transferable)

FIRE 222 FIRE COMMAND 2C—HIGH RISE FIRE TACTICS
Units: 2
Prerequisite: Completion of FIRE 220 and 242, or completion of the equivalent California State Fire Marshal courses
Hours: 40 lecture
Prepares individuals to mitigate high rise fire incidents. Includes occupant life safety in a high rise building, building design, fire protection systems, water systems, high rise incident command system, tactics and strategy, communications, training and firefighter safety and survival. (not transferable)

FIRE 223 FIRE COMMAND 2D—PLANNING FOR LARGE-SCALE DISASTERS
Units: 2
Prerequisite: Completion of FIRE 220 and 242 with grades of "C" or better
Hours: 40 lecture
Emphasis on principles of disaster planning and management, fire service emergency plans, emergency operations centers, roles of local, state and federal OES and emergency management agencies, multi-hazard and ICS planning techniques. Case study analysis of natural and man-made disasters. (not transferable)

FIRE 224 FIRE COMMAND 2E—WILDLAND FIRE TACTICS
Units: 2
Prerequisite: Completion of FIRE 152, 220 and 242 with grades of "C" or better, or completion of the equivalent California State Fire Marshal courses
Hours: 40 lecture
Designed for Chief Officers having command responsibilities at wildland fires. Emphasizes fire safety, weather effects, fuels, fire behavior, initial attack methods, support equipment, topographic maps, air attack operations, strategy and tactics. (not transferable)

FIRE 241 I-200: INCIDENT COMMAND SYSTEM
Units: 0.5
Hours: 12 lecture
Introduction to Incident Command System (ICS) National Training curriculum. Includes principles and features, organization overview, incident facilities, resources and common responsibilities. ICS 200 certification is the minimum requirement for attending ICS 200 level courses and functioning in a Unit Leader position during an incident. (not transferable)
FIRE 608 BASIC STRUCTURAL FIREFIGHTER  
*Units: 4.5*  
*Hours: 150 (55 lecture, 95 laboratory)*  
Entry-level course for volunteer firefighters. Topics include fire behavior, safety, personal protective equipment, forcible entry, rescue, ground ladders, hoses, fire streams and nozzles and fire control principles. (pass/no pass grading) (not degree applicable)

FIRE 610 SWIFT WATER RESCUE AWARENESS  
*Units: 0.5*  
*Hours: 9 lecture*  
A basic swift water rescue course for emergency services. Includes water rescue environments and hazards, legal obligations, site safety, water rescue equipment, hydrology and swift water hazards and low- to high-risk rescue options. (pass/no pass grading) (not degree applicable)

FIRE 618 FIREFIGHTER BASIC  
*Units: 4.5*  
*Hours: 150 (55 lecture, 95 laboratory)*  
Entry-level course for volunteer firefighters. Topics include fire behavior, safety, personal protective equipment, forcible entry, rescue, ground ladders, hoses, fire streams and nozzles and fire control principles. (pass/no pass grading) (not degree applicable)

FIRE 621 WILDLAND CHAIN SAW TECHNIQUES  
*Units: 1*  
*Hours: 24 (16 lecture, 8 laboratory)*  
Chain saw operations emphasizing tree terminology, safety aspects, state/federal requirements, recognizing and handling hazards, felling and bucking procedures, brushing and fire lines. (pass/no pass grading) (not degree applicable)

FIRE 624 CAL FIRE BASIC WILDLAND FIREFIGHTER TRAINING  
*Units: 3.5*  
*Hours: 80 (58 lecture, 22 laboratory)*  
Basic firefighting course covering fire physics, vegetation fire terminology, general safety, self-contained breathing apparatus, fireline safety, aircraft safety, mobile equipment, fire equipment and wildland and structure firefighting. Meets minimum training requirements for CAL FIRE Firefighter I personnel. (pass/no pass grading) (not degree applicable)

FIRE 630 IN-SERVICE TRAINING  
*Units: 0.5-3*  
*Prerequisite: FIRE 100 or equivalent fire academy course*  
*Hours: 54 laboratory per unit*  
Satisfies standards for in-service training for fire service personnel in areas of knowledge, techniques and perishable skills. Includes administrative issues, engine and truck operations, fire control, emergency medical services, hazardous materials, rescues, command and control, fire prevention, pre-fire planning, specialized equipment and wellness and fitness. May be repeated for credit to meet legally mandated education/training requirements. (pass/no pass grading) (not degree applicable)

FIRE 632 AUTO EXTRICATION  
*Units: 0.5*  
*Hours: 16 (8 lecture, 8 laboratory)*  
Essentials of scene evaluation and extrication size up, types of tools and their application, how to remove windows, doors, roofs and safely perform extrications from vehicles with various passenger restraint systems. May be repeated to meet legally mandated requirements. (pass/no pass grading) (not degree applicable)

FIRE 634 DRIVER OPERATOR 1A-EMERGENCY VEHICLE OPERATION  
*Units: 1.5*  
*Prerequisite: California Driver License, Class B, Firefighter Restricted (minimum)*  
*Hours: 40 (25 lecture, 15 laboratory)*  
Designed to provide the student with information on driver techniques for emergency vehicles and techniques of basic inspection and maintenance for emergency vehicles. (pass/no pass grading) (not degree applicable)

FIRE 635 DRIVER/OPERATOR 1B—PUMP OPERATIONS  
*Units: 1.5*  
*Prerequisite: California Driver License, Class B, Firefighter Restricted (minimum)*  
*Hours: 40 (25 lecture, 15 laboratory)*  
Provides information, theory, methods and techniques for operating fire service pumps. Subjects include types of pumps, engine and pump gauges, maintenance, unsafe pumping conditions, pressure conditions, pressure relief devices, cooling systems, water supplies, drafting, field hydraulics and pumping operations. (pass/no pass grading) (not degree applicable)

FIRE 637 CONFINED SPACE AWARENESS  
*Units: 0.5*  
*Hours: 9 lecture*  
Instruction in identifying a permit and non-permit required confined space, the hazards associated with confined spaces, target industries and hazards, state regulations, communications and equipment requirements. This course does not qualify participants to make permit required entries. (pass/no pass grading) (not degree applicable)

FIRE 638 LOW ANGLE ROPE RESCUE OPERATIONAL  
*Units: 0.5*  
*Hours: 24 (8 lecture, 16 laboratory)*  
Designed to equip the student with the techniques and methods for using rope, webbing, hardware friction devices and litters in low angle rescue situations. Areas covered include rope and related equipment, anchor systems, safety lines, stretcher lashing and rigging, mechanical advantage systems and single and two line rescue systems. (pass/no pass grading) (not degree applicable)
FIRE 639 ETHICAL LEADERSHIP IN THE CLASSROOM  
Units: 0.5  
Hours: 9 lecture  
An examination of fundamental ethical values of fire service instructors by exploring examples of ethical behavior in the classroom environment. Includes basic concepts, terms and theories of ethical decision making, code of ethics and concepts in ethical leadership. (pass/no pass grading) (not degree applicable)

FIRE 640 HAZARDOUS MATERIALS TECHNICIAN 1A, BASIC CHEMISTRY  
Units: 2  
Prerequisite: Completion of FIRE 41 with grade of “C” or better or approved Federal/State equivalent course  
Hours: 40 lecture  
Basic aspects of chemistry and physics related to management of a hazardous materials incident. Covers physical and chemical properties of matter, atomic structure, periodic table, metals and non-metals, salts, hydrocarbons and derivatives, forms of energy, the combustion process, flammable and combustible liquids. Meets standards prescribed by the CA State Fire Marshal and Office of Emergency Services. (pass/no pass grading) (not degree applicable)

FIRE 641 HAZARDOUS MATERIALS TECHNICIAN 1B, APPLIED CHEMISTRY  
Units: 1.5  
Prerequisite: Completion of FIRE 640 with grade of “C” or better or approved Federal/State equivalent course(s)  
Hours: 40 (24 lecture, 16 laboratory)  
Basic terminology and theory of chemistry as it relates to hazardous materials. Covers chemical aspects of the hazard classes, toxicology, including hazard and risk assessment, function and use of detection instruments, monitoring hazardous atmospheres and use of a field identification kit to identify unknown solids and liquids. Meets standards prescribed by the CA State Fire Marshal and Office of Emergency Services. (pass/no pass grading) (not degree applicable)

FIRE 642 HAZARDOUS MATERIALS TECHNICIAN 1C, INCIDENT CONSIDERATIONS  
Units: 1.5  
Prerequisite: Completion of FIRE 641 with grade of “C” or better or approved Federal/State equivalent course(s)  
Hours: 40 (26 lecture, 14 laboratory)  
Hazardous materials on-scene incident considerations. Covers data research, meteorological considerations, protective actions, personal protective equipment, incident command aspects, site safety concepts, legislative and regulatory measures influencing emergency response and contingency planning. Meets standards prescribed by the CA State Fire Marshal and Office of Emergency Services. (pass/no pass grading) (not degree applicable)

FIRE 643 HAZARDOUS MATERIALS TECHNICIAN 1D, TACTICAL FIELD OPERATIONS  
Units: 1.5  
Prerequisite: Completion of FIRE 642 with grade of “C” or better or approved Federal/State equivalent course(s)  
Hours: 40 (24 lecture, 16 laboratory)  
Experience with tactical field operations. Covers confinement, control, hazmat triage and sabotage, performing in chemical protective clothing, preservation of evidence, decontamination and emergency medical system considerations. Meets standards prescribed by the CA State Fire Marshal and Office of Emergency Services. (pass/no pass grading) (not degree applicable)

FIRE 644 HAZARDOUS MATERIALS SPECIALIST 1F  
Units: 1.5  
Prerequisite: Completion of FIRE 643 with grade of “C” or better or approved Federal/State equivalent course(s)  
Hours: 40 (32 lecture, 8 laboratory)  
Introduction to mitigation techniques. Includes plugging, patching and repairing methods; advanced chemical field identification testing procedures and fixed facility repair considerations. Part one of a two part series leading to certification as a Hazardous Materials Specialist. Meets requirements of CA Code of Regulations Title 8, Section 519(q). (pass/no pass grading) (not degree applicable)

FIRE 645 HAZARDOUS MATERIALS SPECIALIST 1G  
Units: 1  
Prerequisite: Completion of FIRE 644 with grade of “C” or better or approved federal/state equivalent course(s)  
Hours: 40 (16 lecture, 24 laboratory)  
Covers material presented in Hazardous Materials Courses 1A-1F in an environment of scenario based full scale exercises. Participants evaluated for their ability to perform and be certified as a member of a Hazardous Materials Team. (pass/no pass grading) (not degree applicable)

FIRE 650 RESCUE SYSTEMS I  
Units: 1.5  
Prerequisite: Completion of FIRE 638 with grade of “C” or better or completion of a State Fire Marshal approved Low Angle Rope Rescue Operational course  
Hours: 40 (21 lecture, 19 laboratory)  
Rescue systems, ropes and related equipment, heavy object operations, breaking and breaching operations, ladder rescues and emergency shoring. Required for CA Urban Search and Rescue basic and light operational level training. (pass/no pass grading) (not degree applicable)
FIRE 655 RIC-FIREFIGHTER SURVIVAL
Units: 0.5
Prerequisite: Completion of FIRE 100 with grade of “C” or better or equivalent CA State Fire Marshal training; and assignment to participate by a fire agency
Hours: 16 (6 lecture, 10 laboratory)
A safety course for structural firefighters teaching them how to avoid committing fatal errors on the fireground. Covers firefighter survival terminology, developing a survival attitude, increasing situational awareness and problem solving techniques in emergency situations. Case studies are reviewed to identify commonalities in line-of-duty-deaths (LODD). (pass/no pass grading) (not degree applicable)

FRENCH

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: L. Lambert
LIAISON COUNSELOR: D. Quadros

The active part that the United States is now taking in world affairs makes it desirable that a greater number of Americans than ever before have knowledge of foreign languages and cultures. A language background should be of intrinsic value. The acquisition of desired practical communication skills in the study of modern foreign language is the primary objective. This can be accomplished by the oral approach, motivated by lectures and implemented by the language laboratory.

TRANSFER MAJOR REQUIREMENTS in Foreign Language are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Four-year graduates in Foreign Language are qualified for positions in teaching, business, foreign services, law enforcement, nursing, secretarial and diplomatic services.

FRENCH COURSES »

FREN 1 ELEMENTARY FRENCH—LEVEL I
Units: 4
Hours: 72 lecture
Listening, speaking, reading and writing in French. Fundamentals of French pronunciation and grammar. Introduction to the culture of the French-speaking people. Corresponds to two years of high school study. (CSU, UC)

FREN 2 ELEMENTARY FRENCH—LEVEL II
Units: 4
Prerequisite: Completion of FREN 1 or two years of high school French with grade(s) of “C” or better
Hours: 72 lecture
Continuation of FREN 1 with greater emphasis on speaking and writing. Explores culture, historical figures and events of the areas where French is spoken. (CSU, UC)

FREN 3 INTERMEDIATE FRENCH—LEVEL I
Units: 4
Prerequisite: Completion of FREN 2 or three years of high school French with grade(s) of “C” or better
Hours: 72 lecture
Designed for those who have had previous training in the French language. Review of grammar with increased emphasis upon speaking and linguistic structure of the language, reading of excerpts from works of French-speaking authors, study of cultural distinctions among the French-speaking peoples and writing at the intermediate level. (CSU, UC)

FREN 4 INTERMEDIATE FRENCH—LEVEL II
Units: 4
Prerequisite: Completion of FREN 3 or four years of high school French with grade(s) of “C” or better
Hours: 72 lecture
Designed for those who have had previous training in the French language. Study of advanced grammar with increased emphasis upon the skills of reading and interpreting works of French literature. Greater focus upon writing and speaking skills. (CSU, UC)

FREN 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

FREN 300 SELECTED TOPICS IN FRENCH
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

FREN 300F CULTURE AND CIVILIZATION OF FRANCE
Units: 3
Hours: 54 lecture
The history, geography, social institutions, literature, art, architecture and music of France from their beginnings to modern times. Conducted in English. (CSU, UC)
GEOGRAPHY COURSES

GEOG 1 PHYSICAL GEOGRAPHY
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Study of earth's landforms, spatial location and processes including the atmosphere, its weather, climate regions, the hydrosphere; oceans, clouds, rivers; the biosphere and the solid earth, its landforms and the forces that shape them. (CSU, UC)

GEOG 1L PHYSICAL GEOGRAPHY LABORATORY
Units: 1
Prerequisite: Concurrent enrollment in or completion of GEOG 1 with grade of "C" or better
Hours: 54 laboratory
Earth's physical systems, atmosphere, weather and climate, landforms and fluvial systems; includes map reading and investigating remote sensing, GPS and Geographic Information Systems (GIS). (CSU, UC)

GEOG 2 CULTURAL GEOGRAPHY
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Diverse patterns of cultural development including population, religion, languages, political systems and other societal characteristics. Analysis of spatial differences of cultures including housing types, city planning, agricultural techniques and popular and folk customs. Investigation of humans as the primary modifier of the physical landscape within the limits of the earth's resources. (C–ID GEOG 120) (CSU, UC)

GEOG 3 GEOGRAPHY OF CALIFORNIA
Units: 3
Advisory: Eligibility for ENGL 11
Hours: 54 lecture
An introduction to California's diversified geography including climate, landforms, natural vegetation and water resources, the cultural landscapes of ethnic diversity, our Native American past, urban and agricultural regions and the economic challenges of the future. Emphasis on cultural diversity, human alteration of the landscape, contemporary problems and resource competition. (CSU, UC)

GEOG 4 WEATHER AND CLIMATE
Units: 3
Advisory: Eligibility for ENGL 11
Hours: 54 lecture
The elements and controls of weather and climate—atmospheric heating, the heat budget, air circulation and winds, moisture, clouds and precipitation; world climates, their elements and classifications; climate variations and changes. (CSU, UC)

GEOG 90 Introduction to Geographic Information Systems (GIS)
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Study of earth's landforms, spatial location and processes including the atmosphere, its weather, climate regions, the hydrosphere; oceans, clouds, rivers; the biosphere and the solid earth, its landforms and the forces that shape them. (CSU, UC)

The Geography Department offers transfer courses to four-year colleges in diverse academic disciplines such as Geography, Geographic Information Systems (GIS), Earth Science, Environmental Science, Meteorology, Climatology, Natural Resource Management, Tourism and Recreation, Urban Planning, International Studies, Anthropology and related social sciences. Emphasis in advancing geographic literacy, global awareness and sustainability in the fields of physical and human geography; field study classes provide experiential and interpretive training. Additional technical courses provide expertise in the exciting and fast-growing field of GIS and GeoSpatial technologies. A skills certificate is offered in GIS.

GEOPHYSIC INFORMATION SYSTEMS (GIS) SKILLS CERTIFICATE
Designed for students to gain a solid foundation in GIS theory and related technologies, such as GPS and remote sensing. Sequence of courses builds upon each other to provide hands-on technical skills demanded of the professional workforce, culminating with a professional map portfolio and repertoire of spatial analysis skills. Opportunities for interns and entry-level positions are abundant, provided students learn industry-standard software, GPS skills, database management and mapping design. Students must choose from additional courses, such as computer-aided design (CAD), database management, computer programming, surveying, spatial analysis and are encouraged to participate in an internship. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 86 Global Positioning System (GPS) For GIS</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 90 Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 92 Intermediate GIS</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 93 Advanced GIS</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 ADDITIONAL UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 90 Database Management</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 12 Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 52 Introduction to SQL</td>
<td>3</td>
</tr>
<tr>
<td>DES 5 Computer-Aided Drafting IA</td>
<td>3</td>
</tr>
<tr>
<td>DES 6 Computer-Aided Drafting IB</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 10 Engineering Survey Measurements</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 85 Application of GIS and Related Technologies</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 91B Intermediate Arc GIS Software</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 94 Geospatial Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 95 Internship in Geography</td>
<td>1-3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 16
**GEOG 5 WORLD REGIONAL GEOGRAPHY**  
*Units: 3*  
*Advisory: Eligibility for ENGL 11*  
*Hours: 54 lecture*  
An introduction to the world’s major geographic regions; their cultural practices, politics, economics, religions, history and environmental characteristics. Location and analysis of important geographic features including mountains, rivers, countries and major cities of Asia, Australia, Africa, North America, Europe and South America. (C–ID GEOG 125) (CSU, UC)

**GEOG 11 URBAN GEOGRAPHY OF SAN FRANCISCO**  
*Units: 1*  
*Hours: 30 (12 lecture, 18 laboratory)*  
Exploration of the cultural, economic and urban geography of San Francisco. This field course provides an introduction to the area’s diversified geography including its location, ethnic diversity, urban settlement patterns and an overview of historical and economic regions. Students may be required to walk moderate distances. Additional fees may be required. (C–ID GEOG 160) (CSU)

**GEOG 12 HISTORICAL GEOGRAPHY OF NORTHERN CALIFORNIA COMMUNITIES**  
*Units: 1*  
*Hours: 30 (12 lecture, 18 laboratory)*  
This field course explores cultural and historical geography of Northern California communities. Introduction to Northern California’s diversified geography including physical landforms, economic diversity, settlement patterns and history of the Northern California communities. (C–ID GEOG 160) (CSU)

**GEOG 14 FIELD GEOGRAPHY OF YOSEMITE AND THE EASTERN SIERRA**  
*Units: 2*  
*Hours: 54 (27 lecture, 27 laboratory)*  
Examination of physical and cultural geography of Yosemite Valley/the Eastern Sierra. This field course emphasizes fluvial and glacial landforms, geological patterns, weather and climate regions and the distribution of water resources. Cultural geographies include patterns of Native American and early pioneer settlements, current land use and economic activities. May involve light hiking. Additional fees may be required. (C–ID GEOG 160) (CSU)

**GEOG 15 FIELD GEOGRAPHY OF NORTHERN CALIFORNIA**  
*Units: 0.5*  
*Hours: 13 (7 lecture, 6 laboratory)*  
Investigation of cultural and physical geography of a region in Northern California. This field course provides an introduction to the area’s diversified geography including its location, physical landforms, economic diversity, urban settlement patterns and an overview of historical and cultural regions. Topical emphasis will vary from class to class. May involve light hiking. Additional fees may be required. (CSU)

**GEOG 16 FIELD GEOGRAPHY**  
*Units: 1-2*  
*Hours: 30 (12 lecture, 18 laboratory) per unit*  
Field lecture courses to regions of geographic interest to include physical, cultural, urban and/or historical elements. (CSU)

**GEOG 28 INDEPENDENT STUDY**  
*Units: 1-3*  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

**GEOG 85 APPLICATION OF GIS AND RELATED TECHNOLOGIES**  
*Units: 1*  
*Hours: 18 lecture*  
Investigation of GIS case studies used in government and industry; explores how all industries use GIS with emphasis on natural resource management and watershed analysis. Additional focus on remote sensing and aerial photography. Hands-on experience using Global Positioning Systems (GPS) technology. (CSU)

**GEOG 86 GLOBAL POSITIONING SYSTEM (GPS) FOR GIS**  
*Units: 1*  
*Hours: 18 lecture*  
Theory and hands-on training to integrate the Global Positioning System (GPS) into the Geographic Information System (GIS) for mapping purposes. Use of both amateur and professional Trimble GPS units. Focus on GPS technology, remotely-sensed imagery, the GIS, data dictionaries and mapmaking based upon field collected data. Analysis of case studies. Student project to collect and integrate the GPS with the GIS. (CSU)

**GEOG 90 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (GIS)**  
*Units: 3*  
*Hours: 54 lecture*  
Interdisciplinary course to introduce theoretical background of Geographic Information Systems (GIS). Explores how GIS solves spatial problems, such as those in natural resources, earth and life sciences, environmental planning, local government, business and marketing, transportation and other fields. (CSU)

**GEOG 91A BEGINNING ARC GIS SOFTWARE**  
*Also known as CIS 87 and ESCI 91A*  
*Units: 1*  
*Hours: 18 lecture*  
Introduction to Geographic Information Systems (GIS) mapping software used to manage, analyze and display spatial information. Create reports and map layouts, query geographic databases and solve spatial problems. Emphasis on using GIS software for practical applications in the fields of natural resource management, disaster mapping, cartographic design, urban planning, business and other related fields. (CSU)
GEOGRAPHY

GEOG 300 SELECTED TOPICS IN GEOGRAPHY
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

GEOG 301 GEOGRAPHY OF NEW ZEALAND
Units: 4
Hours: 108 (54 lecture, 54 laboratory)
Study of environmental and human geographies of New Zealand. Includes physical geography of island volcanism, tectonic activity, glaciation, fluvial and coastal landforms, weather, climate and bio-geography. Cultural studies include history of native Maori peoples, the colonization period and current economic, ethnic, demographic and political geographies. (CSU, UC)

GEOG 351 GEOGRAPHY OF ARGENTINA
Units: 3
Hours: 54 lecture
Introduction to the physical geography of Argentina through the exploration of its regions, such as the Patagonian steppe desert and mountain forests, the high Andes, the Pampas grasslands, the Chaco woodlands, the Parana Jungle and the Ibera Wetlands. Includes a historical view of the impact of population growth on each region and an assessment of the current state of conservation of each ecological region. (CSU, UC)

GEOLOGY

(See Earth Science)
LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
LIAISON COUNSELOR: D. Quadros

The active part that the United States is taking in world affairs makes it desirable that a greater number of Americans than ever before have knowledge of foreign languages and cultures. A language background should be of intrinsic value. The acquisition of desired practical communication skills in the study of modern foreign language is the primary objective. This can be accomplished by the oral approach, motivated by lectures and implemented by the language laboratory.

TRANSFER MAJOR REQUIREMENTS in Foreign Language are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Four-year graduates in Foreign Language are qualified for positions in teaching, business, foreign services, law enforcement, nursing, secretarial and diplomatic services.

GERMAN COURSES »

GER 1 ELEMENTARY GERMAN—LEVEL I
Units: 4
Hours: 72 lecture
Introduction to German language and culture, including speaking, listening, linguistic and grammatical structure, reading, pronunciation and intonation patterns. Corresponds to two years of high school study. (CSU, UC)

GER 2 ELEMENTARY GERMAN—LEVEL II
Units: 4
Prerequisite: Completion of GER 1 or two years of high school German with grade(s) of “C” or better
Hours: 72 lecture
Designed for those who have had previous training in the German language. Continuation of GER 1. Emphasis on speaking, listening, linguistic and grammatical structure, reading, writing. Further study of learning pronunciation and intonation patterns, together with continued discussion of unique cultural characteristics of the German-speaking peoples. Students continue to memorize dialogues, become knowledgeable of utilizing a substantial vocabulary and conduct translations of culturally meaningful reading selections. (CSU, UC)

GER 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

HEALTH EDUCATION

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION
DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
LIAISON COUNSELORS: C. Epting-Davis, S. Muraki

Health Education is designed to provide students with essential information for the evaluation and maintenance of individual health, stressing the mental, social and physical well-being of the individual.

HEALTH EDUCATION COURSES »

HED 1 STANDARD FIRST AID/COMMUNITY CPR
Units: 3
Hours: 54 lecture
Course involves theory and detailed demonstration of first aid care of the injured. Students learn to assess a victim’s condition and incorporate proper treatment. Standard first aid, CPR and AED certifications granted upon successful completion of requirements. Recognition and treatment for cardiac and respiratory emergencies, first aid for bleeding, shock, burns, poisoning, stroke and various injuries. (C-ID KIN 101) (CSU, UC)

HED 2 HEALTH EDUCATION
Units: 3
Hours: 54 lecture
Studies aspects of mental, emotional and physical health. Emphasis placed on knowledge for development of attitude, understanding and practice of a preventive lifestyle for healthy living and optimal wellness. Specific instructional areas include chronic diseases, physical activity, nutrition, weight management, birth control methods, human sexuality, alcohol, tobacco and illicit chemical use, stress and factors that contribute to wellness and longevity. Experience in personal health assessment and the changing of health behaviors is stressed. (CSU, UC)

HED 10 HEALTH AND AGING
Units: 3
Hours: 54 lecture
Basic principles and concepts of the aging process; includes the physical, social, emotional and mental components of health. Benefits of health promotion and preventive action for the aging are also explored. (CSU)
HEALTH SCIENCES COURSES

HSCI 2 EMERGENCY MEDICAL TECHNICIAN I
Units: 6.5
Prerequisite: Students must be 18 years of age at start of course; provide CPR certification from American Heart Association BLS for Healthcare Providers or a Professional Rescuer CPR card from American Red Cross; provide proof of measles, mumps and rubella (MMR) immunization; provide negative tuberculin skin test taken within 3 months of start of course; provide proof of varicella vaccine, proof of immunization, or positive varicella titer test; hepatitis B vaccine series completed with positive Hep B titer test, OR signed refusal form; current flu shot vaccination; and criminal background check clearance
Advisory: Completion of HSCI 7 and BIOL 55 with grades of "C" or better; eligibility for ENGL 11
Hours: 166 (104 lecture, 38 skills laboratory, 24 field clinical laboratory)
Comprehensive lecture and training provides knowledge and critical thinking skills necessary to provide Emergency Medical Care in a prehospital environment. Covers legal and moral aspects, scene safety, primary and secondary patient assessments, intervention and stabilization skills, proper use of emergency medical equipment, awareness of bloodborne pathogens and communicable diseases, recognizing signs and symptoms and pathophysiology of medical emergencies and traumatic injuries. Includes practical hands-on skills training and interactive simulations. Clinical Experience is an assigned field ride-along and/or clinical hospital observation. Attendance and participation is mandatory; an accumulative score of 80% on all written quizzes and exams and a passing score on all practical skills testing is required for successful course completion. Meets the EMT-1 curriculum requirements of the California Code of Regulations Title 22, the California EMS Authority and the National Registry of Emergency Medical Technicians (NREMT). Upon successful completion, eligible to take the National Registry EMT examination and qualify for California state EMT certification. May be repeated for credit to meet legally mandated requirements. (not transferable)

HSCI 3 MEDICAL TERMINOLOGY
Units: 3
Hours: 54 lecture
Basic structure of medical words, including prefixes, suffixes, word roots, combining forms and plurals. Pronunciation, spelling and definitions of medical terms and an understanding of human anatomy using a body system approach to selected structures, functions, diseases, procedures and diagnostic tests. (CSU)
HEALTH SCIENCES

HSCI 7 EMERGENCY MEDICAL RESPONDER
Units: 3
Hours: 54 lecture
Core knowledge and skills for individuals to provide emergency medical care including oxygen administration, airway adjuncts, bag valve mask, splinting and spinal immobilization. Emphasizes patient assessment and medical interventions at the First Responder level. Meets National Curriculum Standards for Emergency Medical Responders. American Heart Association Basic Life Support for the Health Care Provider CPR card and the Emergency Medical Responder Certificate of Completion issued with grade of “C” or better. Highly recommended as preparation for HSCI 2. (not transferable)

HSCI 20 FIRST AID FOR PUBLIC SAFETY PERSONNEL
Units: 1
Hours: 34 (22 lecture, 12 laboratory)
Basic emergency care, emphasizing patient assessment, shock, soft tissue and musculoskeletal injuries, medical emergencies, childbirth, airway management, immobilization techniques, CPR procedures, communicable disease awareness and sudden infant death syndrome. Meets California training standards for public safety personnel. (not transferable)

HSCI 50 INTRODUCTION TO PARAMEDIC TRAINING
Units: 3.5
Prerequisite: Completion of HSCI 2 or equivalent
Hours: 80 (60 lecture, 20 laboratory)
Introductory course for students considering a paramedic program. Designed to assist students in evaluating their educational preparedness for studying paramedic curriculum while preparing them for success within a program. Overview of practices, procedures, protocols and skills applied at the paramedic level of prehospital care. Includes licensing requirements, basic anatomy, physiology, patient assessment, basic drug pharmacology, cardiac electrophysiology, EKGs, intravenous therapy and advanced airway management. No certifications provided. (not transferable)

HSCI 600 EMERGENCY MEDICAL TECHNICIAN CONTINUING EDUCATION
Units: 1
Prerequisite: Emergency Medical Technician Certification
Hours: 24 (16 lecture, 8 laboratory)
New and updated emergency care methods. Reinforcement of basic knowledge and skills encountered in the pre-hospital setting, including use of an external automated defibrillator. In compliance with California’s continuing education requirements for EMT recertification. Skills competency verification required. May be repeated for credit to meet legally mandated requirements. (pass/no pass grading) (not degree applicable)

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: D. DeFoe, B. Fairchild, J. Hester, D. Kuchera, S. Lamphere, L. Medeiros, A. Myers
LIAISON COUNSELORS: B. Gosney, Reyes Ortega

History is an academic discipline concerned with the manner by which people and institutions of all kinds have become transformed with the passage of time. In the study of history it is more important to learn the skills of finding, interpreting and relating historical information than it is simply to memorize historical data. Through the study of history, students can acquire the techniques of gathering and applying information to gain a perspective on the human condition.

TRANSFER MAJOR REQUIREMENTS in History are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Positions for which four-year graduates in History are qualified include teaching, state and national park historian, historical archaeologist and government positions. There are broad areas in the job market where a liberal arts background is needed.

HISTORY FOR TRANSFER
AA-T DEGREE
History is a broadly based discipline that explores the human condition through its historical development. Courses explore a variety of regions and time periods, using both primary and secondary sources to examine the people, institutions, ideas and events of the past and present. By developing skills in critical thinking and expanding their understanding of cultural diversity, students will strengthen their understanding of the past and perspective on the future.

The Associate in Arts in History for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in History. Students completing the Associate in Arts in History for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in History for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

• completion of the major requirements with grades of C or better; and
• certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution
and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 17A History of the United States to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 17B History of the United States since 1865</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 6 UNITS FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 50 World History to 1500</td>
<td>3</td>
</tr>
<tr>
<td>HIST 51 World History since 1500</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 3 UNITS FROM THE FOLLOWING (IF NOT USED ABOVE):**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 19A History of Traditional East Asia</td>
<td>3</td>
</tr>
<tr>
<td>HIST 19B History of Modern East Asia</td>
<td>3</td>
</tr>
<tr>
<td>HIST 50 World History to 1500</td>
<td>3</td>
</tr>
<tr>
<td>HIST 51 World History since 1500</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 3 UNITS FROM THE FOLLOWING OR UNUSED COURSE FROM THE PRECEDING AREAS:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 20 California History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 21 Contemporary United States History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 22 American Military History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 23 Chicano/Mexican American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 24 Russian History—10th Century to Present</td>
<td>3</td>
</tr>
<tr>
<td>HIST 27 Women in American History</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 18**

---

**HISTORY
A.A. DEGREE**

The History major is awarded for study in United States, western civilization, or world history. The program strengthens historical inquiry through critical thinking and appreciation of cultural diversity. Students will identify and analyze historical sources, compare evidence and develop interpretations while gaining a fuller understanding of the past. Successful completion of the program will prepare students for transfer to four-year colleges and universities. The major is designed to meet the lower division requirements for History majors at four-year institutions. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 17A History of the United States to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 17B History of the United States since 1865</td>
<td>3</td>
</tr>
<tr>
<td>HIST 50 World History to 1500</td>
<td>3</td>
</tr>
<tr>
<td>HIST 51 World History since 1500</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 6 UNITS FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 4A Western Civilization to 1715</td>
<td>3</td>
</tr>
<tr>
<td>HIST 4B Western Civilization since 1715</td>
<td>3</td>
</tr>
<tr>
<td>HIST 19A History of Traditional East Asia</td>
<td>3</td>
</tr>
<tr>
<td>HIST 19B History of Modern East Asia</td>
<td>3</td>
</tr>
<tr>
<td>HIST 24 Russian History—10th Century to Present</td>
<td>3</td>
</tr>
<tr>
<td>HIST 35 Historical Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>HIST 50 World History to 1500</td>
<td>3</td>
</tr>
<tr>
<td>HIST 51 World History since 1500</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 6 ADDITIONAL UNITS SELECTED FROM ALL OTHER COURSES LISTED ABOVE:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 18**
HISTORY COURSES

HIST 4A WESTERN CIVILIZATION TO 1715
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Survey of the development of western culture, from its beginning to 1715, interrelating political and social events with art, literature and philosophy; covering the ancient Middle East, Greece, Rome, Late Antiquity, the Medieval era and early Modern Europe. (CSU, UC)

HIST 4B WESTERN CIVILIZATION SINCE 1715
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Survey of European history and the development of western culture, from 1715 to present, interrelating political and social events with art, literature and philosophy; covering the Ancient Regime, the Age of Democratic Revolutions, industrialization, the rise of fascism and communism, the two world wars, the Cold War, the postwar era and the European Union. (CSU, UC)

HIST 17A HISTORY OF THE UNITED STATES TO 1877
Units: 3
Prerequisite: Eligibility for ENGL 50 or ENGL N
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
History of the United States from its origins to 1877. Emphasis on evolution of colonial societies, the American Revolution and the establishment of the Republic, Constitution and constitutional developments and emergence of a national political tradition; ethnic and racial pluralism of settlement, growth and development; the market revolution and emergence of democracy; institution of slavery, territorial expansion and events, issues and developments culminating in the Civil War and the Reconstruction of the South. (CSU, UC)

HIST 17B HISTORY OF THE UNITED STATES SINCE 1865
Units: 3
Prerequisite: Eligibility for ENGL 50 or ENGL N
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
History of the United States from 1865 to the present. Emphasis on national political, economic, intellectual and social trends and their impact on constitutional law; industrialization and urbanization; evolution of American ethnic, cultural and racial pluralism; and role of United States in world affairs. Also addresses California state and local issues in a broad, national context. (CSU, UC)

HIST 18A THE AFRICAN AMERICAN EXPERIENCE IN AMERICAN HISTORY TO 1877
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
History of African Americans from the pre-European West African city state kingdoms to the end of Reconstruction; major events in America’s development emphasizing the role of people of African descent in the political, social and economic life of the United States; the institution of slavery; free blacks in the North and the abolitionist movement. (CSU)

HIST 18B THE AFRICAN AMERICAN EXPERIENCE IN AMERICAN HISTORY SINCE 1877
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
History of African Americans in the United States since the Civil War; major events in America’s development emphasizing the role of people of African descent in the political, social and economic life of the United States; Reconstruction; Jim Crow era; Booker T. Washington and W.E.B. DuBois; the Civil Rights Movement; and African Americans in the Reagan-Bush and Clinton eras. (CSU)

HIST 19A HISTORY OF TRADITIONAL EAST ASIA
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Survey of the major cultural, social and political traditions and institutions of India, China, Japan and Southeast Asia from the earliest civilizations to the 17th century. Includes imperial and dynastic developments, artistic and philosophical expression, economies and commerce and impact of pan-Asian Buddhist and Muslim movements. (CSU)

HIST 19B HISTORY OF MODERN EAST ASIA
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
East Asia from the 17th century to present. Includes Asian societies on the eve of modernization, regional responses to Western imperialism, modern nationalist movements, Asia during the two world wars and role of Asia in modern global economics and diplomacy. Comparisons of China, Japan and Indian subcontinent; reference to Korea and Southeast Asia. (CSU, UC)

HIST 20 CALIFORNIA HISTORY
Units: 3
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Comprehensive survey of the history of California from prehistoric to contemporary times. Emphasis on the environment and the three main eras of human settlement: California Indian, Spanish and Mexican and American periods. Study of diverse Indian groups; various movements of people over time and different perspectives on government, law, economics and culture. Local, state, regional, national, Pacific Rim and global issues. (CSU, UC)
HIST 21 CONTEMPORARY UNITED STATES HISTORY  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Study of American social, political and economic history since 1945; course emphasis on the impact of the Cold War and the struggles of civil rights and social justice that have shaped contemporary America. Also examined: the effects of globalization, technology, environmental challenges and religion in the post-war era. (CSU–with unit limitation, UC)

HIST 22 AMERICAN MILITARY HISTORY  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  

HIST 23 CHICANO/MEXICAN AMERICAN HISTORY  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Comprehensive survey of the history of Mexican Americans, from pre-Cortesian/Columbian times to the present. Emphasis on experiences and contributions of Chicanas/os in the United States regarding culture, economy, government, law, education and politics. (CSU, UC)

HIST 24 RUSSIAN HISTORY—10TH CENTURY TO PRESENT  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Survey of Russian history from the 10th century to the present. Includes the Slavic, Kievan, Muscovite and Imperial eras through the Revolutions of 1917, the rise and fall of the Soviet Union and the post-Soviet era. Emphasis on the major political, social, economic and cultural trends that define Russian and Soviet civilizations. (CSU, UC)

HIST 27 WOMEN IN AMERICAN HISTORY  
Units: 3  
Prerequisite: Eligibility for ENGL 50 or ENGL N  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Survey of women's roles in American history from its pre-colonial origins to the present. Emphasis on women's experiences and contributions to historical developments regarding social, economic and cultural life, government, politics, personal issues, the U.S. Constitution, race and racism, ethnicity and gender. (CSU, UC)

HIST 28 INDEPENDENT STUDY  
Units: 1-3  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC–with unit limitation)

HIST 35 HISTORICAL REASONING  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Development and assessment of critical thinking as it is used in the discipline of History. Logical reasoning and various methodologies applied to the study of historical problems and contemporary issues. Emphasis on assigned writing projects, oral history projects and classroom discussions to develop critical thinking skills. (CSU, UC)

HIST 50 WORLD HISTORY TO 1500  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Survey to 1500 of the political, economic, social, geographic and religious/philosophical characteristics of the major world civilizations and the interactions among these civilizations. (CSU, UC)

HIST 51 WORLD HISTORY SINCE 1500  
Units: 3  
Advisory: Eligibility for ENGL 1A or ESL 40W  
Hours: 54 lecture  
Survey from 1500 of the political, economic, social and cultural developments of world civilizations with a special emphasis on exploring interactions among these civilizations. (CSU, UC)

HIST 95 INTERNSHIP IN HISTORY  
Units: 0.5-4  
Designed for students interested in furthering their knowledge in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

HIST 300 SELECTED TOPICS IN HISTORY  
Units: 0.5-4  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/labatory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC–with unit limitation)
HUMAN DEVELOPMENT AND FAMILY

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION

DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
FACULTY: D. Eastman, L. Kearney-Capaul, J. Quinlan, C. Silvia
LIAISON COUNSELORS: T. Maddux, Rebecca Ortega

The Human Development and Family degree program provides students with the necessary education for work in child development programs at various levels; teacher assistant, associate teacher, teacher, master teacher, site supervisor and director. It also includes instruction in infant care, preschool, school-age care, children’s advocacy and child care resource and referral agencies. Students develop skills important to employment as instructional assistants in kindergarten and primary grade classrooms in public schools. Course work prepares students who wish to go into family and social services, as well as work with the elderly.

Specific courses in the human development area afford students the opportunity to enhance their quality of life and to meet general education requirements through courses in lifespan development, marriage, management, family, parenting and diversity.

The California Commission on Teacher Credentialing grants permits to those preparing to teach children in early childhood education programs and in after-school child care programs. These permits, known as Child Development Permits, authorize service in state funded child care and development programs. The course work provided by the Sierra College Human Development and Family Department is approved by the California Commission on Teacher Credentialing as meeting the requirements for the California Child Development Permits. Specific Permit requirements are listed after the information on the Early Childhood Skills Certificate/Certificate of Achievement/Associate Degrees offered at Sierra College.

Students should be aware of the different levels of the Permit and are recommended to consult with a full time Human Development & Family faculty member to discuss how to obtain a Permit at one of the various levels through their course work. Upon completion of the A.A./A.S. degree, a student will possess the course work required to work as a teacher in private and public preschool, as well as child care and development programs.

EARLY CHILDHOOD EDUCATION FOR TRANSFER
AS-T DEGREE

The Associate in Science in Early Childhood Education for Transfer degree (AS-T) provides a clearly articulated curricular track to complete a bachelor’s degree in Early Development, Care and Education (EDCE) for students who wish to transfer to CSU Sacramento. Completion of this degree involves a cohort of Sierra College students who meet for classes in Placer County as part of a partnership with CSUS. The cohort structure provides for additional student support, while the format better meets the needs of working adults. The degree provides a curricular track for students planning to transfer to other CSU campuses with the following bachelor’s degrees: Child Development, Child and Adolescent Development, Human Development and Education.

The required courses are part of the CA Curriculum Alignment Project, Lower Division 8 coursework and expose students to the core principles and practices of the field in order to build a foundation for future personal, academic, or career paths. Students will be able to identify and evaluate factors that influence children’s development; analyze early childhood programs for developmentally appropriate practices and program effectiveness; and exhibit professionalism within the field of Early Childhood Education by demonstrating skills relevant to the field.

Additionally, this degree is designed to facilitate students’ successful transfer to CSU campuses that prepare them for advanced study in a variety of graduate programs, as well as a variety of careers such as teaching, Child Development Specialist, Program Directors and Child Life Specialists. With a BA in ECE/Child Development, students are eligible for the Master Teacher and Site Supervisor levels of the CA Child Development Permit, using the Alternative Qualifications category.

Students completing the Associate in Science in Early Childhood Education for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Science in Early Childhood Education for Transfer degree, students must complete 60 CSU transferable semester units with a grade point average of at least 2.0, including:

- completion of the major requirements with grades of C or better;
- and certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.
REQUIRED COURSES UNITS
HDEV 2 Principles and Practices of Early Childhood Education... 3
HDEV 3 Observation, Documentation and Assessment in ECE... 3
HDEV 4 Child, Family and Community......................... 3
HDEV 5 Introduction to Curriculum................................ 3
HDEV 7 Health, Safety and Nutrition............................. 3
HDEV 9 Child and Adolescent Development.................... 3
HDEV 10 Practicum/Field Experience in Early Childhood Education................................................. 4.5
HDEV 25 Culture and Diversity in Early Childhood Education......................................................... 3

TOTAL UNITS REQUIRED: 25.5

EARLY CHILDHOOD EDUCATION ASSOCIATE TEACHER SKILLS CERTIFICATE
Upon completion of the following courses with grades of “C” or better, a student will qualify for an Associate Teacher Skills Certificate. Along with this skills certificate and documentation of the appropriate field experience, it is recommended that students confer with an advisor on how to obtain a Permit through the Commission on Teacher Credentialing. This level of course work authorizes the student to work as a teacher in both state funded child care programs as well as in Title 22, State Department of Health and Human Services programs.

REQUIRED COURSES UNITS
HDEV 2 Principles and Practices of Early Childhood Education... 3
HDEV 4 Child, Family and Community............................. 3
HDEV 5 Introduction to Curriculum................................ 3
HDEV 9 Child and Adolescent Development.................... 3

TOTAL UNITS REQUIRED: 12

CHILD DEVELOPMENT PERMIT—ASSOCIATE TEACHER
A Child Development Associate Teacher Permit authorizes the holder to provide services in the care, development and instruction of children in a child care and development program and supervise an Assistant Permit holder and an Aide. The student must apply to the Commission on Teacher Credentialing for a Child Development Permit at the Associate Teacher level after completing the following 12 units and appropriate work experience:

HDEV 2 Principles and Practices of Early Childhood Education
HDEV 4 Child, Family and Community
HDEV 5 Introduction to Curriculum
HDEV 9 Child and Adolescent Development

Work experience of 50 days of 3 plus hours per day within a 2 year period in a licensed child care facility

*Grades of “C” or better must be earned in all required courses.

EARLY CHILDHOOD EDUCATION TEACHER CERTIFICATE OF ACHIEVEMENT
(FORMERLY CHILDHOOD DEVELOPMENT TEACHER)
This certificate authorizes the holder to provide service in the care, development and instruction of children in a Title 22 Program. Students may be eligible for application to the Commission on Teacher Credentialing for a Child Development Permit at the Teacher Level.

REQUIRED COURSES UNITS
HDEV 2 Principles and Practices of Early Childhood Education... 3
HDEV 3 Observation, Documentation and Assessment in ECE... 3
HDEV 4 Child, Family and Community............................. 3
HDEV 5 Introduction to Curriculum................................ 3
HDEV 7 Health, Safety and Nutrition............................. 3
HDEV 9 Child and Adolescent Development.................... 3
HDEV 10 Practicum/Field Experience in Early Childhood Education......................................................... 4.5
HDEV 25 Culture and Diversity in Early Childhood Education......................................................... 3

PLUS 16 ADDITIONAL GENERAL EDUCATION UNITS, INCLUDING AT LEAST ONE COURSE IN EACH OF THE FOLLOWING AREAS:

Humanities
Social/Behavioral Sciences
Mathematics and/or Natural Sciences
English.................................................................. 16
(See pages 44-45)

TOTAL UNITS REQUIRED: 41.5

CHILD DEVELOPMENT PERMIT—TEACHER
A Child Development Teacher Permit authorizes the holder to provide service in the care, development and instruction of children in a child care and development program; and supervise an Aide, Assistant Permit and Associate Teacher permit holder. The student must apply to the Commission on Teacher Credentialing for a Child Development Permit at the Teacher level after completing the following 40 units and appropriate work experience:

12 core units (HDEV 2, 4, 5, 9)
12 HDEV/ECE elective units
16 General Education units
Work experience equaling 175 days of 3 plus hours per day within a 4-year period in a licensed child care facility

16 GENERAL EDUCATION UNITS MUST BE IN THE AREAS OF:
English/Language Arts
Math or Science
Social Sciences
Humanities and/or Fine Arts

*Grades of “C” or better must be earned in all required courses.
EARLY CHILDHOOD EDUCATION
A.A. OR A.S. DEGREE
(FORMERLY CHILD DEVELOPMENT TEACHER)
Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDEV 2 Principles and Practices of Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 3 Observation, Documentation and Assessment In ECE</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 4 Child, Family and Community</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 5 Introduction to Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 7 Health, Safety and Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 9 Child and Adolescent Development</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 10 Practicum/Field Experience in Early Childhood Education</td>
<td>4.5</td>
</tr>
<tr>
<td>HDEV 25 Culture and Diversity in Early Childhood Education</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 25.5

EARLY CHILDHOOD EDUCATION—MASTER TEACHER
A.A. OR A.S. DEGREE
(FORMERLY CHILD DEVELOPMENT MASTER TEACHER)
Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDEV 2 Principles and Practices of Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 3 Observation, Documentation and Assessment In ECE</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 4 Child, Family and Community</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 5 Introduction to Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 7 Health, Safety and Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 9 Child and Adolescent Development</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 10 Practicum/Field Experience in Early Childhood Education</td>
<td>4.5</td>
</tr>
<tr>
<td>HDEV 25 Culture and Diversity in Early Childhood Education</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 25.5

PLUS 6 UNITS IN AN AREA OF SPECIALIZATION FROM:

- HDEV 11 Infant and Toddler Development and Caregiving
- HDEV 95 Internship in Human Development and Family
- HDEV 43 Music and Movement for Young Children
- MUS 10 Music Fundamentals
- HDEV 19 Exceptional Development
- DFST 1 American Sign Language
- HDEV 21/PSYC 110 Psychology of Marriage and Family
- HDEV 22/SOC 4 The Family
- HDEV 23 Dynamics of Parenthood
- HDEV 30 Creative Process in Children
- ART 2 Two-Dimensional Design Foundations
- ART 10 Art Appreciation

TOTAL UNITS REQUIRED: 33.5

CHILD DEVELOPMENT PERMIT—MASTER TEACHER
A Child Development Master Teacher Permit authorizes the holder to provide service in the care, development and instruction of children in a child care and development program and supervise all of the above. A Master Teacher may also be a coordinator of curriculum and staff development in a child care and development program. The student must apply to the Commission on Teacher Credentialing for a Child Development Permit at the Master Teacher level after completing the following 48 units and appropriate work experience:

- 12 core units (HDEV 2, 4, 5, 9)
- 12 HDEV/ECE elective units
- 16 GE units
- 2 Adult Supervision units (HDEV 38)
- 6 specialization units (listed below)
- Work experience equaling 350 days of 3 plus hours per day within a 4-year period in a licensed child care facility
- HDEV 11 Infant and Toddler Development and Caregiving
- HDEV 95 Internship in Human Development and Family
- HDEV 43 Music & Movement for Young Children
- MUS 10 Music Fundamentals
- HDEV 19 Exceptional Development
- DFST 1 American Sign Language
- HDEV 21/PSYC 110 Psychology of Marriage and Family
- HDEV 22/SOC 4 The Family
- HDEV 23 Dynamics of Parenthood
- HDEV 30 Creative Process in Children
- ART 2 Two-Dimensional Design Foundations
- ART 10 Art Appreciation
- SSCI 10 Introduction to Ethnic Studies
OR
HDEV 29 Storytelling and Puppetry AND
HDEV 44/ENGL 44 Introduction to Children's Literature OR
HDEV 46 Language and Literacy
OR
HDEV 30 Creative Process in Children AND
ART 2 Two-Dimensional Design Foundations OR
ART 10 Art Appreciation
*Grades of “C” or better must be earned in all required courses.

HUMAN DEVELOPMENT AND FAMILY COURSES »

HDEV 1 HUMAN DEVELOPMENT
Units: 3
Hours: 54 lecture
Study of the physical, cognitive, psychosocial and emotional changes in development through the life span. Focuses on practical application of developmental principles and patterns of growth from conception through late adulthood, including death and bereavement processes. Designed as a foundation course for careers in social service, psychological, health and medical fields. (CSU, UC-with unit limitation)

HDEV 2 PRINCIPLES AND PRACTICES OF EARLY CHILDHOOD EDUCATION
Units: 3
Hours: 54 lecture
Examination of the underlying theoretical principles of developmentally appropriate practice applied to programs, environments, key role of relationships, constructive adult-child interactions and teaching strategies in supporting physical, cognitive, social and creative development in children. Emphasis on the preschool years, developmentally appropriate practices and professional development. Five hours of observation of programs serving young children required. (C-ID ECE 120) (CSU)
HDEV 3 OBSERVATION, DOCUMENTATION AND ASSESSMENT IN ECE
Units: 3
Prerequisite: Completion of HDEV 1 or 9 with grade of “C” or better; completion of HDEV 2 with grade of “C” or better
Hours: 54 lecture
Focus on the appropriate use of assessment and observation strategies to document development, growth, play and learning to join with families and professionals in promoting children’s success. Recording strategies, rating systems, portfolios and multiple assessment tools are explored. Direct child observations required. (C-ID ECE 200) (CSU)

HDEV 4 CHILD, FAMILY AND COMMUNITY
Units: 3
Hours: 54 lecture
Examination of the developing child in a societal context focusing on the interrelationship of family, school and community. Emphasis on historical and socio-cultural factors and processes of socialization and identity development that show the importance of reciprocal relationships that support and empower families. (C-ID CDEV 110) (CSU, UC)

HDEV 5 INTRODUCTION TO CURRICULUM
Units: 3
Prerequisite: Completion of HDEV 1 or 9 with grade of “C” or better; completion of HDEV 2 with grade of “C” or better
Hours: 54 lecture
Examines knowledge and skills related to providing appropriate curriculum and environments for young children, supporting development using observation and assessment strategies and creating play-based learning environments. Content areas include: language/literacy, social/emotional learning, art/creativity, math/science. (C-ID ECE 130) (CSU)

HDEV 7 HEALTH, SAFETY AND NUTRITION
Formerly known as HDEV 6 and 8
Units: 3
Hours: 54 lecture
Introduction to laws, regulations, standards, policies and procedures and early childhood curriculum related to child health, safety and nutrition. Key components that ensure physical and mental health and safety for children and staff will be identified along with the importance of collaboration with families and health professionals. Focus on integrating concepts into everyday planning and program development in child care settings and family child care homes. (C-ID ECE 220) (CSU)

HDEV 9 CHILD AND ADOLESCENT DEVELOPMENT
Units: 3
Hours: 54 lecture
Study of physical, psychosocial and cognitive/language developmental milestones for children, both typical and atypical, from conception through adolescence. Emphasis on interactions between maturational processes and environmental factors that affect growth and development. (C-ID CDEV 100) (CSU, UC-with unit limitation)

HDEV 10 PRACTICUM/FIELD EXPERIENCE IN EARLY CHILDHOOD EDUCATION
Units: 4.5
Prerequisite: Completion of HDEV 3 and 5 with grades of “C” or better
Advisory: Completion of HDEV 25 with grade of “C” or better
Hours: 144 (54 lecture, 90 laboratory)
Planning and implementation of developmentally appropriate and intentional early childhood teaching competencies under guided supervision. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors and build a comprehensive understanding of children. Child centered and interest based, play-oriented approaches to teaching, learning and assessment; and knowledge of developmentally appropriate curriculum in content areas emphasized as student teachers design, implement and evaluate experiences that promote positive development and learning for all young children. Ninety supervised teaching hours outside of the classroom are required. (C-ID ECE 210) (CSU)

HDEV 11 INFANT AND TODDLER DEVELOPMENT AND CAREGIVING
Units: 3
Hours: 54 lecture
Infant and toddler development and caregiving practices from birth to 36 months, including physical, cognitive and psycho-social development. Examines influences on infant development, including families and child care practices. Emphasizes relationships, environments and curriculum to meet group and individual needs. Explores contemporary research as it applies to programs for infants and toddlers. Recommended for Child Development, education and health career majors. (CSU)

HDEV 12 INFANT CAREGIVING
Units: 3
Prerequisite: Completion of HDEV 11 with grade of “C” or better
Hours: 90 (36 lecture, 54 laboratory)
Principles and practices of caring for infants and toddlers, including methods of promoting emotional, social, cognitive and physical development. Includes information to assess development of children and develop appropriate relationships, environments and curriculum to meet group and individual needs. (CSU)

HDEV 13 SCHOOL AGE CHILD
Units: 3
Advisory: Completion of HDEV 1 or 9 with grade of “C” or better
Hours: 54 lecture
Study of the child from 6-12 years of age, including physical, cognitive, social and moral development. Fundamentals of planning educational and recreational programs with an emphasis on developmentally appropriate practice. (CSU)
HDEV 14 PROGRAMS FOR SCHOOL AGE CHILDREN
Units: 3
Prerequisite: Completion of HDEV 13 with grade of "C" or better
Advisory: Completion of HDEV 1 or 9 with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Study of principles and standards for school-age child development programs. Emphasis on implementation of recommended practices in supervised laboratory settings. Includes planning and presenting developmentally appropriate activities in all curriculum areas. Meets specialization requirement, with HDEV 13, of Master Teacher Child Development Permit. (CSU)

HDEV 19 EXCEPTIONAL DEVELOPMENT: INCLUSION OF SPECIAL NEEDS CHILDREN
Units: 3
Advisory: Completion of HDEV 1
Hours: 54 lecture
Introduction to the study of children from birth to eight years of age with special needs resulting from atypical physical/motor, cognitive, language/literacy and social/emotional development. Covers causes and accommodation of the major types of exceptional development, including giftedness, in schools, childcare settings, homes, public and private sectors. Designed for parents, teachers, aids in infant/toddler programs, preschools and K-2 elementary school levels and other interested students. Emphasis on communication and understanding behavioral dynamics while forming respectful relationships between families, caregivers and specialists. Approved for continuing education units by the Board of Registered Nursing. (CSU)

HDEV 21 PSYCHOLOGY OF MARRIAGE AND FAMILY
Also known as PSYC 110
Units: 3
Hours: 54 lecture
Study of the meaning and functions of intimacy, marriage and family. Consideration given to the nature of commitments, sexuality, alternative relationships, communication, conflict resolution, economics, parenting, crises and marital separation. Recommended for majors in Human Development and Family and for those in human service careers. (CSU, UC)

HDEV 22 THE FAMILY
Also known as SOC 4
Units: 3
Advisory: Completion of SOC 1 recommended
Hours: 54 lecture
A sociological approach to the analysis of the family as a social institution. Of particular interest will be the changing structure of family, gender roles, dating, marriage, intimacy, relationships and parenting. (CSU, UC)

HDEV 23 DYNAMICS OF PARENTHOOD
Formerly known as HDEV 23ABCD
Units: 3
Advisory: Completion of HDEV 1 with grade of "C" or better
Hours: 54 lecture
A survey of historical and contemporary attitudes toward parenting. Review of research on child-rearing practices and parent-child relationships. Exploration of current approaches for effective interaction and communication of family members. Emphasis on the influence of personality, developmental stage, family structures, ethnic and cultural factors. (CSU)

HDEV 25 CULTURE AND DIVERSITY IN EARLY CHILDHOOD EDUCATION
Units: 3
Hours: 54 lecture
Study of human diversity as it relates to young children, families, programs, classrooms and teaching. Examination of the development of social identities in diverse societies including oppression and privilege. Explores the meaning, necessity and benefits of anti-bias education and presents various strategies emphasizing cultural and linguistic approaches supporting all children in becoming competent members of a diverse society. Includes self-examination and reflection on issues related to social identity, stereotypes and bias, social and educational access, media and schooling. (C-ID ECE 230) (CSU)

HDEV 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

HDEV 29 STORYTELLING AND PUPPETRY
Formerly known as HDEV 17 & 18
Units: 3
Hours: 54 lecture
Storytelling and puppetry explored as a means of enhancing oral language, listening skills and creativity in young children. Examines stories from many cultures. Emphasizes the art of telling stories. Focuses on the methods, materials and experiences needed to use storytelling and puppetry effectively with children. Hands-on involvement with practical application for teachers, teacher aids, librarians, therapists, recreation leaders, church and youth group leaders, artists, dramatists and parents. (CSU)

HDEV 30 CREATIVE PROCESS IN CHILDREN
Units: 3
Hours: 54 lecture
Introduction to the aesthetic development and creative expression of children. Exploration of art methods, materials, creative process and developmental stages. Enables students to implement effective teaching strategies for encouraging children's artistic and overall creative development. (CSU)
HDEV 38 ADULT SUPERVISION: MENTORING IN ECE SETTINGS
Units: 2
Prerequisite: Completion of the following with grades of "C" or better: HDEV 1 or 9; and HDEV 2
Hours: 36 lecture
Principles and methods of supervising students, teachers and other adults in early childhood education settings. Emphasis on the role of experienced teachers who function as leaders, supervisors and mentors. Meets requirements of Master Teacher Level of Child Development Permits. (CSU)

HDEV 40 ADMINISTRATION AND SUPERVISION OF EARLY CHILDHOOD PROGRAMS
Units: 3
Prerequisite: Completion of HDEV 1 or 9 with grade of "C" or better; completion of HDEV 2 with grade of "C" or better
Advisory: Completion of HDEV 4 and 5 with grades of "C" or better
Hours: 54 lecture
Basic aspects of understanding and directing an early childhood education program. Emphasis on implementing state licensing requirements for child care centers. Consideration given to planning the facilities and program, health and safety requirements, policy making and staff/parent communication. (CSU)

HDEV 41 ADVANCED ADMINISTRATION OF ECE PROGRAMS
Formerly known as HDEV 41A/41B/41C
Units: 3
Prerequisite: Completion of HDEV 40 with grade of "C" or better
Hours: 54 lecture
Advanced level of child care administration including legal and financial issues related to establishment and operation of early childhood education programs. Emphasis includes: compliance with relevant laws and regulation; developing sound fiscal and regulatory policies relative to the operation of different types of early childhood programs; personnel training, supervision and evaluation; staff development; networking within the community to promote participation and support between professionals in the field; and familiarity with current Early Childhood State Department of Education publications. (CSU)

HDEV 43 MUSIC AND MOVEMENT FOR YOUNG CHILDREN
Units: 3
Hours: 54 lecture
Theoretical perspectives and practical applications of the use of music and movement with children from infancy to age eight in group settings. Emphasis on exploration of music and movement as ways to involve young children with cultural diversity and traditions, creative expression, promotion of an understanding of the connection to healthy living and physical activity and stimulation of brain development. Methods and materials used in singing, rhythms, creative music, reading and listening, development of music and movement lesson plans and creation of inexpensive musical instruments. (CSU)

HDEV 44 INTRODUCTION TO CHILDREN’S LITERATURE
Also known as ENGL 44
Units: 3
Prerequisite: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
Examination of classic and contemporary children’s literature, including criteria for selection, uses in child development and education and practices in presentation and analysis. Designed for parents, prospective teachers, aides, child development professionals and students interested in the field of literature for children ages 1-13. (CSU)

HDEV 46 LANGUAGE AND LITERACY
Units: 3
Prerequisite: Completion of HDEV 2 with grade of “C” or better
Advisory: Completion of HDEV 1 with grade of "C" or better
Hours: 54 lecture
Designed to support early childhood educators in the area of early language and literacy development. Focus on planning and implementing developmentally appropriate experiences that enhance the quality and quantity of oral language, provide for a print-rich environment and assist children in their growing understanding of print. Encourages literacy learning in a meaningful context and provides strategies for working with families and diverse populations. (CSU)

HDEV 47 MATH AND SCIENCE IN EARLY CHILDHOOD EDUCATION
Units: 3
Prerequisite: Completion of HDEV 2 with grade of “C” or better
Advisory: Completion of HDEV 1 with grade of “C” or better
Hours: 54 lecture
Designed to support early childhood educators of preschool-aged children. Exploration of fundamental math and science concepts and principles of selecting and implementing appropriate math and science activities in an integrated curriculum. Focus on specific strategies and techniques for working with preschool children and connecting their families to the preschool learning environment. (CSU)

HDEV 61 NUTRITION THROUGHOUT THE LIFE CYCLE
Also known as NUTF 13
Units: 3
Advisory: Completion of NUTF 10 with grade of “C” or better
Hours: 54 lecture
Examination of nutritional concerns, requirements and metabolism during several stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence and the elderly years. Analysis of cultural, environmental, physical and economic factors affecting nutritional status. Study methods of assuring adequate nutrition through dietary selection and promotion of maternal, infant, geriatric health. (CSU)
HDEV 95 INTERNSHIP IN HUMAN DEVELOPMENT AND FAMILY

Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

HDEV 300 SELECTED TOPICS IN HUMAN DEVELOPMENT AND FAMILY

Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

HDEV 400 SELECTED TOPICS IN HUMAN DEVELOPMENT AND FAMILY

Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

HUMANITIES: GENERAL A.A. DEGREE

The A.A. degree in Humanities: General provides preparation for upper division course work in Humanities at a four-year university. The degree acquaints students with the relevant eras, ideas, ideals, values and terminology endemic to the field as expressed in art, music, drama, literature, philosophy and religion. The Humanities: General A.A. degree pattern affords students the widest array of Humanities coursework from which to choose to satisfy transfer institution requirements. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED CORE COURSES

HUM 1 Introduction to Humanities I ................................. 3
HUM 2 Introduction to Humanities II ............................... 3
HUM 3 Introduction to Asian Humanities ........................... 3

PLUS 12 UNITS FROM:

AAD 12 Visual Communication (also COMM 12) ............... 3
ART 1A History of Prehistoric through Gothic Art ............. 3
ART 1B History of Renaissance to Mid-Nineteenth Century Art .
ART 1C History of Modern to Contemporary Art .............. 3
ART 1D History of Asian Art ......................................... 3
ART 1E History of Women in Art .................................... 3
ART 1F History of Islamic Art ....................................... 3
ART 10 Art Appreciation .............................................. 3
ART 11 History and Aesthetics of Photography (also PHOT 10) . 3
DRMA 13 Introduction to Theater .................................... 3
DRMA 20 Play, Performance and Perception ....................... 3
ENGL 1B Critical Thinking and Writing about Literature ........ 3
ENGL 24 Introduction to Literary Criticism and Critical Concepts 3
ENGL 27 Literature by Women ....................................... 3
ENGL 29 Introduction to Drama as Literature ................. 3
ENGL 30A American Literature—Beginnings through Civil War ...
ENGL 30B American Literature—Civil War to the Present .... 3
ENGL 32 Introduction to Poetry ..................................... 3
ENGL 33 Introduction to Shakespeare (The Drama) ............ 3
ENGL 34 Introduction to the Novel .................................. 3
ENGL 35 Introduction to the Short Story .......................... 3
ENGL 37 American Film Masterpieces ............................ 3
ENGL 38 International Film Masterpieces .......................... 3
ENGL 40 The Filmed Novel ........................................... 3
ENGL 42 The Documentary Film .................................... 3
ENGL 44 Introduction to Children’s Literature (also HDEV 44) .. 3
ENGL 45 Introduction to Adolescent Literature ............... 3
ENGL 46A English Literature ......................................... 3
ENGL 46B English Literature ......................................... 3
ENGL 47A World Literature .......................................... 3
ENGL 47B World Literature .......................................... 3

LIBERAL ARTS

INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: J. Haproff, J. Keating, J. Terry
LIAISON COUNSELOR: Reyes Ortega

The study of Humanities offers an approach which integrates the arts, literature, history, music, philosophy and other disciplines. The program focuses on the culture of human civilization from classic antiquity through the Middle Ages and Renaissance to the Modern Era. The objective of the Humanities is to give a sense of wholeness to human experience.
### HUMANITIES: DIVERSE PERSPECTIVES

#### A.A. DEGREE

The A.A. degree in Humanities: Diverse Perspectives provides preparation for upper division course work in Humanities at a four-year university. The Humanities: Diverse Perspectives A.A. degree pattern guides students through a series of courses that focus specifically on examining History, Art, Architecture, Philosophy, Drama, Literature and Music from diverse perspectives. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

#### REQUIRED CORE COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HUM 1 Introduction to Humanities I</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HUM 2 Introduction to Humanities II</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HUM 3 Introduction to Asian Humanities</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

#### PLUS 12 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ART 1D History of Asian Art</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ART 1E History of Women in Art</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ART 1F History of Islamic Art</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ENGL 27 Literature by Women</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HIST 19A History of Traditional East Asia</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HIST 19B History of Modern East Asia</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HUM 5 Classical Roots of the Contemporary Western World</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HUM 9 Introduction to Women, Gender and Religion</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

#### TOTAL UNITS REQUIRED: 21

---

### HUMANITIES: DIVERSE PERSPECTIVES

#### A.A. DEGREE

The A.A. degree in Humanities: Diverse Perspectives provides preparation for upper division course work in Humanities at a four-year university. The Humanities: Diverse Perspectives A.A. degree pattern guides students through a series of courses that focus specifically on examining History, Art, Architecture, Philosophy, Drama, Literature and Music from diverse perspectives. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

#### REQUIRED CORE COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HUM 1 Introduction to Humanities I</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HUM 2 Introduction to Humanities II</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HUM 3 Introduction to Asian Humanities</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

#### PLUS 12 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ART 1D History of Asian Art</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ART 1E History of Women in Art</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ART 1F History of Islamic Art</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ENGL 27 Literature by Women</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HIST 19A History of Traditional East Asia</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HIST 19B History of Modern East Asia</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HUM 5 Classical Roots of the Contemporary Western World</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HUM 9 Introduction to Women, Gender and Religion</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

#### TOTAL UNITS REQUIRED: 21
**HUMANITIES: ASIAN STUDIES**

**A.A. DEGREE**

The A.A. degree in Humanities: Asian Studies provides preparation for upper-division course work in Humanities at a four-year university. The degree will guide students to examine the Asian experience through its ideas (philosophy), through its commitment to its culture, traditions and rituals (religions) and through its applied practices (the disciplines for self-development of body/mind health, meditation and martial arts). Courses are offered which provide opportunities for self-discovery and the construction of a coherent outlook and critical reason. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

**REQUIRED CORE COURSES:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 1</td>
<td>Introduction to Humanities I</td>
<td>3</td>
</tr>
<tr>
<td>HUM 2</td>
<td>Introduction to Humanities II</td>
<td>3</td>
</tr>
<tr>
<td>HUM 3</td>
<td>Introduction to Asian Humanities</td>
<td>3</td>
</tr>
</tbody>
</table>

**ADDITIONAL REQUIRED COURSES:**

- PHED 55 Fundamentals of Yoga AND/OR
- PHED 57 Developing a Personal Yoga Practice .................. 1.5
- PHED 14 Tai Chi AND/OR
- PHED 66 Combative Self Defense ................................ 1.5

**PLUS 8 UNITS FROM:**

- ART 1F History of Islamic Art ................................... 3
- HIST 19A History of Traditional East Asia .................... 3
- HIST 19B History of Modern East Asia .......................... 3
- HUM 10 World Religions ........................................... 3
- JPN 1 Elementary Japanese—Level I ............................ 4
- PHIL 13 Introduction to Asian Philosophy ..................... 3
- PHED 68 Introduction to Meditation ............................ 5-2

**TOTAL UNITS REQUIRED:** 20

**HUMANITIES COURSES »**

**HUM 1 INTRODUCTION TO HUMANITIES I**

*Units: 3*

*Advisory: Eligibility for ENGL 1A*

*Hours: 54 lecture*

Introduction to the art, architecture, history, literature, music, religion and philosophy from the ancient through the medieval world. Emphasis on classical Greece and Rome. (CSU, UC)

**HUM 2 INTRODUCTION TO HUMANITIES II**

*Units: 3*

*Advisory: Eligibility for ENGL 1A*

*Hours: 54 lecture*

Introduction to the art, architecture, history, literature, music, religion and philosophy of the Western World from the Renaissance to the present. (CSU, UC)

**HUM 3 INTRODUCTION TO ASIAN HUMANITIES**

*Units: 3*

*Advisory: Eligibility for ENGL 1A*

*Hours: 54 lecture*

Introduction to the art, architecture, history, literature, religions and philosophy of Asia with an emphasis on India, China and Japan from ancient times to the present. The Eastern mode of thinking emphasized and compared with those of the West. (CSU, UC)

**HUM 5 CLASSICAL ROOTS OF THE CONTEMPORARY WESTERN WORLD**

Formerly known as HUM 300G

*Units: 3*

*Advisory: Eligibility for ENGL 1A*

*Hours: 54 lecture*

An examination of the Classical World’s influence on the Contemporary Western World with special emphasis on theology, body image, love and sex, gender roles, democracy, conceptions of the good life and entertainment based upon evidence from the art, architecture, literature and philosophy of the Classical World. (CSU, UC)

**HUM 9 INTRODUCTION TO WOMEN, GENDER AND RELIGION**

*Also known as WMST 3*

*Units: 3*

*Hours: 54 lecture*

Introduction to the topic of religion from a feminist perspective through a cross-cultural examination of major religious traditions of the East and West, as well as tribal faith practices. Emphasis on the historical role of women and gender in rituals, sacred texts, institutional structures, doctrine and religious iconography with respect to the impact on contemporary women regarding faith, politics and identity. (CSU, UC)

**HUM 10 WORLD RELIGIONS**

*Units: 3*

*Advisory: Eligibility for ENGL 1A*

*Hours: 54 lecture*

Investigates rituals, ethics, institutional structures and the cultural ethos of world religions including myths, doctrines and sacred texts. Focuses on Tribal Religions, Confucianism/Taoism, Hinduism, Buddhism, Judaism, Christianity, Islam and related religious movements. (CSU, UC)
HUMANITIES

HUM 11 INTRODUCTION TO ISLAM
Units: 3
Hours: 54 lecture
An introduction to Islam, from its origins through the present time and including study of Islam’s history, major figures, texts and guiding principles. (CSU, UC)

HUM 15 INTRODUCTION TO MYTHOLOGY
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
The major elements of western mythology, its history and development as part of the human experience and its influence on art, literature and politics. (CSU, UC)

HUM 17 INTRODUCTION TO ATHEISM
Units: 3
Hours: 54 lecture
An introduction to the philosophy of atheism, its historical roots, major thinkers and expressions in art, literature and philosophy. Includes a history of free inquiry and thought, secular humanism, humanistic ethics and scientific naturalism. (CSU, UC)

HUM 20 INTRODUCTION TO THE HEBREW BIBLE
Units: 3
Hours: 54 lecture
Introduction to the texts and development of the Torah, Old Testament and Apocrypha through a critical reading of their writings. Includes history, cultural influences, language, authorship, events, personages/characters, ideas and beliefs of ancient Israel as well as the relationship between Hebrew Scriptures and archaeology, literature, history, current Biblical scholarship criticism and women’s studies. (CSU, UC)

HUM 21 INTRODUCTION TO THE NEW TESTAMENT
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture

HUM 26 QUEER (LGBTIQ) FILM HISTORY
Units: 3
Hours: 72 (36 lecture, 36 activity)
Historical representations of queer sexualities in mainstream commercial cinema, as well as underground and independent films, from the silent era to the present. Examines theoretical approaches to the study of queer cinema, the way social attitudes shape cultural representation and the relationship between audience interpretation and filmmakers’ intentions. (CSU)

HUM 27 INTRODUCTION TO LGBT STUDIES/QUEER THEORY
Also known as WMST 2
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
A broad and general introduction to Queer Theory as an historical consequence of Feminism and Gay and Lesbian Studies. Emphasis on theoretical and philosophical underpinnings of Queer Theory, Social Construction versus Essentialism, Postmodernist theory, Politics, LGBT Studies and Queer Culture. (CSU, UC)

HUM 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC—with unit limitation)

HUM 30 STUDYING AND LEARNING ABROAD
Units: 1
Hours: 18 lecture
Issues of studying abroad including practical concerns of international travel, living and studying in a foreign country, awareness of cross-cultural issues and knowledge and appreciation of host country and re-entry issues. (CSU)

HUM 95 INTERNSHIP IN HUMANITIES
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

HUM 300 SELECTED TOPICS IN HUMANITIES
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC—with unit limitation)
ITALIAN COURSES »

ITAL 1 ELEMENTARY ITALIAN—LEVEL I
Units: 4
Hours: 72 lecture
Intensive instruction in understanding, speaking, reading and writing elementary Italian. Basic grammar, regular and some irregular verbs in the present tense of the indicative mood. Daily practice in speaking and writing. Corresponds to two years of high school study. (CSU, UC)

ITAL 2 ELEMENTARY ITALIAN—LEVEL II
Units: 4
Prerequisite: Completion of ITAL 1 or two years of high school Italian with grade(s) of "C" or better
Hours: 72 lecture
Intensive basic grammar, greater emphasis on speaking and writing. Emphasis on culture and events of the areas where Italian is spoken. (CSU, UC)

ITAL 3 INTERMEDIATE ITALIAN—LEVEL I
Units: 4
Prerequisite: Completion of ITAL 2 or three years of high school Italian with grade(s) of "C" or better
Hours: 72 lecture
Designed for those with previous training in the Italian language. Continues to teach culture and facilitate language acquisition through listening, speaking, reading and writing. Emphasis on speaking, using more complex linguistic structures of the language and reading and writing. Authentic Italian texts and excerpts from works of Italian authors read and analyzed in the classroom. Continued development of the ability to analyze linguistic structures and reflect on and evaluate cross-cultural differences. (CSU, UC)
JAPANESE COURSES »

JPN 1 ELEMENTARY JAPANESE—LEVEL I
Units: 4
Hours: 72 lecture
Introduction to Japanese language: reading, writing, with emphasis on speaking. Pronunciation, sound system, intonation, basic vocabulary and grammar of spoken Japanese. Grammar emphasis is word order, postpositions and some conjugation in simple sentences. Introduction to geography, customs and culture of Japan. Students required to learn Hiragana script. Corresponds to two years of high school study. (CSU, UC)

JPN 2 ELEMENTARY JAPANESE—LEVEL II
Units: 4
Prerequisite: Completion of JPN 1 or two years of high school Japanese with grade of “C” or better
Hours: 72 lecture
Continuation of JPN 1 with increased emphasis on reading, writing and grammatical forms. Stresses vocabulary, idioms, postpositions and grammar. Study of more complex subordinate phrases and clauses. Includes Hiragana, as well as, Katakana and simple Kanji ideographs. Further study of geography, customs and culture of Japan. (CSU, UC)

JPN 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

JOURNALISM COURSES »

JRNL 20A INTRODUCTION TO JOURNALISM
Also known as COMM 21
Units: 3
Prerequisite: Completion of ENGL 1A or ESL 40W with grade of “C” or better
Hours: 54 lecture
Study of the basic principles of journalism. Development of skills associated with evaluating, gathering and writing news in accepted journalistic style for print and online media. Introduction to the role of the reporter in news organizations, history of journalism, the effects of media on the individual and society and legal and ethical issues related to journalism. (CSU, UC)

JRNL 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

JRNL 95 INTERNSHIP IN JOURNALISM
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)
LEARNING DISABILITIES

STUDENT SERVICES
DEAN: Sharon Adams
DIVISION OFFICE: Winstead Center L-102
FACULTY: G. Joy
AREA OFFICE: MT-8
LIAISON COUNSELORS: S. Bramlett, M. Kwoka

LEARNING DISABILITIES COURSES »

LRDS 610 LEARNING DISABILITIES ORIENTATION
Units: 0.5
Hours: 9 lecture
Orientation to the Learning Disabilities program and assessment of learning strengths and weaknesses to determine eligibility for learning disability services. Procedures and services offered follow the criteria mandated by the California Community College Chancellor’s Office Learning Disabilities Eligibility and Service Model. Students must complete an application for learning disability services and be approved for enrollment by the instructor. Students are asked to provide relevant documentation related to eligibility for services. (pass/no pass grading) (not degree applicable)

LIBERAL ARTS

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107

ARTS AND CULTURES
A.A. DEGREE
This program provides an introduction to critical thinking, multicultural studies and the arts for students interested in strengthening their analytical and communication skills and/or transferring to four-year colleges and universities. This degree builds a knowledge base appropriate for students transferring to arts and humanities programs at four-year institutions or for students building a base for transfer specialization in areas of emphasis that require primarily upper-division coursework, such as Social Work, Multicultural and Gender Studies, or World Arts and Cultures. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES
9 UNITS FROM THE ARTS:
ART 1A History of Prehistoric through Gothic Art ............... 3
ART 1B History of Renaissance to Mid-Nineteenth Century Art . 3
ART 1C History of Modern to Contemporary Art ............... 3
ART 1D History of Asian Art .................................. 3
ART 1E History of Women in Art ................................ 3
ART 1F History of Islamic Art .................................. 3
ART 1G History of the Arts of Africa, The Americas and Oceania. 3
ART 10 Art Appreciation ...................................... 3
ART 11 History and Aesthetics of Photography (also PHOT 10) . 3
DRMA 13 Introduction to Theater .............................. 3
ENGL 24 Introduction to Literary Criticism and Critical Concepts 3
ENGL 27 Literature by Women .................................. 3
ENGL 29 Introduction to Drama as Literature .................. 3
ENGL 30A American Literature—Beginnings through Civil War . 3
ENGL 30B American Literature—Civil War to the Present .......... 3
ENGL 32 Introduction to Poetry .................................. 3
ENGL 33 Introduction to Shakespeare (The Drama) ............... 3
ENGL 34 Introduction to the Novel ................................ 3
ENGL 35 Introduction to the Short Story ........................ 3
ENGL 37 American Film Masterpieces ............................ 3
ENGL 38 International Film Masterpieces .......................... 3
ENGL 40 The Filmed Novel ...................................... 3
ENGL 41 The Documentary Film: Argumentative Discourse .... 3
ENGL 42 The Documentary Film ................................. 3
ENGL 44 Introduction to Children’s Literature (also HDEV 44) 3
ENGL 45 Introduction to Adolescent Literature ................. 3
ENGL 46A English Literature ..................................... 3
ENGL 46B English Literature ..................................... 3
ENGL 47A World Literature ...................................... 3
ENGL 47B World Literature ...................................... 3
ENGL 48 Literature of Science Fiction ............................ 3
HUM 1 Introduction to Humanities I ............................. 3
HUM 2 Introduction to Humanities II ............................. 3
MUS 2 Music Appreciation ...................................... 3
MUS 11 Introduction and History of Jazz ......................... 3
MUS 12A Survey of Music History and Literature to 1750 .... 3
MUS 12B Survey of Music History and Literature from 1750 to Present .................................................. 3
MUS 13 Introduction to Music: History of Rock and Roll ....... 3

PLUS 9 UNITS FROM CULTURAL STUDIES:
ANTH 2 Cultural Anthropology .................................. 3
ANTH 4 Native Peoples of North America ....................... 3
ANTH 7 Native Peoples of California ............................ 3
ANTH 9 Magic, Witchcraft, Ritual, Myth and Religion ........ 3
ANTH 27 Anthropology of Sex, Gender and Sexuality ......... 3
COMM 7 Intercultural Communication .......................... 3
COMM 10 Survey of Communication Studies .................. 3
DFST 3 American Sign Language III ............................ 4
DFST 4 American Sign Language IV ............................. 4
LIBERAL STUDIES
(See Education)

LIBRARY SCIENCE

LIBRARY/LEARNING RESOURCE CENTER
DEAN: Brian Haley
DIVISION OFFICE: LRC 311
FACTORY: D. Campbell, S. Davenport, S. Montgomery, P. Saulsby, C. Sixt
AREA OFFICE: Library/Learning Resource Center—312
LIAISON COUNSELOR: C. Morris

Ways of accessing information increase almost as rapidly as the amount of information available. Opportunities exist for work in academic, industrial, public and specialized libraries.

Course work in library science trains students to organize, process, manage and disseminate information in its varied forms. Core skills courses in the use of libraries develop a working knowledge of the Sierra College Library/Learning Resource Center and college-level library research skills in general.

LIBRARY MEDIA TECHNICIAN
SKILLS CERTIFICATE
Course work in library science and the attainment of the Library/ Media Technician Skills Certificate will train students to organize, process, manage and disseminate information in its varied forms. The certificate will help students prepare for entry level jobs in business, school, public and college libraries. It will assist those currently employed in non-professional library positions to upgrade existing skills and knowledge. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

LIBS 10A Information Literacy and Lifelong Learning .............. 2
LIBS 10B Library Research Process ...................................... 2
LIBS 20 Technical Services—Circulation .............................. 3
LIBS 25 Technical Services—Media and Distance Learning
  Technologies ................................................................. 3
LIBS 30 Technical Services—Cataloging ................................. 3
LIBS 40 Libraries Today: Issues, Trends, Directions ................. 2
LIBS 95 Internship in Library Science ................................. 2

TOTAL UNITS REQUIRED: 17

LIBRARY SCIENCE COURSES »

LIBS 10A INFORMATION LITERACY AND LIFELONG LEARNING
Units: 2
Hours: 36 lecture
Develops core library skills including general and specialized reference resources, classification systems, print and electronic research tools and methods of Internet research. (CSU, UC-with unit limitation)
### LIBS 10B LIBRARY RESEARCH PROCESS

**Units:** 2  
**Advisory:** Completion of LIBS 10A or equivalent experience  
**Hours:** 36 lecture  
Advanced library research processes utilizing print and electronic resources to conduct higher level research including Internet searches and the evaluation and comparison of resources. (CSU, UC-with unit limitation)

### LIBS 20 TECHNICAL SERVICES—CIRCULATION

**Units:** 3  
**Hours:** 54 lecture  
Technical skills needed to perform circulation responsibilities using: automated circulation systems, patron interview techniques, online Interlibrary Loan and consortium services, collections maintenance and exploration of career opportunities. (CSU)

### LIBS 25 TECHNICAL SERVICES—MEDIA AND DISTANCE LEARNING TECHNOLOGIES

**Units:** 3  
**Hours:** 54 lecture  
Overview of media technologies and distance learning as integral components of electronic libraries. Includes distance learning terminology, definitions, delivery methods, technology, copyright, assessment, accessibility, student support services and key areas of mass communications and media production. (CSU)

### LIBS 28 INDEPENDENT STUDY

**Units:** 1-3  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

### LIBS 30 TECHNICAL SERVICES—CATALOGING

**Units:** 3  
**Hours:** 54 lecture  
A practical introduction to basic rules and practices of cataloging and classification of books and non-book materials. Includes descriptive cataloging using current ALA standards, Library of Congress subject access and Dewey Classification. (CSU)

### LIBS 40 LIBRARIES TODAY: ISSUES, TRENDS, DIRECTIONS

**Units:** 2  
**Hours:** 36 lecture  
Overview of the library science profession exploring interconnection among the different departments of modern library: acquisitions, cataloging, circulation, reference, media and distance learning, career opportunities and future trends in the profession. (CSU)

### LIBS 95 INTERNSHIP IN LIBRARY SCIENCE

**Units:** 0.5-4  
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

### MANAGEMENT

(See Business)

### MARKETING

(See Business)

### SCIENCES AND MATHEMATICS

DEAN: Heather Roberts  
ASSOCIATE DEAN: Michael Kane  
DIVISION OFFICE: V 211  
LIAISON COUNSELORS: M. Moon, S. Muraki, P. Neal

Mathematics is a dynamic and developing field of study. It is the foundation and language of all scientific endeavor. Mathematics contributes in direct and important ways to business, finance, engineering, health and public policy.

A degree in Mathematics or Statistics provides many challenging and rewarding career opportunities. These include teaching, research in engineering fields, molecular structures, genetics and medicine, robotics, digital imagery, computer-aided design, economic forecasting and environmental design and modeling.

TRANSFER AND MAJOR REQUIREMENTS in Mathematics are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Assessment testing is available at the Assessment Center in the Counseling Center.
MATHEMATICS FOR TRANSFER

AS-T DEGREE

The Associate in Science in Mathematics for Transfer (AS-T) degree includes curriculum focusing on the mastery of calculus, linear algebra and differential equations. Students will master these concepts using algebraic and visual models in pure and applied contexts and be able to communicate mathematically.

The Associate in Science in Mathematics for Transfer degree prepares students to transfer into the CSU system to complete a bachelor's degree in Mathematics. Students completing the Associate in Science in Mathematics for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor's degree.

To earn the Associate in Science in Mathematics for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

- completion of the major requirements with grades of C or better; and
- certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 30 Analytical Geometry and Calculus I</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 31 Analytical Geometry and Calculus II</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 32 Analytical Geometry and Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 33 Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 18-20

MATHEMATICS

A.A. OR A.S. DEGREE

The Mathematics major recognizes a concentration in the field of Mathematics. Successful completion of the curriculum in Mathematics and the associated electives prepare Mathematics students for transfer to four-year colleges or universities. The program in Mathematics outlined below is typical of lower-division requirements for four-year colleges and universities: some requirements vary from college to college. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 30 Analytical Geometry and Calculus I</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 31 Analytical Geometry and Calculus II</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 32 Analytical Geometry and Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 33 Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 18-20

PLUS 3-5 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 12 Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 27 Visual Basic .NET Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 46 System Programming with C</td>
<td>3</td>
</tr>
<tr>
<td>MATH 10 Problem Solving</td>
<td>4</td>
</tr>
<tr>
<td>MATH 13 Elementary Statistics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 15 Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 17 Concepts of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 18 The Nature of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 205 Principles of Physics: Mechanics AND PHYS 205L Principles of Physics Laboratory: Mechanics</td>
<td>5</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21-25

Alternatives to Traditional Lecture Format for Algebra

Some instructors teach algebra using a traditional lecture format while others use platforms that require the use of a computer and/or the Internet. Check the Mathematics Department Web Page at http://math.sierracollege.edu/ to determine the appropriate platform for your learning style.

MATHEMATICS COURSES

*All prerequisite courses must be completed with grades of “C” or better.

Two years of high school algebra means “Algebra I and Algebra II.”

*It is strongly recommended that students without recent math coursework complete the matriculation assessment process. Contact the Assessment Center for further information.
MATHEMATICAL COURSE PROGRESSION

Arithmetic Review
Math 581 (4)

Pre Algebra
Math 582 (4)

Elementary Algebra
Math A (4/5)

Intermediate Algebra
Math D (4/5)

Problem Solving
Math 10 (4)

Statistics
Math 13 (4)

Discrete Math
Math 15 (4)

Concepts of Math
Math 17 (3)

The Nature of Mathematics
Math 18 (3)

Finite Math
Math 20 (3)

Modern Business Math
Math 24 (3)

College Algebra
Math 12 (4)

Business Calculus
Math 42 (4)

Calculus—Life & Social Sciences
Math 16A (4)

Trigonometry
Math 8 (4)

Pre-Calculus
Math 29 (4)

Calculus I
Math 30 (4/5)

Calculus II
Math 31 (4/5)

Calculus III
Math 32 (4)

Diff Equations & Linear Algebra
Math 33 (6)
MATHEMATICS COURSES

MATH A ELEMENTARY ALGEBRA
Units: 4-5
Prerequisite: Completion of MATH 582 with grade of “C” or better or placement by matriculation assessment process
Hours: 72 lecture (4 units); 90 lecture (5 units)
Real numbers and their properties, first degree equations and inequalities, graphs of linear equations in two variables, systems of linear equations in two variables, properties of integer exponents, polynomial operations, basic factoring, rational expressions, radical expressions, quadratic equations and applied problems and problem solving. (not transferable)

MATH B PLANE GEOMETRY
Units: 4
Prerequisite: Completion of MATH A with grade of “C” or better, or placement by matriculation assessment process
Hours: 72 lecture
Study of points, lines, angles, polygons, triangles, similarity, congruence, geometric proofs, area, volume, perimeter, the circle, right triangle trigonometry. (not transferable)

MATH D INTERMEDIATE ALGEBRA
Units: 4-5
Prerequisite: Completion of MATH A with grade of “C” or better or placement by matriculation assessment process
Hours: 72 lecture (4 units); 90 lecture (5 units)
Exponents, radicals, complex numbers, factoring, linear and quadratic equations and inequalities; linear, quadratic, exponential and logarithmic functions; graphing and systems of equations. (not transferable)

MATH 8 TRIGONOMETRY
Units: 4
Prerequisite: Completion of MATH D with grade of “C” or better, or placement by matriculation assessment process
Hours: 72 lecture
Fundamentals of trigonometry. Topics include review of algebraic functions, definitions of trigonometric and circular functions, graphs, identities and applications. Other material includes solving trigonometric equations, solving triangles using the Laws of Sines and Cosines, vectors, polar coordinates and graphs, polar representations of complex numbers and conic sections. (CSU)

MATH 10 PROBLEM SOLVING
Units: 4
Prerequisite: Two years of high school algebra or MATH D with grade of “C” or better, or placement by matriculation assessment process
Hours: 72 lecture
Individual and small-group problem solving geared toward real life situations and nontraditional problems. Problem solving strategies include: draw a diagram, eliminate possibilities, make a systematic list, look for a pattern, guess and check, solve an easier related problem, subproblems, use manipulatives, work backward, act it out, unit analysis, use algebra, finite differences and many others. Divergent thinking and technical communication skills of writing and oral presentation are enhanced. Designed to teach students to think more effectively and vastly increase their problem solving ability. (CSU)

MATH 12 COLLEGE ALGEBRA
Units: 4
Prerequisite: Completion of MATH D with grade of “C” or better, or placement by matriculation assessment process
Hours: 72 lecture
Study of algebra topics beyond MATH D; including functions, graphs, logarithms, systems of equations, matrices, analytic geometry sequences, mathematical induction and introduction to counting techniques. (CSU, UC-with unit limitation)

MATH 13 ELEMENTARY STATISTICS
Units: 4
Prerequisite: Two years of high school algebra or MATH D with grade of “C” or better, or placement by matriculation assessment process
Hours: 72 lecture
Introduction to the basic concepts of statistics. Emphasis on statistical reasoning and application of statistical methods. Areas included: graphical and numerical methods of descriptive statistics; basic elements of probability and sampling; binomial, normal and Student’s t distributions; confidence intervals and hypothesis testing for one and two population means and proportions; chi-square tests for goodness-of-fit and independence; linear regression and correlation; and one-way analysis of variance (ANOVA). (CSU, UC-with unit limitation)

MATH 15 DISCRETE MATHEMATICS
Units: 4
Prerequisite: Completion of MATH 30 with a grade of “C” or better
Hours: 72 lecture
Study of set theory, relations and functions, logic, combinatorics and probability, algorithms, computability, matrix algebra, graph theory, recurrence relations, number theory including modular arithmetic. Various forms of mathematical proof are developed: proof by induction, proof by contradiction. (CSU, UC-with unit limitation)
MATHEMATICS

MATH 20 FINITE MATHEMATICS
Units: 3
Prerequisite: Completion of MATH D with grade of “C” or better, or placement by matriculation assessment process
Hours: 54 lecture
Review of functions; systems of equations; mathematics of finance; matrices and their applications; linear programming; introduction to probability and statistics; Markov Chains; and decision making. (CSU, UC-with unit limitation)

MATH 24 MODERN BUSINESS MATHEMATICS
Units: 3
Prerequisite: Two years of high school algebra or MATH D with grade(s) of “C” or better, or placement by matriculation assessment process
Hours: 54 lecture
Applications of mathematics in economics and business contexts. Topics include tables and graphs, functions, finance (interest and exponential models), rates of change including applications and optimization and linear programming. (CSU)

MATH 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

MATH 29 PRE-CALCULUS MATHEMATICS
Units: 4
Prerequisite: Completion of MATH 8 with grade of “C” or better, or placement by matriculation assessment process
Hours: 72 lecture
Preparation for calculus. Study of polynomials, rational functions, exponential and logarithmic functions, trigonometric functions, systems of linear equations, matrices, determinants, rectangular and polar coordinates, conic sections, complex number systems, mathematical induction, binomial theorem and sequences. Recommended for students who plan to take MATH 30. (CSU, UC-with unit limitation)

MATH 30 ANALYTICAL GEOMETRY AND CALCULUS I
Units: 4-5
Prerequisite: Completion of MATH 8 and either MATH 12 or 29 with grades of “C” or better, or placement by matriculation assessment process
Hours: 72 lecture (4 units); 90 lecture (5 units)
Introduction to differential and integral calculus. Content includes limits, continuity, differentiation and integration of algebraic, trigonometric, exponential, logarithmic and other transcendental functions; as well as application problems. (CSU, UC-with unit limitation)
MATH 31 ANALYTICAL GEOMETRY AND CALCULUS II  
Units: 4-5  
Prerequisite: Completion of MATH 30 with grade of “C” or better  
Hours: 72 lecture (4 units); 90 lecture (5 units)  
Continuation of MATH 30. Content includes techniques of integration, improper integrals, applications of integration, infinite series, parametric equations and polar coordinates. (CSU, UC-with unit limitation)

MATH 32 ANALYTICAL GEOMETRY AND CALCULUS III  
Units: 4  
Prerequisite: Completion of MATH 31 with grade of “C” or better  
Hours: 72 lecture  
Continuation of MATH 31. Vectors and analytic geometry in the plane and space; functions of several variables; partial differentiation, multiple integrals and application problems; vector functions and their derivatives; motion in space; and surface and line integrals, Stokes’ and Green’s Theorems and the Divergence Theorem. (C-ID MATH 230) (CSU, UC)

MATH 33 DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA  
Units: 6  
Prerequisite: Completion of MATH 31 with grade of “C” or better  
Advisory: MATH 32 strongly recommended  
Hours: 108 lecture  
First and second order ordinary differential equations, linear differential equations, numerical methods and series solutions, Laplace transforms, modeling and stability theory, systems of linear differential equations, matrices, determinants, vector spaces, linear transformations, orthogonality, eigenvalues and eigenvectors. (CSU, UC)

MATH 42 BUSINESS CALCULUS  
Units: 4  
Prerequisite: Completion of MATH D with grade of “C” or better, or placement by matriculation assessment process  
Advisory: Completion of MATH 12 strongly recommended, especially for students who have not recently taken MATH D  
Hours: 72 lecture  
Introduction to differential and integral calculus, with particular emphasis on applications in the fields of business, economics and social sciences. Includes: concepts of a function, limits, derivatives, integrals of polynomial, exponential and logarithmic functions, optimization problems and calculus of functions of more than one variable. Not recommended for students with credit for MATH 30. (CSU, UC-with unit limitation)

MATH 300 SELECTED TOPICS IN MATHEMATICS  
Units: 0.5-4  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

MATH 581 ARITHMETIC REVIEW  
Units: 4  
Prerequisite: Placement by matriculation assessment process  
Hours: 108 (54 lecture; 54 laboratory which may be scheduled TBA)  
Basic review of fundamental arithmetic operations with whole numbers, decimals, fractions, ratio and proportion and percentages. Not open to students who have completed MATH 581S. (not degree applicable)

MATH 581S SUMMER BRIDGE ARITHMETIC REVIEW  
Units: 3  
Prerequisite: Placement by matriculation assessment process  
Hours: 54 lecture  
Summer Bridge Program with accelerated curriculum. Basic review of fundamental arithmetic operations with whole numbers, decimals, fractions, ratio and proportion and percentages. Not open to students who have completed MATH 581. (not degree applicable)

MATH 582 PRE-ALGEBRA  
Units: 4  
Prerequisite: Completion of MATH 581 or 581S with grade of “C” or better  
Advisory: MATH 32 strongly recommended  
Hours: 108 lecture  
First and second order ordinary differential equations, linear differential equations, numerical methods and series solutions, Laplace transforms, modeling and stability theory, systems of linear differential equations, matrices, determinants, vector spaces, linear transformations, orthogonality, eigenvalues and eigenvectors. (CSU, UC with unit limitation)

MATH 584 MATH SUCCESS-OVERCOMING MATH ANXIETY  
Units: 1  
Hours: 18 lecture  
Designed to assist students to recognize common fears and misconceptions of mathematics and develop personal strategies to overcome math and test anxiety. Specific study skills and strategies are discussed. Individual math learning styles are analyzed. (not degree applicable)
MECHATRONICS
(Formerly Computer Integrated Electronics)

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION
DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
FACULTY: S. Gillette, M. Halbern, T. Osladil
LIAISON COUNSELORS: C. Axton, Rebecca Ortega, D. Quadros

Mechatronics is the study of electronics, mechanics and computer control in one cohesive hands-on, project-based program. The field of Mechatronics includes robotics, industrial automation, industrial process control and electromechanical systems. Mechatronics systems include ATMs and copy machines, elevators, medical diagnostic equipment, automated package handling, ski lifts, water processing facilities, industrial robots and large-scale food and beverage manufacturing. There are associate degree and certificate options. More information can be found at the Sierra College Mechatronics Department website: http://www.realskillsrealjobs.com.

MECHATRONICS TECHNOLOGY
A.A. OR A.S. DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT

Successful completion of the curriculum in Mechatronics Technology prepares students for positions in businesses and industries that manufacture, utilize, or repair equipment incorporating electronics, mechanics, pneumatics, hydraulics and programming. For the degree, students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53). A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECH 4 Fundamentals of Mechatronics</td>
<td>4</td>
</tr>
<tr>
<td>MECH 10 Fundamentals of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>MECH 14 Fabrication Techniques</td>
<td>2</td>
</tr>
<tr>
<td>MECH 25 Personal Computer Configuration and Repair</td>
<td>4</td>
</tr>
<tr>
<td>MECH 44 Mechatronic Processes and Materials</td>
<td>2</td>
</tr>
<tr>
<td>MECH 54 Mechatronics System</td>
<td>4</td>
</tr>
<tr>
<td>MECH 90 Microcontroller Embedded Systems</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL UNITS REQUIRED:</strong></td>
<td></td>
</tr>
</tbody>
</table>

Recommended sequence of courses: MECH 4, MECH 10, MECH 14, MECH 25, MECH 44, MECH 54, MECH 90

ELECTRO-MECHANICAL SKILLS CERTIFICATE

Completion of the skills certificate provides students with the underlying principles and hands-on techniques of basic electronics and basic mechanics, thereby preparing them for entry-level electro-mechanical technician positions. Emphasis is on use of electronic test equipment for troubleshooting as well as tools and processes of manufacturing as applied to industrial materials. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECH 1 The Science of Electronics</td>
<td>3</td>
</tr>
<tr>
<td>MECH 10 Fundamentals of Electronics</td>
<td>4</td>
</tr>
<tr>
<td>MECH 44 Mechatronic Processes and Materials</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL UNITS REQUIRED:</strong></td>
<td></td>
</tr>
</tbody>
</table>

MECHATRONICS COURSES »

MECH 1 THE SCIENCE OF ELECTRONICS
Formerly known as CIE 1
Units: 3
Hours: 54 lecture
Survey of electronics technology presented in the context of the principles of science. Application of the scientific method to topics ranging from basic circuits to microprocessors, including electronic music, robotics, electric vehicles, fiber optics, semiconductors and medical imaging. Scientific, historical, political and economic connections to electronics technology. (CSU)

MECH 4 FUNDAMENTALS OF MECHATRONICS
Formerly known as CIE 4
Units: 4
Hours: 108 (54 lecture, 54 laboratory)
Introduction to mechatronics, combining electronics, mechanics, pneumatics and hydraulics, under computer control as applied to robotics and automation. Presented through hands-on, project-based experiments that demonstrate industrial applications. (CSU)

MECH 8 INTRODUCTION TO ELECTRONICS
Formerly known as CIE 8
Units: 3
Hours: 54 lecture
General principles, concepts and terminology of computer integrated electronics. Course material is at an elementary technical and mathematical level. (CSU)

MECH 10 FUNDAMENTALS OF ELECTRONICS
Formerly known as CIE 10
Units: 4
Hours: 126 (54 lecture, 72 laboratory)
A fundamental study of electronic devices, circuits and systems as applied to audio, video, robotics and computers. Presented through hands-on, project-based experiments. (CSU)
MECH 14 FABRICATION TECHNIQUES
Formerly known as CIE 14
Units: 2
Hours: 72 (18 lecture, 54 laboratory)
Introductory course covering the function and construction of electronic projects and equipment. Includes the design and fabrication of enclosures, single and double-sided printed circuit boards, safe use of power and hand tools, through hole and surface mount soldering, rework techniques and wiring. (CSU)

MECH 25 PERSONAL COMPUTER CONFIGURATION AND REPAIR
Formerly known as CIE 25/CIS 25/CST 25
Units: 4
Hours: 108 (54 lecture, 54 laboratory)
Concentrated study of personal computer hardware and operating system software installation, configuration, upgrading, troubleshooting and repair. Hardware topics include motherboards, peripheral cards, communication protocols and cabling. Software topics include basic input output systems (BIOS) and power on system test (POST) procedures, disk operating system (DOS) and Windows operation essentials, local area network (LAN) fundamentals and troubleshooting programs. (CSU)

MECH 28 INDEPENDENT STUDY
Formerly known as CIE 28
Units: 1-3
Hours: 54 laboratory hours per unit
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

MECH 44 MECHATRONIC PROCESSES AND MATERIALS
Formerly known as CIE 44
Units: 2
Hours: 72 (18 lecture, 54 laboratory)
Application of tools and materials required for the design, installation and repair of mechatronic systems. Each student will fabricate a final project applying system-based mechatronic principles and skills. (CSU)

MECH 54 MECHATRONICS SYSTEM
Formerly known as CIE 54
Units: 4
Prerequisite: Completion of MECH 4 with grade of “C” or better
Hours: 108 (54 lecture, 54 laboratory)
Full integration of mechatronic principles into complete closed-loop systems such as automated production equipment and industrial robots. Topics include sensors, optical encoders, analog-to-digital and digital-to-analog conversion, closed-loop AC and DC motor control, hydraulic power concepts, hydraulic motors, pneumatic and hydraulic valves and actuators and fluid power computer simulation tools. (CSU)

MECH 90 MICROCONTROLLER EMBEDDED SYSTEMS
Formerly known as CIE 90
Units: 4
Prerequisite: Completion of MECH 10 and MECH 14 with grades of “C” or better
Hours: 108 (54 lecture, 54 laboratory)
Study of microcontroller based embedded systems using industry standard hardware and development software. Topics and laboratory exercises covering system architecture, applications of embedded systems, real world interfacing, software development, test and troubleshooting techniques. (CSU)

MECH 95 INTERNSHIP IN MECHATRONICS
Formerly known as CIE 95
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

MECH 300 SELECTED TOPICS IN MECHATRONICS
Formerly known as CIE 300
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU)

MECH 400 SELECTED TOPICS IN MECHATRONICS
Formerly known as CIE 400
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "400" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)
MUSIC

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: S. Cunningham, G. McLaughlin, J. Stave Viemeister
LIAISON COUNSELOR: E. Farrelly

It is the mission of the Music Department to provide for every level of student and community member an affordable and accessible musical education in an atmosphere that embraces academic excellence, diversity and innovation. Whether students are interested in musical career and technical training, transfer to a four year institution, or lifelong learning, the Music Department will help foster a deeper awareness of the value that music plays in our students and in our community. The Sierra College Music Department encourages students and community members alike to follow their musical passion by developing their musical skills so they can make significant musical contributions to their lives and communities.

TRANSFER MAJOR REQUIREMENTS in Music are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements.

MUSIC
A.A. OR A.S. DEGREE

The Music degree includes vocal and instrumental components, as well as courses in music, history and theory. The general program is designed to provide students with a foundation in music theory and history. Performance opportunities in both vocal and instrumental music enhance a student’s understanding and skill level. The Music degree prepares students for careers in music performance, education, composition, conducting, retail music industry, music publishing and music therapy. The degree also prepares students for further study at a four-year institution. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 3A Ear Training I</td>
<td>2</td>
</tr>
<tr>
<td>MUS 3B Ear Training II</td>
<td>2</td>
</tr>
<tr>
<td>MUS 6A Music Theory I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 6B Music Theory II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 9A Music Theory III</td>
<td>3</td>
</tr>
<tr>
<td>MUS 9B Music Theory IV</td>
<td>3</td>
</tr>
<tr>
<td>MUS 12A Survey of Music History and Literature to 1750</td>
<td>3</td>
</tr>
</tbody>
</table>

MUS 12B Survey of Music History and Literature from 1750 to Present ............................................. 3

PLUS 4 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 40A Beginning Piano I</td>
<td>2</td>
</tr>
<tr>
<td>MUS 40B Beginning Piano II</td>
<td>2</td>
</tr>
<tr>
<td>MUS 40C Intermediate Piano I</td>
<td>2</td>
</tr>
<tr>
<td>MUS 40D Intermediate Piano II</td>
<td>2</td>
</tr>
</tbody>
</table>

PLUS 4 ADDITIONAL UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 42 Chamber Singers</td>
<td>2-4</td>
</tr>
<tr>
<td>MUS 46 Jazz Ensemble</td>
<td>2-4</td>
</tr>
<tr>
<td>MUS 47 Vocal Jazz Ensemble</td>
<td>2-4</td>
</tr>
<tr>
<td>MUS 48 Concert Choir</td>
<td>2-4</td>
</tr>
<tr>
<td>MUS 50 Wind Ensemble</td>
<td>2-4</td>
</tr>
<tr>
<td>MUS 54 Symphonic Band</td>
<td>2-4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 30

MUSIC COURSES

MUS 2 MUSIC APPRECIATION

Units: 3
Hours: 54 lecture

Foundation course recommended for all students seeking a basis for the understanding and enjoyment of music. Discussion of music elements, orchestral instruments, vocabulary and historical styles and periods using time-proven masterworks. (CSU, UC)

MUS 3A EAR TRAINING I

Units: 2

Prerequisite: Completion of MUS 10 with grade of “C” or better or equivalent knowledge of musical notation

Advisory: Completion of MUS 40A with grade of “C” or better or equivalent piano skill

Hours: 54 (18 lecture, 36 activity)

Develops skills used for musical dictation of rhythms, intervals, chords and melodies; plus sight singing of short, simple diatonic melodies. (CSU, UC)

MUS 3B EAR TRAINING II

Units: 2

Prerequisite: Completion of MUS 3A with grade of “C” or better or passing score on examination

Advisory: Completion of MUS 40A with grade of “C” or better or equivalent piano skill

Hours: 54 (18 lecture, 36 activity)

Continuation of MUS 3A through continued study of the aspects of aural recognition and sight singing. Two-part dictation, recognition of augmented and diminished triads and seventh chords. (CSU, UC)
MUS 4A ADVANCED EAR TRAINING I
Units: 2
Prerequisite: Completion of MUS 3B with grade of "C" or better
Advisory: Completion of MUS 40B with grade of "C" or better, or equivalent piano skill
Hours: 54 (18 lecture, 36 activity)
Continuation of MUS 3B through study of the aspects of aural recognition. Advanced sight singing, chord recognition and formal analysis. Melodic dictation with modulation. Introduction of four-part harmonic dictation. (CSU, UC)

MUS 4B ADVANCED EAR TRAINING II
Units: 2
Prerequisite: Completion of MUS 4A with grade of "C" or better
Advisory: Completion of MUS 40B with grade of "C" or better, or equivalent piano skill
Hours: 54 (18 lecture, 36 activity)
Advanced sight singing, melodic dictation, harmonic dictation, chord recognition. Introduces listening to and understanding atonal music. (CSU, UC)

MUS 6A MUSIC THEORY I
Units: 3
Prerequisite: Completion of MUS 10 with grade of "C" or better or equivalent knowledge of music notation
Advisory: Completion of MUS 40A with grade of "C" or better or equivalent piano skill; Completion of or concurrent enrollment in MUS 3A
Hours: 54 lecture
Examination of topics in music theory; incorporates the following concepts: music notation, tonality, intervals, transposition, chords construction, non-chord tones, writing melody, music textures. (CSU, UC)

MUS 6B MUSIC THEORY II
Units: 3
Prerequisite: Completion of MUS 6A with grade of "C" or better or passing score on examination
Advisory: Completion of MUS 40B with grade of "C" or better or equivalent piano playing skill; Completion of or concurrent enrollment in MUS 3B
Hours: 54 lecture
Builds on the concepts introduced in MUS 6A. In addition, through writing and analysis, includes secondary dominants, modulation, binary and ternary forms. Diminished seventh and non-dominant chords will be addressed. (CSU, UC)

MUS 9A MUSIC THEORY III
Units: 3
Prerequisite: Completion of MUS 6B with grade of "C" or better or passing score on examination
Advisory: Completion of MUS 40C with grade of "C" or better or equivalent piano skills; completion of or concurrent enrollment in MUS 4A
Hours: 54 lecture
Builds on the concepts introduced in MUS 6B. In addition, through writing and analysis, includes chromatic harmonies, altered chords, remote modulations, introductory rhythmic counterpoint, 18th century polyphony, inventions and fugues, variation techniques, sonata and rondo forms. (CSU, UC)

MUS 9B MUSIC THEORY IV
Units: 3
Prerequisite: Completion of MUS 9A with grade of "C" or better
Advisory: Completion of MUS 40C with grade of "C" or better or equivalent piano skills; completion with grade of "C" or better or concurrent enrollment in MUS 4B
Hours: 54 lecture
Study of Post-Romantic, twentieth century and current techniques including extended and chromatic harmonies, foreign modulations, non-functional harmonies, atonality, twelve-tone technique, set theory, use of electronic resources and current trends. (CSU, UC)

MUS 10 MUSIC FUNDAMENTALS
Units: 3
Hours: 54 lecture
An elementary course designed to provide the basic musical skills, knowledge and competencies necessary for reading or listening to music. Covers elements of music, scales, notation, rhythm and sight reading. No prior musical training necessary. Note: Not open to students who are taking or have successfully completed MUS 3A-3B or MUS 6A-6B. (CSU, UC-with unit limitation)

MUS 11 INTRODUCTION AND HISTORY OF JAZZ
Units: 3
Hours: 54 lecture
Introduction to the history of jazz from traditional European, African and Latin origins to various contemporary and fusion styles. Contributions of great jazz artists studied. Focus placed on developing critical skills applicable to listening to jazz arrangements and improvisation. (CSU, UC)

MUS 12A SURVEY OF MUSIC HISTORY AND LITERATURE TO 1750
Units: 3
Hours: 54 lecture
Study of the history of Western art music from antiquity through the Baroque Era including the influences of the Catholic Church, contributions of various personalities and cultures with selected readings, recordings and score study. (CSU, UC)
MUS 12B SURVEY OF MUSIC HISTORY AND LITERATURE FROM 1750 TO PRESENT
Units: 3
Hours: 54 lecture
Study of the history of Western art music from the end of the Baroque era to the present, including contributions of other cultures with selected readings and recordings. (CSU, UC)

MUS 13 INTRODUCTION TO MUSIC: HISTORY OF ROCK AND ROLL
Units: 3
Hours: 54 lecture
History of Rock and Roll music in social, political, cultural and economic context. Includes guided listening and video presentations to show the evolution of Rock from its roots to current stylistic trends. (CSU, UC)

MUS 14 INTRODUCTION TO COMMERCIAL MUSIC PRODUCTION
Units: 3
Advisory: Completion of MECH 10 with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Emphasis on audio concepts including basic and essential audio theory, development of critical listening skills and perception of audio in the form of acoustic and electrical energy. Discussion and exercises in signal flow, recording facility configuration, sound reinforcement system set-up and working within different acoustic environments. Introductory training in equipment selection and placement as well as basic tracking techniques are offered. (CSU)

MUS 15 AUDIO RECORDING
Units: 3
Prerequisite: Completion of MUS 14 with grade of “C” or better
Advisory: Completion of MECH 10 with grade of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Studio production techniques with added training on close miking of individual instruments. Coverage of analogue and digital multitrack recording techniques. Increased opportunity for practical implementation of signal processing techniques and use of related equipment such as multi FX and dynamics processors. Small group multitrack projects required. (CSU)

MUS 25 INTRODUCTION TO MUSIC BUSINESS
Units: 3
Advisory: Completion of BUS 20 with grade of “C” or better
Hours: 54 lecture
Focus on the business side of the music industry including marketing, publishing, copyrights and licensing and dealing with unions, guilds, artists and managers. Following a song from inception to production including recordings, contracts and merchandising. Exploration of non-performance career options in music. (CSU)

MUS 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

MUS 39A BEGINNING VOICE
Formerly known as MUS 39
Units: 2
Hours: 54 (18 lecture, 36 activity)
Introductory study of efficient vocal production and performance. Beginning exercises for breath management, extending the vocal range, increasing vocal resonance and volume and singing in an expressive manner introduced. Vocal exercises and solos are performed to demonstrate these skills. (CSU, UC)

MUS 39B INTERMEDIATE VOICE
Units: 2
Prerequisite: Completion of MUS 39A with grade of “C” or better
Hours: 54 (18 lecture, 36 activity)
In-depth study of specific elements of efficient vocal technique and performance. Includes vowel purity, belt singing and managing stage fright. Vocal exercises and songs from various music styles are performed, including selections made by students. (CSU)

MUS 39C ADVANCED VOICE I
Units: 2
Prerequisite: Completion of MUS 39B with grade of “C” or better
Hours: 54 (18 lecture, 36 activity)
In-depth study of specific elements of efficient vocal technique and performance. Includes breath management in relation to posture, expressive singing via physical movement, unifying the register and range extension, resonance and vocal registers, expressive singing, stage presence and the International Phonetic Alphabet (IPA) to sing Italian songs. Vocal exercises and songs from various music styles are performed including selections made by students. (CSU)

MUS 39D ADVANCED VOICE II
Units: 2
Prerequisite: Completion of MUS 39C with grade of “C” or better
Hours: 54 (18 lecture, 36 activity)
In-depth study of specific elements of efficient vocal technique and performance. Includes breath management using an efficient onset and release, managing the performance, resonance balancing using consonants and song analysis to prepare a vocal piece for performance. (CSU)
MUS 40A BEGINNING PIANO I
Units: 2
Prerequisite: Eligibility for ENGL 50 or ENGL N or equivalent
Hours: 54 (36 lecture, 18 laboratory)
Beginning instruction in the fundamentals of playing piano. Note reading and basic playing techniques are introduced. Designed to develop musicianship and facility. (CSU, UC)

MUS 40B BEGINNING PIANO II
Units: 2
Prerequisite: Completion of MUS 40A with grade of “C” or better or equivalent piano skill with permission of instructor
Hours: 54 (36 lecture, 18 laboratory)
Continuation of MUS 40A using more advanced materials. Developing skills in harmonizing a melody, playing scales, sight-reading, chord inversions and repertoire. (CSU, UC)

MUS 40C INTERMEDIATE PIANO I
Units: 2
Prerequisite: Completion of MUS 40B with grade of “C” or better or equivalent with permission of the instructor
Hours: 54 (36 lecture, 18 laboratory)
Continuation of MUS 40B, with music drawn from intermediate levels. Ensemble playing, sight-reading and harmonization skills and knowledge. Individual needs and interests considered. (CSU, UC)

MUS 40D INTERMEDIATE PIANO II
Units: 2
Prerequisite: Completion of MUS 40C with grade of “C” or better or equivalent with permission of instructor
Hours: 54 (36 lecture, 18 laboratory)
Continuation of MUS 40C, with music drawn from intermediate, late intermediate to early advanced levels. Ensemble playing, sight-reading, harmonization and improvisation developed. Individual needs and interests considered. (CSU, UC)

MUS 42 CHAMBER SINGERS
Units: 2
Hours: 54 (36 lecture, 18 laboratory)
Explores the literature and performance practices of small vocal ensembles from the Renaissance to the present. Audition for vocal placement required. Public performances, festivals and field trips required. May be taken four times for credit. (CSU, UC)

MUS 46 JAZZ ENSEMBLE
Units: 2
Advisory: Three to four years experience on instrument or equivalent
Hours: 54 (18 lecture, 36 activity)
Rehearsal and performance of literature written for instrumental jazz ensemble, with emphasis on current musical trends. Study of improvisation. Consideration of career possibilities in the field. Public performances required. May be taken four times for credit. (CSU, UC)

MUS 47 VOCAL JAZZ ENSEMBLE
Units: 2
Advisory: Previous choral experience or equivalent
Hours: 54 (18 lecture, 36 activity)
Study and performance of modern and vocal jazz styles, tone production and rhythms. Public performances and field trips required. May be taken four times for credit. (CSU, UC)

MUS 48 CONCERT CHOIR
Units: 2
Advisory: Students will audition to identify vocal type
Hours: 54 (18 lecture, 36 activity)
A variety of choral experience performing repertoire, both sacred and secular, from the medieval, baroque, classical, romantic and modern periods of music history. Focuses on performance practice, musical style and poetic interpretation. May be taken four times for credit. (CSU, UC)

MUS 49 JAZZ IMPROVISATION AND PERFORMANCE PRACTICE
Units: 2
Advisory: Three to four years experience on instrument or equivalent
Hours: 54 (18 lecture, 36 activity)
Fundamentals of jazz improvisation, including chord-scale application. Analysis of diverse styles of the great jazz artists through recordings and transcriptions. Development of a unique improvisational style as applied to performance. May be taken four times for credit. (CSU, UC)

MUS 50 WIND ENSEMBLE
Units: 2
Advisory: Three to four years experience on instrument or equivalent
Hours: 54 (18 lecture, 36 activity)
Training in the interpretation and performance of standard band literature, with emphasis on sight reading new band music. Advanced students given the opportunity for solo work. At least one public performance given each semester. May be taken four times for credit. (CSU, UC)

MUS 54 SYMPHONIC BAND
Units: 2
Advisory: Three to four years experience on instrument or equivalent
Hours: 54 (18 lecture, 36 activity)
Training in the interpretation and performance of standard band literature, with emphasis on sight reading new band music. Advanced students given the opportunity for solo work. At least one public performance each semester. May be taken four times for credit. (CSU, UC)
**NATURAL SCIENCE**

**SCIENCES AND MATHEMATICS**
DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211

**NATURAL SCIENCE**
**A.A. OR A.S. DEGREE**
The Natural Science degree is designed for students who are pursuing transfer majors in the Natural Sciences, including Astronomy, Biological Science, Chemistry, Geography, Geology, Physics and related disciplines. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

**REQUIRED COURSES**
**18 UNITS FROM THE FOLLOWING:**
AGRI 198 Food, Society and the Environment .................. 3
AGRI 221 Introduction to Soil Science .......................... 3
ANTH 1 Physical Anthropology .................................. 3
ANTH 1L Physical Anthropology Laboratory .................... 1
ANTH 10 Introduction to Forensic Anthropology ............... 3
ASTR 2 Introduction to Planetary Systems ...................... 3
ASTR 5 Introduction to Stars, Galaxies and the Universe ....... 3
ASTR 7 Life in the Universe ..................................... 3
ASTR 10 Elementary Astronomy ................................ 3
ASTR 11 Observational Astronomy ................................ 1
ASTR 14 Astrophotography and Imaging ........................ 1
ASTR 25 Frontiers in Astronomy .................................. 3
BIOL 1 General Biology .......................................... 4
BIOL 2 Botany ...................................................... 4.5
BIOL 3 General Zoology .......................................... 4
BIOL 4 Microbiology .............................................. 5
BIOL 5 Human Anatomy .......................................... 4
BIOL 6 Human Physiology ........................................ 5
BIOL 7A Human Anatomy I ....................................... 2.5
BIOL 7B Human Anatomy II ..................................... 2.5
BIOL 8A Microbiology ............................................ 2.5
BIOL 8B Microbiology ............................................ 2.5
BIOL 10 Introduction to Biology ................................ 3
BIOL 11 Concepts of Biology .................................... 4
BIOL 14 Natural History, Ecology and Conservation .......... 4
BIOL 15 Marine Biology .......................................... 4
BIOL 21 Horticultural Plant Science (also AGRI 156) ........ 4
BIOL 22 Introduction to Botany ................................ 4
BIOL 24 Wildland Trees and Shrubs (Dendrology) (also AGRI 163) 4
BIOL 33 Introduction to Zoology ................................ 4
BIOL 44 Introduction to Microbiology ........................... 3

**SIERRA COLLEGE CATALOG 2013–2014**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 55</td>
<td>General Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 56</td>
<td>Biology: A Human Perspective</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 56L</td>
<td>Biology: A Human Perspective (Laboratory)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 1A</td>
<td>General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 1B</td>
<td>General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 2A</td>
<td>Introduction to Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 2B</td>
<td>Introduction to Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 3A</td>
<td>General Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3B</td>
<td>General Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 5</td>
<td>Chemistry—Quantitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 12A</td>
<td>Organic Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 12B</td>
<td>Organic Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>ESCI 1</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 1L</td>
<td>Physical Geology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ESCI 2</td>
<td>California Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 3</td>
<td>Historical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 3L</td>
<td>Historical Geology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ESCI 6</td>
<td>Introduction to Minerals and Rocks</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 10</td>
<td>Introduction to Earth Science</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 10L</td>
<td>Introduction to Earth Science Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ESCI 14</td>
<td>Natural Disasters</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 15</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>ESCI 15L</td>
<td>Introduction to Oceanography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ESS 1</td>
<td>The Environment and the Human Impact</td>
<td>3</td>
</tr>
<tr>
<td>ESS 10</td>
<td>Conservation of Natural Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1L</td>
<td>Physical Geography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 4</td>
<td>Weather and Climate</td>
<td>3</td>
</tr>
<tr>
<td>MATH 8</td>
<td>Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>MATH 12</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 13</td>
<td>Elementary Statistics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 16A</td>
<td>Calculus for Social and Life Sciences</td>
<td>4</td>
</tr>
<tr>
<td>MATH 16B</td>
<td>Calculus for Social and Life Sciences</td>
<td>4</td>
</tr>
<tr>
<td>MATH 29</td>
<td>Pre-Calculus Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 30</td>
<td>Analytical Geometry and Calculus I</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 31</td>
<td>Analytical Geometry and Calculus II</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 32</td>
<td>Analytical Geometry and Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 33</td>
<td>Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
<tr>
<td>MATH 42</td>
<td>Business Calculus</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 10</td>
<td>Basic Concepts in Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 11</td>
<td>Physical Science Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 105</td>
<td>General Physics I AND</td>
<td></td>
</tr>
<tr>
<td>PHYS 105L</td>
<td>General Physics I Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 110</td>
<td>General Physics II AND</td>
<td></td>
</tr>
<tr>
<td>PHYS 110L</td>
<td>General Physics II Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 205</td>
<td>Principles of Physics: Mechanics AND</td>
<td></td>
</tr>
<tr>
<td>PHYS 205L</td>
<td>Principles of Physics Laboratory: Mechanics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 210</td>
<td>Principles of Physics: Electricity and Magnetism AND</td>
<td></td>
</tr>
<tr>
<td>PHYS 210L</td>
<td>Principles of Physics Laboratory: Electricity and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 215</td>
<td>Principles of Physics: Heat, Waves and Modern Physics AND</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Principles of Physics Laboratory: Heat, Waves and</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Modern Physics</td>
<td></td>
</tr>
<tr>
<td>PSYC 140</td>
<td>Introduction to Biopsychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 140L</td>
<td>Biopsychology Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 18**

---

**NURSING**

**SCIENCES AND MATHEMATICS**

DEAN: Heather Roberts

DIVISION OFFICE: V 211

ASSOCIATE DEAN: Nancy Schwab

AREA OFFICE: Room 101, Roseville Gateway Center, Phone (916) 781-6220

FACULTY: S. Bateson, D. Clifton, M. Feldscher, L. Lind, S. Privett-Pokorney

LIAISON COUNSELOR: T. Maddux

Students completing the Registered Nursing Program earn an A.S. or A.A. degree in Registered Nursing. In order to receive complete and accurate information concerning the nursing programs, students are urged to first read the information on the Sierra College website carefully and then seek further information or clarification from the nursing department or counseling staff as necessary.

Baccalaureate and graduate nursing programs in four-year colleges and universities differ widely in transfer and credit-granting policies, requirements and course offerings. Students planning on transferring to obtain a baccalaureate degree in nursing should obtain appropriate college catalogs.
NURSING ASSISTANT

The Nursing Assistant courses are designed to prepare students for employment and direct patient care in long term care facilities. There are no degree patterns or transfer majors in this area. Students desiring eligibility for certification must maintain grades of “C” or better in Nursing Assistant courses.

A physical exam and proof of freedom from common communicable diseases by immunization and/or serological testing is required (at the student’s expense) prior to the patient care experience as mandated by the state.

Drug testing and background screening are required. Testing and background screening may be required. Students must be fingerprinted and submit a Declaration of Conviction/No Conviction form for the Department of Health Services prior to entrance to clinical facility.

Students must obtain an approved uniform and required patient care equipment, obtain Basic Life Support certificate from the American Heart Association designated for Healthcare Providers and be responsible for transportation to and from clinical facilities.

NURSING ASSISTANT COURSES »

NRSA 3 PRECERTIFICATION NURSING ASSISTANT TRAINING
Units: 5.5
Prerequisite: Completion of ENGL 50 and ENGL A, or ENGL N, with grades of “C” or better or placement by matriculation assessment process; or completion of ESL 540W, 540R, 25G and 25L with grades of “C” or better, or placement by ESL matriculation assessment process
Hours: 189 (54 lecture, 135 laboratory)
Introduction to nursing practice based on the humanistic philosophy of Abraham Maslow. Includes basic skills necessary to assist in satisfying the patient’s physical, psychological, social and cultural needs. Students must be fingerprinted and submit documentation related to received conviction; certification may be denied. Students must meet regulatory requirements for class attendance, health clearance, background check clearance and valid social security number to participate in the course. Upon successful completion, students are eligible to take the State of California Certification Examination to become a Nursing Assistant qualified for employment in an acute or long-term health care facility. Testing and certification fees are required. (letter grade only) (not transferable)

NURSING, REGISTERED

Completion of the Associate Degree Nursing Program qualifies the student to take the National Council of State Boards of Nursing Licensure Examination (NCLEX-RN). Upon passing the Exam, registered nurses are eligible to work in a variety of settings within the health care system as entry level staff nurses. The curriculum, approved by the California State Board of Registered Nursing, consists of both nursing and related general education courses, plus additional general education degree requirements. The nursing courses include theory classes and supervised concurrent clinical practice in local health care agencies. Clinical practice may occur days, evenings, nights and weekends and is assigned by nursing faculty.

At the expense of the student, a physical exam and proof of freedom of communicable disease and/or immunizations for the protection of the student and patients are required upon admission and prior to the first day of class. Students must also purchase an approved uniform and instructional materials required to achieve program objectives, maintain Basic Life Support training certification from the American Heart Association designated for Healthcare Providers and be responsible for transportation to and from clinical facilities. Drug testing and background screening are required. Readiness/assessment testing may be required. Completion of the Test of Essential Academic Skills with a cumulative score of 67% or higher is required.

In order to receive complete and accurate information concerning the nursing programs, students are urged to first read the information on the Sierra College website carefully and then seek further information or clarification from the nursing department or counseling staff as necessary.

REGISTERED NURSING ADMISSION REQUIREMENTS:

All application packets are evaluated for completeness and applicant admission eligibility. Application packets that are incomplete are not considered for admission. A complete application packet consists of the following:
• completed application signed by the applicant;
• official transcripts for all colleges (including Sierra College) referenced in the application, including those documenting fulfillment of prerequisite courses;
• official high school transcripts if using high school mathematics courses to meet the mathematics prerequisite;
• official course descriptions for all prerequisite courses taken outside of Sierra College. Official course descriptions must match the year and semester the course was completed as documented on the transcript;
• for veterans, a copy of DD Form 214 Certificate of Release or Discharge from Active Duty;
• current and active e-mail address.

The qualifying score using the Chancellor’s Predictor of Success formula is 84% or higher. The nursing department complies with all academic regulations and requirements.
PROGRAM PREREQUISITES:
Completion of the following courses with grades of “C” or better:
* BIOL 4 or 8A/8B Microbiology **
* BIOL 5 or 7A/7B Human Anatomy **
* BIOL 6 Human Physiology **
* ENGL 1A Introduction to Composition
* HDEV 1 Human Development
* NUTF 10 Nutrition **
* PSYC 100 General Principles of Psychology
* Demonstrated reading proficiency by one of the following:
  ENGL 1B, 1C, 11, 50, N; ESL 30R; HIST 35; or PHIL 4 with grade of “C” OR better; or eligibility for ENGL 11 based on Course Placement and Eligibility results; or bachelor’s degree or higher from a regionally accredited institution
* One of the following mathematics courses with grade of “C” or better: MATH A, D, 12, 16A, 16B, 24, 29, 30, 31, 42, OR two semesters of high school algebra or higher
* Prerequisites required before entry into the Registered Nursing Program.
** Courses in nutrition, microbiology, anatomy and physiology must be completed within seven years of entrance into the Registered Nursing Program.

PROGRAM COREQUISITES:
These courses must be completed before the student enters the last semester of the nursing program, with grades of “C” or better:
COMM 1 Fundamentals of Public Speaking
SOC 1 Introduction to Sociology OR
ANTH 2 Cultural Anthropology
All selected applicants are given provisional acceptance pending successful completion of the Test of Essential Academic Skills (TEAS) with a cumulative score of 67% or higher, clear background check and drug screen, completion of health assessment by physician or nurse practitioner stating the applicant is clear to perform the requisite duties without restriction.

ADVANCED PLACEMENT POLICY FOR ASSOCIATE DEGREE NURSING PROGRAM:
Licensed vocational nurses and others with previous nursing education and/or experience may receive credit and/or seek advanced placement in the program (see below). In order to be a graduate of the program and receive an associate degree in Registered Nursing, all program and associate degree requirements must be met. Admission of any student eligible for advanced placement in the program following an academic evaluation is on a space available basis. Students re-entering the program receive priority. Students may obtain further information regarding program placement policies form the Sierra College website.

30-UNIT LVN OPTION
The 30-unit LVN option plan is offered on a space available basis for LVNs currently licensed in California. Requirements include completion (or challenge) of acceptable college level courses in physiology and microbiology with grades of “C” or better prior to enrollment in the program and completion (or challenge) of NRSR 23 and 24 in sequence. Those who complete this option do not graduate or receive a degree.

UPWARD MOBILITY LVN TO RN OPTION:
LVNs wishing to obtain licensure as a Registered Nurse through the upward mobility option must meet the following criteria to be considered for admission:
• minimum of 6 months full-time experience providing direct patient care in the acute care or skilled nursing care settings within 2 years prior to application submission;
• active, unrestricted California LVN license;
• meet the program prerequisite and admission requirements as well as the above mentioned clinical experience;
• upon admission, the student must complete the NRSR 23 and 24 sequence and the remaining required program and general education courses. LVNs interested in pursuing an Associate Degree Nursing and taking National Council Licensure Examination (NCLEX) to be a Registered Nurse may be admitted to the Upward Mobility program on a space available basis. Readiness/Assessment testing is required.

UPWARD MOBILITY ADMISSION REQUIREMENTS:
Please see the Registered Nursing Admission Requirements.

REGISTERED NURSING A.A. OR A.S. DEGREE
Students must fulfill the nursing program requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).
Students already holding an associate degree in another major do not need to complete the general education requirements listed.
immediately above, unless they wish to obtain an A.A. or A.S. degree in Registered Nursing.

Students who have baccalaureate or higher degrees are only required to fulfill the nursing program requirements and registered nursing courses, to be awarded an associate degree.

**NURSING PROGRAM REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 4</td>
<td>Microbiology OR</td>
<td></td>
</tr>
<tr>
<td>BIOL 8A AND 8B</td>
<td>Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 5</td>
<td>Human Anatomy OR</td>
<td></td>
</tr>
<tr>
<td>BIOL 7A</td>
<td>Human Anatomy I AND</td>
<td>4-5</td>
</tr>
<tr>
<td>BIOL 7B</td>
<td>Human Anatomy II</td>
<td></td>
</tr>
<tr>
<td>BIOL 6</td>
<td>Human Physiology</td>
<td>5</td>
</tr>
<tr>
<td>COMM 1</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1A</td>
<td>Introduction to Composition</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 1</td>
<td>Human Development</td>
<td></td>
</tr>
<tr>
<td>MATH A</td>
<td>Elementary Algebra OR</td>
<td></td>
</tr>
<tr>
<td>MATH D</td>
<td>Intermediate Algebra OR</td>
<td></td>
</tr>
<tr>
<td>MATH 12</td>
<td>College Algebra OR</td>
<td></td>
</tr>
<tr>
<td>MATH 16A</td>
<td>Calculus for Social and Life Sciences OR</td>
<td></td>
</tr>
<tr>
<td>MATH 16B</td>
<td>Calculus for Social and Life Sciences OR</td>
<td></td>
</tr>
<tr>
<td>MATH 24</td>
<td>Modern Business Mathematics OR</td>
<td></td>
</tr>
<tr>
<td>MATH 29</td>
<td>Pre-Calculus Mathematics OR</td>
<td></td>
</tr>
<tr>
<td>MATH 30</td>
<td>Analytical Geometry and Calculus I OR</td>
<td></td>
</tr>
<tr>
<td>MATH 31</td>
<td>Analytical Geometry and Calculus II OR</td>
<td></td>
</tr>
<tr>
<td>MATH 42</td>
<td>Business Calculus OR</td>
<td></td>
</tr>
<tr>
<td>Two semesters of high school algebra or higher</td>
<td>0-5</td>
<td></td>
</tr>
<tr>
<td>NUTF 10</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>General Principles of Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 1</td>
<td>Introduction to Sociology OR</td>
<td></td>
</tr>
<tr>
<td>ANTH 2</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
</tbody>
</table>

**REGISTERED NURSING COURSES:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRSR 21</td>
<td>Nursing Fundamentals and Geriatric Nursing</td>
<td>11</td>
</tr>
<tr>
<td>NRSR 22</td>
<td>Medical Surgical I and Pediatric Nursing</td>
<td>11</td>
</tr>
<tr>
<td>NRSR 23</td>
<td>Medical Surgical II and Mental Health Nursing</td>
<td>11</td>
</tr>
<tr>
<td>NRSR 24</td>
<td>Advanced Medical Surgical and Maternal-Newborn Nursing</td>
<td>11</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 76-82**

Students who complete the nursing program requirements and registered nursing courses without completing all of the associate degree requirements may take the Licensure Examination as NON-GRADUATES, but these students are not graduates of the program and do not receive degrees.

**BOARD OF REGISTERED NURSING LICENSURE REQUIREMENTS**

Upon applying to the California Board of Registered Nursing for examination and licensure, students must be fingerprinted and submit documentation related to any received conviction; licensure may be denied.

In accordance with Regulation 480 of the State Board of Registered Nursing, a person convicted of any offense, other than a minor traffic violation, may not qualify to be licensed as a registered nurse. Questions regarding this regulation may be addressed to the California State Board of Registered Nursing.

**NURSING, REGISTERED COURSES »**

**NRSR 13 TRANSITION FROM LVN TO RN**

Units: 2
Prerequisite: Admission to ADN program with advanced standing
Hours: 72 (18 lecture, 54 laboratory)
Designed for vocational nurses who are admitted to the registered nursing program at Sierra College. Provides strategies to integrate the student into the RN program and its philosophy and curricular framework. (pass/no pass grading) (not transferable)

**NRSR 17 HIGH-RISK PEDIATRIC NURSING**

Units: 0.5
Prerequisite: Enrolled as LVN to RN Upward Mobility student
Hours: 9 lecture
Provides the LVN Upward Mobility student with the content/concepts for the management of nursing care for the child with complex nursing needs, such as a high-risk medical condition and chronic or end-of-life care. The content rounds out the basic pediatric nursing content the student received in the vocational nursing program and meets BRN curriculum requirements. (CSU)

**NRSR 21 NURSING FUNDAMENTALS AND GERIATRIC NURSING**

Units: 11
Prerequisite: Completion of BIOL 4 or 8A/8B, 5 or 7A/7B, 6, NUTF 10, HDEV 1, PSYC 100, MATH A and ENGL 1A with grades of “C” or better; 12.5 grade reading level; overall GPA of 2.0 in prerequisites
Advisory: Individual passing score of 75% or greater in each area of the Test of Essential Academic Skills (TEAS) supports successful matriculation through the ADN program
Hours: 398 (98 lecture, 300 laboratory)
Introduction to nursing with overview of its evolution, present trends and issues, legal and ethical aspects and the major concepts underlying today’s practice. Theory and correlated clinical practice related to utilizing the nursing process based on Roy’s Adaptation Model to provide direct care to stable adult and elderly patients. Emphasis on basic human needs and promoting adaptive mechanisms for attaining and maintaining wellness. Students gain the knowledge and skills necessary to perform all basic nursing procedures. (letter grade only) (CSU)

**NRSR 22 MEDICAL SURGICAL I AND PEDIATRIC NURSING**

Units: 11
Prerequisite: Completion of NRSR 21 with grade of “C” or better
Hours: 390 (106 lecture, 284 laboratory)
Theory and correlated clinical practice related to utilizing the nursing process based on Roy’s Adaptation Model to promote adaptation by adult and pediatric clients and their families experiencing common and/or remedial illnesses/stressors. Students further develop skills and apply theory introduced in NRSR 21 in varied and more complex settings and gain additional theory and skills related to new clinical areas and levels of responsibility. (letter grade only) (CSU)
NURSING

**NURSING (CSU–with unit limitation)**

Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94).

Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (letter grade only) (CSU)

**NURSING**

**NRSR 23 MEDICAL SURGICAL II AND MENTAL HEALTH NURSING**

Units: 11
Prerequisite: Completion of NRSR 22 with grade of "C" or better or current LVN licensure and BIOL 4 or 8A/8B, 5 or 7A/7B, 6, NUTF 10, HDEV 1, PSYC 100, MATH A and ENGL 1A with grades of "C" or better; Completion of or concurrent enrollment in COMM 1 and SOC 1 or ANTH 2 with grades of "C" or better; 12.5 grade reading level

Hours: 386 (104 lecture, 282 laboratory)
Theory and clinical practice related to application of the nursing process based on Roy’s Adaptation Model. Students provide care for the adult client having a variety of complex medical-surgical health problems and learn to apply the nursing process for clients experiencing common mental health issues. Focus is on the role of the registered nurse in therapeutic communication, health teaching, leadership, management and team work. Students further develop skills and apply theory introduced in NRSR 22 in varied and more complex settings and gain additional theory and skills related to new clinical areas and levels of responsibility. (letter grade only) (CSU)

**NRSR 24 ADVANCED MEDICAL SURGICAL AND MATERNAL-NEWBORN NURSING**

Units: 11
Prerequisite: Completion of NRSR 23 with grade of "C" or better

Hours: 396 (100 lecture, 296 laboratory)
Theory and correlated clinical practice related to the application of the nursing process based on Roy’s Adaptation Model for multiple adult and geriatric clients with complex health problems experiencing acute illness. Students learn to promote adaptation for the maternal-newborn clients experiencing illness/stressors. Students further develop skills and apply theory introduced in NRSR 22 in varied and more complex settings and gain additional theory and skills related to new clinical areas and levels of responsibility. During the first ten weeks, clinical experience takes place in the medical-surgical and maternal newborn settings under the direct supervision of the faculty. The final six weeks encompass the completion of a pre-licensure preceptorship with a registered nurse in the medical-surgical clinical setting. (letter grade only) (CSU)

**NURSING**

**NRSR 95 INTERNSHIP IN REGISTERED NURSING**

Units: 0.5-4

Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

**NUTRITION AND FOOD SCIENCE**

**SCIENCE AND MATHEMATICS**

DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211
FACULTY: S. Klenner, M. Mukutmoni
LIAISON COUNSELORS: T. Maddux, N. Martinis

The Nutrition and Food Science curriculum is designed to provide students with knowledge of nutrition principles and skills in food preparation techniques. The curriculum provides education for transfer to upper division institutions for careers in foods, food preparation or food service, dietetics and dietary health care and promotes optimum health to maximize one’s physical, social and economic potential.

**NUTRITION AND FITNESS TRAINER CERTIFICATE OF ACHIEVEMENT**

This certificate program provides a comprehensive understanding of the relationships between food, physical fitness and health. Students will gain the necessary skills and knowledge for entry-level employment in health clubs and recreation centers. The certificate curriculum prepares students for the American Council on Exercise Personal Trainer Certification Exam, allowing students greater employment opportunities as personal trainers, group fitness instructors and advanced fitness specialists. A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**REQUIRED COURSES**

**UNITs**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTF 5 Food Preparation for Nutrition and Life Fitness OR</td>
<td>3</td>
</tr>
<tr>
<td>BUS 120 Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>NUTF 10 Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>NUTF 14 Nutrition for Physical Performance</td>
<td>3</td>
</tr>
<tr>
<td>PHED 3A Basic Aerobic Training with Fitness Equipment</td>
<td>1.5</td>
</tr>
<tr>
<td>PHED 5A Weight Training</td>
<td>1.5</td>
</tr>
<tr>
<td>PHED 32 ACE Personal Trainer Preparation</td>
<td>3</td>
</tr>
<tr>
<td>PHED 83 Physiology of Fitness</td>
<td>3</td>
</tr>
<tr>
<td>PHED 85 Techniques of Fitness Instruction</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 21**

**NUTRITION AND FOOD SCIENCE COURSES**

**NUTF 5 FOOD PREPARATION FOR NUTRITION AND LIFE FITNESS**

Units: 3
Hours: 90 (36 lecture, 54 laboratory)

Scientific principles and methods of healthy selection of foods based on current research and USDA dietary guidelines. Recipe selection, menu planning, food preparation, analysis and evaluation of healthy choices. Caloric and nutrient value of selected recipes based on health and fitness of individuals. (CSU)
PERCEPTUAL TRAINING

STUDENT SERVICES
DEAN: Sharon Adams
DIVISION OFFICE: Winstead Center L-102
FACULTY: G. Joy
AREA OFFICE: MT-8
LIAISON COUNSELORS: S. Bramlett, M. Kwoka

Courses offered in this department are designed primarily for Learning Disabled students. The emphasis is placed on perceptual development through an individualized program. These courses may include vision training, auditory processing/discrimination and learning strategies.

PERCEPTUAL TRAINING COURSES »

PRCP 601 VISUAL PERCEPTUAL SKILLS
Units: 0.5-1
Hours: 27 laboratory per .5 unit
Develops visual perceptual skills using multi-sensory approaches to learning. Promotes ability to process visual information by improving tracking, fusion, peripheral vision, perceptual speed and visual memory. Designed for students with learning disabilities. Students must complete a Vision Screening administered by a Learning Disabilities Specialist and be approved for enrollment by the instructor. (pass/no pass grading) (not degree applicable)

PRCP 602A INTRODUCTORY PHONETIC CONCEPTS
Units: 3
Prerequisite: Completion of PRCP 601 with grade of “C” or better
Hours: 63 (45 lecture, 18 activity)
Develops skills for phonetic letter-sound association and sequence in words. Promotes the ability to use single-syllable word attack and spelling generalizations for improved reading and spelling. Increases understanding of learning disabilities and features multi-sensory discovery learning. Designed for students with learning disabilities. (not degree applicable)

NUTF 10 NUTRITION
Units: 3
Prerequisite: Eligibility for ENGL 50 or ENGL N
Hours: 54 lecture
Fundamentals of human nutrition, with emphasis on the body’s use of food nutrients. Recommended for students interested in the scientific approach to the study of nutrition. (CSU, UC)

NUTF 13 NUTRITION THROUGHOUT THE LIFE CYCLE
Also known as HDEV 61
Units: 3
Advisory: Completion of NUTF 10 with grade of “C” or better
Hours: 54 lecture
Examination of nutritional concerns, requirements and metabolism during several stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence and the elderly years. Analysis of cultural, environmental, physical and economic factors affecting nutritional status. Study methods of assuring adequate nutrition through dietary selection and promotion of maternal, infant, geriatric health. (CSU)

NUTF 14 NUTRITION FOR PHYSICAL PERFORMANCE
Units: 3
Prerequisite: Completion of NUTF 10 with grade of “C” or better
Hours: 54 lecture
A comprehensive study of essential nutrients in food and supplements, their function and utilization during activities involving muscle strength, muscle endurance, cardiopulmonary fitness and flexibility. (CSU)

NUTF 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

NUTF 95 INTERNSHIP IN NUTRITION AND FOOD SCIENCE
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

PRCP 602B ADVANCED PHONETIC CONCEPTS
Units: 3
Prerequisite: Completion of PRCP 602A, or equivalent course, or recommendation of Learning Disabilities Specialist
Hours: 63 (45 lecture, 18 activity)
Continues to develop skills for phonetic letter sound association and sequence in words. Promotes the ability to use multi-syllable word attack and spelling generalizations for improved reading, spelling and writing fluency. Further understanding of learning disabilities and features multi-sensory discovery learning. Designed for students with learning disabilities. (not degree applicable)
PERSONAL DEVELOPMENT COURSES »

PDEV 1 COLLEGE SUCCESS
Units: 3
Hours: 54 lecture
Strategies for creating success in college, life and career. Academic methods for test-taking, memory improvement, note-taking, critical thinking and research skills. Techniques for effective time management, goal setting, increased self-awareness, motivation, communication and stress reduction. (CSU, UC)

PDEV 6 CAREER PLANNING
Units: 3
Hours: 54 lecture
Individual assessments of personality, interests, values and skills to help identify appropriate careers and college majors. Occupational research, research on educational requirements, goal setting, decision-making and job search strategies; including resume writing and interviewing. (CSU)

PDEV 8 INTRODUCTION TO COLLEGE
Units: 0.5-2
Hours: 12 lecture per .5 unit
Introduction to higher education, the college catalog, college terms, degree/certificate requirements, student resources, student success practices, steps to choosing a major and overview of the transfer process to four year colleges/universities. Students will formulate an educational plan to increase success in reaching educational goals. (CSU)

PDEV 9 ASSERTIVENESS TRAINING
Units: 1
Hours: 18 lecture
Step by step strategies for becoming more assertive, rather than passive or aggressive. Learn verbal and nonverbal skills for communicating with people more authentically, effectively and fairly. Examines cultural and social differences in assertive communication. (CSU)

PDEV 21 SELF ASSESSMENT AND CAREER EXPLORATION THROUGH TECHNOLOGY
Units: 0.5-1
Hours: 15 (3 lecture, 12 activity) per .5 unit
Assists students in self assessment, decision making and career exploration through the use of technology and career assessment tools. (CSU)

PDEV 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

PDEV 52 STUDENT LEADERSHIP DEVELOPMENT
Units: 2
Hours: 54 (18 lecture, 36 activity)
Leadership in student government, campus clubs and non-academic contexts. Application of practical leadership skills on out-of-class projects; includes planning and running effective meetings, parliamentary procedure, group leadership and motivation techniques. (CSU)

PDEV 70 STRESS AND WELL BEING
Units: 3
Hours: 54 lecture
A review of the causes, effects and solutions for stress. Explores the relationship between the psychological and socio-cultural factors. Coping techniques include meditation, cognitive strategies and the practice of wellness. (CSU)

PDEV 94 CAREER EXPLORATION INTERNSHIP
Units: 0.5-4
Exposure to business/industry under the direction of a worksite supervisor, related to student’s educational or occupational goals. Develops career awareness, experience and knowledge with a focus on job skills that would enhance academic learning. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)
PHILOSOPHY

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: J. Haproff, V. Martin, J. Terry
LIAISON COUNSELORS: E. Farrelly, D. Quadros

Philosophy concerns the study of fundamental questions that arise in different areas of human experience, thought, or practice. Philosophy is the basis of a sound humanistic or liberal arts education. The Philosophy program aims to make this natural activity of thought both richer and more systematic. Courses are offered which provide opportunities for self-development and the building of a coherent outlook and critical reason. In addition, the lower division prerequisites for a four-year philosophy major are offered.

TRANSFER MAJOR REQUIREMENTS in Philosophy are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements.

PHILOSOPHY FOR TRANSFER
AA-T DEGREE

Philosophy is a broadly based discipline that examines the fundamental questions that arise in disparate areas of human experience. Courses are both historically and topically organized and emphasize the analysis of primary sources, the importance of critical thinking, the relationship between conclusions, justifications and logic. By developing reasoning skills, students will strengthen clarity of language usage, fortify argumentation skills and master the language and topics of the discipline of philosophy.

The Associate in Arts in Philosophy for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Philosophy. Students completing the Associate in Arts in Philosophy for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in Philosophy for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:
• completion of the major requirements with grades of C or better; and
• certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES:

PHIL Courses

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 2 Introduction to Philosophy: Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 6 Introduction to Philosophy: Knowledge and Reality</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 12 Introduction to Symbolic Logic</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 9 UNITS FROM THE FOLLOWING OR UNUSED COURSE FROM THE PRECEDING AREA:

PHIL Courses

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 4 Introduction to Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 10 Philosophy of Religion</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 13 Introduction to Asian Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 20 Introduction to Ancient Greek Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 21 History of Modern Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 65 Introduction to the Philosophy of Science</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 3 UNITS FROM THE FOLLOWING OR UNUSED COURSE FROM THE PRECEDING AREAS:

PHIL Courses

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 15 Introduction to Philosophies of Self and Personhood</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 27 Introduction to Philosophy of Women in Western Cultures</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 30 Introduction to Social and Political Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 50 Introduction to Philosophy through Literature and Film</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 60 Introduction to Environmental Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 18

PHILOSOPHY
A.A. DEGREE

The Philosophy Department serves a diverse student population in preparation for upper division coursework in Philosophy at a four-year university as well as through offering general education courses for non-philosophy majors. The A.A. degree in Philosophy will prepare students for upper-division work in Philosophy by acquainting them with the relevant terminology and conceptual positions with regards to the major subdivisions of the discipline: Metaphysics, Epistemology, Axiology and Logic. Courses are offered which provide opportunities for self-development and the building of a coherent outlook and critical reason. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General
PHILOSOPHY COURSES

PHIL 2 INTRODUCTION TO PHILOSOPHY: ETHICS
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
The concept of morality and values, Western systems of ethics including Virtue Ethics, Utilitarianism, Kantian ethics, Feminist Moral Theory and their application to contemporary moral dilemmas. (C-ID PHIL 120) (CSU, UC)

PHIL 4 INTRODUCTION TO CRITICAL THINKING
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
A study of the relationship between logic and language. Emphasis on informal fallacies, deductive and inductive logic. Emphasizes the elements of the argumentative essay. (CSU, UC)

PHIL 5 PHILOSOPHICAL WRITING
Units: 1
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 18 lecture
Introduction to the mechanics of writing philosophy papers and the integration of deductive and inductive logic into formal essay format. Includes thesis development, research and organization of an essay, evaluation of online sources, creation and testing of logical structure, integration of logic into a formal philosophical essay as well as formatting standard types of philosophical papers including compare and contrast, argumentative, analytic and explanatory. Recommended for Philosophy majors. (CSU)

PHIL 6 INTRODUCTION TO PHILOSOPHY: KNOWLEDGE AND REALITY
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
Introduction to the method and primary problems of philosophy including argumentation, conceptual analysis, analysis and evaluation of fundamental assumptions and principles of various philosophical systems and philosophical interpretation of primary texts on topics from epistemology and metaphysics. (C-ID PHIL 100) (CSU, UC)

PHIL 10 PHILOSOPHY OF RELIGION
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
Analysis of the major philosophical issues raised by, but not limited to traditional Western religion. Includes an examination of the arguments for God’s existence, immortality, the problem of evil, miracles, the rationality of religious belief, theories about the nature and function of the language of religion and religious pluralism. (CSU, UC)

PHIL 12 INTRODUCTION TO SYMBOLIC LOGIC
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
Introduction to the principles of deductive reasoning including formal techniques of sentential and predicate logic. (C-ID PHIL 210) (CSU, UC)

PHIL 13 INTRODUCTION TO ASIAN PHILOSOPHY
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
Major philosophies of Asia including Hinduism, Buddhism, Taoism, Confucianism and Shinto. Focuses on issues such as immortality, the nature of reality, god, the self, society, transcendence and morality. Also looks at the influences of Eastern Philosophy on Western Culture. (CSU, UC)

PHIL 15 INTRODUCTION TO PHILOSOPHIES OF SELF AND PERSONHOOD
Units: 3
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
An examination of rival theories of personhood from various philosophical, religious and scientific perspectives. Includes Confucian, Hindu, Buddhist and Judeo-Christian conceptions of personhood, the philosophical views represented by Plato, Kant, Marx and Sartre, as well as the psychological views represented by Freud, Skinner and Lorentz. (CSU, UC)
PHIL 20 INTRODUCTION TO ANCIENT GREEK PHILOSOPHY  
Units: 3  
Advisory: Eligibility for ENGL 1A  
Hours: 54 lecture  
A study of the rise of philosophy in ancient Greece: Milesian philosopher-scientists, Socrates, Plato, Aristotle, Stoics, Skeptics and Epicureans. (C-ID PHIL 130) (CSU, UC)

PHIL 21 HISTORY OF MODERN PHILOSOPHY  
Units: 3  
Advisory: Eligibility for ENGL 1A  
Hours: 54 lecture  
Sixteenth through Eighteenth century philosophy with emphasis on broad epistemological or metaphysical theories, developments of empiricism and rationalism from Descartes to Kant. (C-ID PHIL 140) (CSU, UC)

PHIL 27 INTRODUCTION TO PHILOSOPHY OF WOMEN IN WESTERN CULTURES  
Units: 3  
Advisory: Eligibility for ENGL 1A  
Hours: 54 lecture  
Introduction to the concepts of womanhood and feminism in mythic, classic, medieval and major philosophical traditions. Emphasis on the images, roles and beliefs about women found in the humanities and philosophy with respect to their impact and contemporary relevance. (CSU, UC)

PHIL 28 INDEPENDENT STUDY  
Units: 1-3  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

PHIL 30 INTRODUCTION TO SOCIAL AND POLITICAL PHILOSOPHY  
Units: 3  
Hours: 54 lecture  
Major philosophical issues surrounding the nature of society and justifications for the authority of the state. Focuses on how the concepts of the common good, individual rights, liberty, equality and democracy relate to notions of justice, private property and the legitimate use of state power. (CSU, UC)

PHIL 50 INTRODUCTION TO PHILOSOPHY THROUGH LITERATURE AND FILM  
Units: 3  
Advisory: Eligibility for ENGL 1A  
Hours: 54 lecture  
Introductory exploration of philosophical themes through various genres of literature and film. Topics include: knowledge, truth, personal identity, ethics, justice, religious belief and free will. (CSU, UC)

PHIL 60 INTRODUCTION TO ENVIRONMENTAL ETHICS  
Units: 3  
Hours: 54 lecture  
Philosophical survey of the ethical questions and issues raised when considering the relationship between human beings and the environment. Topics include the moral standing of animals, land use and preservation policy, growth and sustainability and environmental justice. Theoretical approaches include deep ecology, social ecology, ecofeminism, multicultural perspectives and environmental pragmatism. (CSU, UC)

PHIL 65 INTRODUCTION TO THE PHILOSOPHY OF SCIENCE  
Units: 3  
Advisory: Eligibility for ENGL 1A  
Hours: 54 lecture  
The philosophical foundations of science such as criteria for distinguishing between science and pseudo-science, questions concerning scientific progress, justification of scientific hypotheses, the theory-dependence of observation, the nature of scientific revolutions, the possibility of objectivity and the challenges of relativism, feminism and marginalization. (CSU, UC)

PHOTOGRAPHY  
LIBERAL ARTS  
INTERIM DEAN: Rebecca Bocchicchio  
ASSOCIATE DEAN: Anne Fleischmann  
DIVISION OFFICE: W 107  
FACULTY: R. Gregg, R. Snook  
LIAISON COUNSELORS: B. Gosney, N. Martinis  
Photography is offered as a creative means of visual expression with artistic and commercial application. Opportunities for experimental and applied aspects are provided from the beginning through advanced levels. A serious effort is made to structure offerings so that students can attain individual goals in the field of Photography. Photographic skills complement other diverse fields such as science, environmental studies, law enforcement, teaching, anthropology, art and real estate. This complementary aspect is also stressed in the program.

TRANSFER MAJOR REQUIREMENTS in Photography are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements.
PHOTOGRAPHY
A.A. OR A.S. DEGREE

Positions for which students of photography are qualified are professional photographer, commercial photographer, advertising and photographic journalism. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOT 10 History and Aesthetics of Photography (also ART 11)</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 60A Elementary Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 60B Intermediate Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 65 Documentary Photography OR PHOT 85 Photojournalism</td>
<td>2</td>
</tr>
<tr>
<td>PHOT 70A Advanced Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 75 Introduction to Digital Imaging (also AAD 75)</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 7 UNITS SELECTED FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 20 Portfolio Development and Presentation</td>
<td>3</td>
</tr>
<tr>
<td>ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 28 Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>PHOT 30 Photographing Works of Art (also AAD 30)</td>
<td>.5</td>
</tr>
<tr>
<td>PHOT 61 Photography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHOT 65 Documentary Photography</td>
<td>2</td>
</tr>
<tr>
<td>PHOT 70B Advanced Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 76 Advanced Projects in Digital Imaging (also AAD 76)</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 78 Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 80 Color Photography</td>
<td>2</td>
</tr>
<tr>
<td>PHOT 85 Photojournalism</td>
<td>2</td>
</tr>
<tr>
<td>PHOT 88 Business Practices for Photographers</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 90A-T Photography Field Workshop</td>
<td>.5-2</td>
</tr>
<tr>
<td>PHOT 91B Alternative Processes Workshop: Handcoloring</td>
<td>.5</td>
</tr>
<tr>
<td>PHOT 91C Alternative Processes Workshop: Cyanotype</td>
<td>.5</td>
</tr>
<tr>
<td>PHOT 92 Alternative Processes</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 24

PHOTOGRAPHY
CERTIFICATE OF ACHIEVEMENT

A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOT 10 History and Aesthetics of Photography (also ART 11)</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 60A Elementary Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 60B Intermediate Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 65 Documentary Photography OR PHOT 85 Photojournalism</td>
<td>2</td>
</tr>
<tr>
<td>PHOT 70A Advanced Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 75 Introduction to Digital Imaging (also AAD 75)</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 88 Business Practices for Photographers</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 9 UNITS SELECTED FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD 20 Portfolio Development and Presentation</td>
<td>3</td>
</tr>
<tr>
<td>ART 4A Drawing</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 28 Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>PHOT 30 Photographing Works of Art (also AAD 30)</td>
<td>.5</td>
</tr>
<tr>
<td>PHOT 61 Photography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHOT 65 Documentary Photography</td>
<td>2</td>
</tr>
<tr>
<td>PHOT 70B Advanced Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 76 Advanced Projects in Digital Imaging (also AAD 76)</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 78 Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 80 Color Photography</td>
<td>2</td>
</tr>
<tr>
<td>PHOT 85 Photojournalism</td>
<td>2</td>
</tr>
<tr>
<td>PHOT 90A-T Photography Field Workshop</td>
<td>.5-2</td>
</tr>
<tr>
<td>PHOT 91B Alternative Processes Workshop: Handcoloring</td>
<td>.5</td>
</tr>
<tr>
<td>PHOT 91C Alternative Processes Workshop: Cyanotype</td>
<td>.5</td>
</tr>
<tr>
<td>PHOT 93 Alternative Processes</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 95 Internship in Photography</td>
<td>.5-2</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 29

ALTERNATIVE PROCESSES IN PHOTOGRAPHY
SKILLS CERTIFICATE

For those students who want to broaden their expressive abilities beyond the traditional photographic image. Helps prepare students for creative image making for the advertising and portrait photography markets. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>CORE COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOT 92 Alternative Processes</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 4 UNITS SELECTED FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOT 28 Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>PHOT 60B Intermediate Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 61 Photography Laboratory Experience</td>
<td>1</td>
</tr>
<tr>
<td>PHOT 90G Pinhole Photography Workshop</td>
<td>.5-1</td>
</tr>
<tr>
<td>PHOT 91B Alternative Processes Workshop: Handcoloring</td>
<td>.5</td>
</tr>
<tr>
<td>PHOT 91C Alternative Processes Workshop: Cyanotype</td>
<td>.5</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 7
COLOR PHOTOGRAPHY
SKILLS CERTIFICATE
Assists in preparing students to create visually stimulating images utilizing the power of color. Focuses on the aesthetic use of color, as well as technical mastery of color balancing, accuracy and manipulation. These skills are necessary for both laboratory technicians and photographers. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
8 UNITS SELECTED FROM THE FOLLOWING:
PHOT 30 Photographing Works of Art (also AAD 30) ............. .5
PHOT 75 Introduction to Digital Imaging (also AAD 75) ............. 3
PHOT 78 Digital Photography ........................................ 3
PHOT 80 Color Photography ......................................... 2
PHOT 90B Field Workshop: Cityscape .............................. 2
PHOT 90I Night Photography Field Workshop ...................... .5
PHOT 90L Field Workshop: Landscape ............................. .5
PHOT 90T Travel Photography Field Workshop .................... .5
TOTAL UNITS REQUIRED: 8

DIGITAL IMAGING
SKILLS CERTIFICATE
Designed for students interested in becoming proficient with photographic image capture, preparation and manipulation on the computer. Valuable for those preparing for a career as a photographer, photographic lab technician, or for those upgrading their skills. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
UNITS
PHOT 75 Introduction to Digital Imaging (also AAD 75) ............. 3
PHOT 76 Advanced Projects in Digital Imaging (also AAD 76) .... 3
PHOT 78 Digital Photography ........................................ 3
TOTAL UNITS REQUIRED: 9

LANDSCAPE PHOTOGRAPHY
SKILLS CERTIFICATE
Course work in landscape photography trains students in the techniques utilized in creating expressive images of the environment. Helps prepare students for capturing the landscape for stock photography use, magazines, web sites and other visual media. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
7 UNITS SELECTED FROM THE FOLLOWING:
PHOT 28 Independent Study ........................................... 1
PHOT 80 Color Photography ......................................... 2
PHOT 90A Introduction to the Zone System ......................... 1
PHOT 90B Field Workshop: Cityscape .............................. 1
PHOT 90L Field Workshop: Landscape ............................. 2
PHOT 90T Travel Photography Field Workshop .................... 1
TOTAL UNITS REQUIRED: 7

NARRATIVE PHOTOGRAPHY
SKILLS CERTIFICATE
This certificate trains students to photograph assignments in such a way that they tell a story. Appropriate for those interested in gaining skills used by photojournalists, documentary and editorial photographers. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
10 UNITS SELECTED FROM THE FOLLOWING:
PHOT 60B Intermediate Photography ............................... 3
PHOT 65 Documentary Photography ............................... 2
PHOT 80 Color Photography ......................................... 2
PHOT 85 Photojournalism .............................................. 2
PHOT 90H Documentary Field Workshop ......................... .5
PHOT 90J Photojournalism Field Workshop ....................... .5
PHOT 90M Autobiographical Photography ......................... .5
PHOT 90T Travel Photography Field Workshop ................... .5
TOTAL UNITS REQUIRED: 10

PHOTOGRAPHIC PROCESSES
SKILLS CERTIFICATE
Designed to give students a broad range of skills used by both laboratory technicians and photographers. Helps train students to handle a wide range of difficult assignments and creative techniques. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES
12 UNITS SELECTED FROM THE FOLLOWING:
PHOT 10 History and Aesthetics of Photography (also ART 11) . 3
PHOT 28 Independent Study ........................................... 1
PHOT 30 Photographing Works of Art (also AAD 30) ............. .5
PHOT 60B Intermediate Photography ............................... 3
PHOT 75 Introduction to Digital Imaging (also AAD 75) ............ 3
PHOT 78 Digital Photography ........................................ 3
PHOT 80 Color Photography ......................................... 2
PHOT 90A Introduction to the Zone System ......................... 1
PHOT 90G Pinhole Photography Workshop ......................... .5
PHOT 90I Night Photography Field Workshop .................... .5
PHOT 91B Alternative Processes Workshop: Handcoloring ...... .5
PHOT 91C Alternative Processes Workshop: Cyanotype ...... .5
PHOT 92 Alternative Processes ....................................... 3
TOTAL UNITS REQUIRED: 12
PHOTOGRAPHY COURSES »

PHOT 10 HISTORY AND AESTHETICS OF PHOTOGRAPHY
Also known as ART 11
Units: 3
Hours: 54 lecture
Historical and thematic survey of photography as an art form and communication tool from its invention to the present. Explores various critical perspectives including aesthetic and design principles, influential themes, periods and photographers. Investigates technical considerations, photography’s role in the development of mass culture and other societal influences. (CSU, UC)

PHOT 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

PHOT 30 PHOTOGRAPHING WORKS OF ART
Also known as AAD 30
Units: 0.5
Hours: 13 (7 lecture, 6 laboratory)
Methods and procedures involved in reproducing works of art into digital files, prints, or slides for cataloging, portfolios, or publication. Covers equipment needed for both artificial and natural light situations, camera considerations, proper exposure and presentation of copy work for both two-dimensional and three-dimensional art. Students must furnish digital or film camera, processing, storage and presentation materials. (CSU)

PHOT 60A ELEMENTARY PHOTOGRAPHY
Units: 3
Hours: 72 (36 lecture, 36 activity)
Aesthetic use of digital and film cameras. Elements of design and influence of photography as an art form explored. Topics include subject selection, exposure control, composition, lighting, digital and film camera usage, film development, enlarging, print finishing, presentation and responses to photographs within framework of historical and current perspectives. Students must furnish digital storage media, film and photographic printing paper. Providing an interchangeable lens digital or film camera recommended but not required. (CSU, UC)

PHOT 60B INTERMEDIATE PHOTOGRAPHY
Units: 3
Prerequisite: Completion of PHOT 60A with grade of “C” or better
Hours: 72 (36 lecture, 36 activity)
Technical and experimental aspects of black and white photographic tools and techniques stressing the creative use of photography. Topics include creative camera and darkroom experimentation, medium format and toy cameras, macro photography, archival permanence and the handmade book. Students must furnish film, paper and presentation materials. (CSU, UC)

PHOT 61 PHOTOGRAPHY LABORATORY EXPERIENCE
Units: 0.5-1
Corequisite: Concurrent enrollment in a photography course
Hours: 27 laboratory per .5 unit
Photographic laboratory concentrating on processing and printing of film and paper. Provides individual assistance with projects requiring special darkroom techniques. Studio, color and digital imaging laboratory available as appropriate. Students must provide film and paper. (not transferable)

PHOT 65 DOCUMENTARY PHOTOGRAPHY
Units: 2
Prerequisite: Completion of PHOT 60A or 78 with grade of “C” or better
Hours: 54 (18 lecture, 36 activity)
Photographic essay as a focused body of work. Historical origins and cultural impact of documentary photography and contemporary practice. Issues of subjective and objective response to subject matter, influence of photographic technology upon content, point of view and propaganda, organization of visual essays and archival processing. Students select projects of personal interest and expression and participate in group projects. Students must supply camera, digital media or film and presentation materials. (CSU)
PHOT 70A ADVANCED PHOTOGRAPHY  
Units: 3  
Prerequisite: Completion of PHOT 60A with grade of "C" or better  
Advisory: Completion of PHOT 78 with grade of "C" or better  
Hours: 72 (36 lecture, 36 activity)  
Studio topics in portraiture and still life with emphasis on photographic communication and expression of ideas through controlled lighting. Concentration on creative control in camera use, exposure and composition. For students seeking a career in photography or one of its related fields and for those who desire additional and advanced creative or technical work. Students must furnish camera, film or digital media, paper and presentation materials. (CSU)

PHOT 70B ADVANCED PHOTOGRAPHY  
Units: 3  
Prerequisite: Completion of PHOT 70A with grade of "C" or better  
Hours: 72 (36 lecture, 36 activity)  
Additional creative and technical work with lighting, composition and portfolio development. Concentration on refining studio techniques used in commercial and fine art photography. Students work with medium and large format cameras and a variety of film choices including digital. Students must furnish film, paper and presentation materials. (CSU)

PHOT 75 INTRODUCTION TO DIGITAL IMAGING  
Also known as AAD 75  
Units: 3  
Advisory: Completion of AAD 70 with grade of "C" or better  
Hours: 72 (36 lecture, 36 activity)  
Introduction to the acquisition and computer manipulation of photographs for design and photography. Analysis and critique of images from initial concept to final project creation. Basic scanning, image adjustments, retouching, compositing and file preparation for printing and other uses. (CSU, UC)

PHOT 76 ADVANCED PROJECTS IN DIGITAL IMAGING  
Also known as AAD 76  
Units: 3  
Advisory: Completion of PHOT 75/AAD 75 and PHOT 60A with grades of "C" or better recommended  
Hours: 72 (36 lecture, 36 activity)  
Advanced digital project development. Creating original images from a variety of input devices including scanners and digital cameras. Speed building in editing techniques. Use of various output methods appropriate for specific projects. Evaluations and critiques of completed projects. (CSU)

PHOT 78 DIGITAL PHOTOGRAPHY  
Units: 3  
Prerequisite: Completion of PHOT 60A with grade of "C" or better  
Hours: 72 (36 lecture, 36 activity)  
Use of digital cameras for direct capture of photographic images. Emphasis on practical use of the digital camera in real world situations. Creative and technical controls offered by digital cameras, image file management and image optimization. Color management and digital output to inkjet and silver-based printers. Basic video capture with digital still cameras. (CSU)

PHOT 80 COLOR PHOTOGRAPHY  
Units: 2  
Prerequisite: Completion of PHOT 78 or PHOT 75/AAD 75 with grade of "C" or better  
Hours: 54 (18 lecture, 36 activity)  
Concentration on composition, exposure, color and theme in creating expressive color photographs. In depth study of color as communication element in photography. Camera techniques, editing, file preparation and management are also covered. Using digital technology, students create digital and multimedia portfolios. Students must provide digital camera. (CSU)

PHOT 85 PHOTOJOURNALISM  
Units: 2  
Prerequisite: Completion of PHOT 60A or 78 with grade of "C" or better  
Hours: 54 (18 lecture, 36 activity)  
Theory and practice of photography for publication in newspapers and magazines. Emphasis on communication with single images and photographic essays. Simulations of professional assignments and deadlines. College publications may be utilized for practical application. Students must furnish digital camera and computer storage media. (CSU)

PHOT 88 BUSINESS PRACTICES FOR PHOTOGRAPHERS  
Units: 3  
Advisory: Completion of a minimum of three photography courses  
Hours: 54 lecture  
Successful business practices for commercial and fine art photographers. Elements of starting and running a photography business, including overhead, taxes, insurance, copyright law, contracts, pricing, marketing and advertising. Overview of business resources provided by professional photography organizations. Creation of a business plan related to the students’ career goals. (CSU)
PHOT 90A INTRODUCTION TO THE ZONE SYSTEM  
Units: 1  
Prerequisite: Completion of PHOT 60A with grade of "C" or better  
Hours: 26 (14 lecture, 12 activity)  
Basic study of the Zone System as it affects film and exposure. Topics include visualizing print, metering, placing values, determining exposure range of a scene and expansion and contraction development. Students conduct film speed tests on black and white film. Primarily focused on black/white photography, though some material regarding digital photography will be presented. (CSU)

PHOT 90B FIELD WORKSHOP: CITYSCAPE  
Units: 0.5-3  
Advisory: Completion of PHOT 60A or 78 with grade of "C" or better  
Hours: 13 (7 lecture, 6 activity) per .5 unit  
Exploration of the city and urban environments as subject matter. Topics include camera and lens use, composition, equipment, metering and lighting and the traditions of cityscape photography. Location of field study will vary. Students must supply camera, digital media or film and presentation materials. (CSU)

PHOT 90G PINHOLE PHOTOGRAPHY WORKSHOP  
Units: 0.5-3  
Advisory: Completion of PHOT 60A with grade of "C" or better  
Hours: 13 (7 lecture, 6 activity) per .5 unit  
Design, construction and use of simple, inexpensive lensless cameras from containers of various sizes and shapes with emphasis on function and aesthetics. Aperture calculations and effects of camera shape upon image distortion. Comparisons with traditional cameras and photography. Historical background and current resurgence of interest in pinhole photography explored. (CSU)

PHOT 90H DOCUMENTARY FIELD WORKSHOP  
Units: 0.5-3  
Advisory: Completion of PHOT 60A or 78 with grade of "C" or better  
Hours: 13 (7 lecture, 6 activity) per .5 unit  
Intensive field workshop covering specific locations, methods and processes of documentary record making and interpretation. Students must supply camera, digital media or film and presentation materials. Location of field study will vary. (CSU)

PHOT 90I NIGHT PHOTOGRAPHY FIELD WORKSHOP  
Units: 0.5-3  
Advisory: Completion of PHOT 60A with grade of "C" or better  
Hours: 13 (7 lecture, 6 activity) per .5 unit  
Intensive field workshop covering methods and processes of night, artificial and available light photography. Topics include camera and lens use, composition, digital and film capture, filters, equipment, metering, lighting and the unique aspects of the event, region or situation being studied. Specific locations and lighting circumstances vary. Students must furnish camera, film or digital media, processing and presentation materials. (CSU)

PHOT 90J PHOTOJOURNALISM FIELD WORKSHOP  
Units: 0.5-3  
Advisory: Completion of PHOT 60A or 78 with grade of "C" or better  
Hours: 13 (7 lecture, 6 activity) per .5 unit  
Intensive field workshop covering specific events, styles, locations, methods and processes of photojournalism. Topics include camera and lens use, composition, equipment, metering and lighting, working methods of photojournalists and the unique aspects of the event or region being studied. Students must furnish digital camera. (CSU)

PHOT 90L FIELD WORKSHOP: LANDSCAPE  
Units: 0.5-3  
Advisory: Completion of PHOT 60A or 78 with grade of "C" or better  
Hours: 13 (7 lecture, 6 activity) per .5 unit  
Exploration of landscape photography. Topics include camera and lens use, composition, equipment, metering and lighting, the social contribution of landscape photography and the unique aspects of region being studied. Aspects of travel photography also explored. Location of field study will vary. Students must supply camera, digital media or film and presentation materials. (CSU)

PHOT 90M AUTOBIOGRAPHICAL PHOTOGRAPHY  
Units: 0.5-3  
Advisory: Completion of PHOT 60A with grade of "C" or better  
Hours: 13 (7 lecture, 6 activity) per .5 unit  
Photography as a tool of expression, exploration and documentation. Topics include autobiographical references in art and photography, point of view, self as subject, varieties of personal description and narration and the influence of context such as gender, age, family and culture upon visual communication. Students must furnish camera, film or digital media, print processing and presentation supplies. (CSU)

PHOT 90P WORKSHOP: PORTRAITURE  
Units: 0.5-3  
Prerequisite: Completion of PHOT 60A or 78 with grade of "C" or better  
Hours: 13 (7 lecture, 6 activity) per .5 unit  
Exploration of portraiture in outdoor settings. Topics include camera, lens and equipment selection, camera use, lighting, posing and composition. Students must supply camera, digital media or film and presentation materials. Location of field study will vary. (CSU)
PHOT 90T TRAVEL PHOTOGRAPHY FIELD WORKSHOP
Units: 0.5-3
Advisory: Completion of PHOT 60A with grade of "C" or better
Hours: 13 (7 lecture, 6 activity) per .5 unit
Intensive field workshop covering specific locations, methods and processes of travel photography in domestic and international locations. Includes visual themes, narrative and individual images, editorial and stock photography, composition, digital or film cameras, materials and equipment, exposure, selection and presentation of photographs. Overview of the population, habitat, environment and geography, culture and traditions of the region being studied. Special considerations of travel photography. Students must furnish camera, film or digital media, processing and presentation supplies. (CSU)

PHOT 91B ALTERNATIVE PROCESSES WORKSHOP:
HANDCOLORING
Units: 0.5
Hours: 13 (7 lecture, 6 laboratory)
Intensive workshop exploring handcoloring black and white photographs. Topics include oils, hybrid digital and hand techniques, toning and alternative handcoloring methodology. (CSU)

PHOT 91C ALTERNATIVE PROCESSES WORKSHOP:
CYANOTYPE
Units: 0.5
Hours: 13 (7 lecture, 6 laboratory)
Intensive workshop exploring the cyanotype processes. Cyanotype is an historic non-silver photographic process which gives a blue image. (CSU)

PHOT 92 ALTERNATIVE PROCESSES
Units: 3
Advisory: Completion of PHOT 60A with grade of "C" or better
Hours: 72 (36 lecture, 36 activity)
Exploration of alternative photographic processes, many of which were first developed in the 19th century and are known for producing expressive prints with a unique look. The merging of digital technology and non-traditional printing will be explored. Processes may include: cyanotype, Van Dyke brown, gum dichromate, hand-coated silver emulsion and laser transfers. (CSU)

PHOT 95 INTERNSHIP IN PHOTOGRAPHY
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

PHYSICAL EDUCATION

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION

DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
ASSOCIATE DEAN, ATHLETICS: vacant
AREA OFFICE: Pt
LIAISON COUNSELORS: C. Eupting-Davis, B. Gosney

The Physical Education program offers a wide variety of courses that improve physical fitness, sport skills and dance performance abilities. The courses are designed to provide physiological results and wholesome social interchange. Lower division curricula for majors are dependent upon California university and out-of-state university requirements.

PHYSICAL EDUCATION
A.A. OR A.S. DEGREE

The Physical Education A.A./A.S. degree provides students with the opportunity to meet the requirements for transferring to four-year colleges in the areas of Physical Education, Exercise Science, Kinesiology and Athletic Training. The program in Physical Education outlined below is typical of lower-division requirements for four-year colleges and universities; some requirements vary from college to college. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED CORE COURSE:
PHED 81 Introduction to Physical Education ....................... 3

PLUS 9-10 UNITS FROM THE FOLLOWING:
BIOL 5 Human Anatomy OR
BIOL 7A Human Anatomy I AND
BIOL 7B Human Anatomy II .................................. 4-5
BIOL 6 Human Physiology ...................................... 5
CHEM 2A Introduction to Chemistry ............................ 5

PLUS 6 UNITS FROM THE FOLLOWING:
BIOL 1 General Biology ............................................ 4
BIOL 10 Introduction to Biology .................................. 3
HED 1 Standard First Aid/Community CPR ........................ 3
PHYSICAL EDUCATION COURSES »

PHED 3A BASIC AEROBIC TRAINING WITH FITNESS EQUIPMENT
Formerly known as PHED 3
Units: 0.5-2
Hours: 36 activity per unit
Designed to educate students in the areas of basic aerobic and cardiovascular fitness using fitness equipment as well as evaluate and improve present aerobic fitness level. (CSU, UC-with unit limitation)

PHED 3B ADVANCED AEROBIC CIRCUIT TRAINING WITH FITNESS EQUIPMENT
Units: 0.5-2
Advisory: Completion of PHED 3A with grade of “C” or better
Hours: 36 activity per unit
Designed to educate students in the areas of aerobic circuit training as well as evaluate and improve present aerobic fitness level. (CSU, UC-with unit limitation)

PHED 5A WEIGHT TRAINING
Formerly known as PHED 5
Units: 0.5-2
Hours: 36 activity per unit
Progressive resistance exercises with free weights and weight machines to develop muscular strength and endurance. (CSU, UC-with unit limitation)

PHED 5B STRENGTH TRAINING—CIRCUIT AND POWER LIFTING
Units: 0.5-2
Hours: 36 activity per unit
Strength training exercises in progressive circuit and power lifting with free weights and weight machines. Designed to develop core strength, muscular strength and endurance. (CSU, UC-with unit limitation)

PHED 6 PHYSICAL FITNESS
Units: 0.5-2
Hours: 36 activity per unit
Emphasis on life-long exercise principles using a variety of muscular strength and endurance, aerobics and flexibility workouts. Examines cardio-respiratory fitness, exercise principles and how to design and evaluate fitness programs/workouts. Students experience different types of workouts and are encouraged to apply the information to their own body and level of conditioning. (CSU, UC-with unit limitation)

PHED 7 AEROBIC FITNESS
Units: 0.5-2
Hours: 36 activity per unit
Creative exercises to promote a wide range of flexibility, muscular strength and endurance and cardiovascular endurance. Includes a choreographed warm-up, aerobic segment, floorwork and warm-down utilizing a variety of calisthenic and dance techniques and skills. (CSU, UC-with unit limitation)

PHED 8 AQUACISE
Units: 0.5-2
Hours: 36 activity per unit
Designed to improve muscle tone and cardiovascular fitness. Exercises conducted in the water, utilizing the resistance of water against body movement. Strength and conditioning exercises are integrated with aerobic exercises so that students may have the potential for maximum benefit in a short time. Suitable for students with injuries or physical limitations. (CSU, UC-with unit limitation)
PHED 9 STEP AEROBIC TRAINING  
Units: 0.5-2  
Hours: 36 activity per unit  
An intense cardiovascular and muscular endurance workout utilizing an adjustable "step" for differing fitness levels choreographed to music to include: warm-up, cardiovascular step segment, floor work and flexibility warm-down. (CSU, UC-with unit limitation)  

PHED 10 GOLF  
Units: 0.5-2  
Hours: 36 activity per unit  
Development of sufficient basic proficiency in golf to recognize and enjoy it as a lifetime activity; includes U.S.G.A. rules, etiquette and the fundamental mechanics involved in the use of irons and woods. (CSU, UC-with unit limitation)  

PHED 11 BADMINTON  
Units: 0.5-2  
Hours: 36 activity per unit  
Fundamental techniques of service, forehand and backhand strokes. Covers strategy of singles and doubles play, rules and etiquette. Provides an opportunity for competition. (CSU, UC-with unit limitation)  

PHED 13 CARDIO KICKBOXING  
Units: 0.5-2  
Hours: 36 activity per unit  
An intense cardiovascular and muscular endurance workout utilizing boxing, calisthenics, Tai Chi and QiGong for differing fitness levels choreographed to music to include: warm-up; cardiovascular kickboxing segment, floor work, self-defense and cool down. (CSU, UC-with unit limitation)  

PHED 14 TAI CHI  
Units: 0.5-2  
Hours: 36 activity per unit  
Ancient Chinese martial art that improves balance and coordination, promotes health and reduces stress. Emphasizes meditation in motion and self-defense. Focus on mind/body harmony through balancing body energy (chi). (CSU, UC-with unit limitation)  

PHED 16 TENNIS  
Units: 0.5-2  
Hours: 36 activity per unit  
Fundamental techniques of service, forehand and backhand. Covers strategy, rules and etiquette. Provides an opportunity for competition in both singles and doubles play. (CSU, UC-with unit limitation)  

PHED 17 BODY SCULPTING  
Units: 0.5-2  
Hours: 36 activity per unit  
Designed to improve muscle tone and cardiovascular fitness. Focus on non-impact weight bearing exercises utilizing light-weight, high-repetition movements for maximum muscle toning. Aerobic exercises integrated with strength and conditioning exercises for maximum toning with cardiovascular benefits. Student must provide Yoga or Pilates "sticky" mat. (CSU, UC-with unit limitation)  

PHED 19 MAT PILATES  
Units: 0.5-2  
Hours: 36 activity per unit  
Designed to improve "core" muscles of the torso, improve posture, suppleness and elongate the body. Targets back and abdominal muscle groups. Includes cardiovascular warm up, aerobic conditioning, strengthening exercises and cool down. Student must provide Yoga or Pilates "sticky" mat. (CSU, UC-with unit limitation)  

PHED 22 FITNESS AND WEIGHT MANAGEMENT BOOT CAMP  
Units: 2-3  
Hours: 54 (18 lecture, 36 activity) 2 units; 72 (36 lecture, 36 activity) 3 units  
This course encourages a healthy attitude toward exercise, wellness and weight management. Topics include assessing and improving fitness levels, as well as nutrition, healthy living and active lifestyle strategies that are involved in attaining and maintaining appropriate levels of wellness. Students with body mass indexes of 25 or over are best suited for this course because of the emphasis on weight management. (CSU, UC-with unit limitation)  

PHED 23 RECREATIONAL BASKETBALL  
Units: 0.5-2  
Hours: 36 activity per unit  
Introduction to basketball as a recreational sport, designed to assist students in acquiring basic skills and increasing aerobic and anaerobic fitness levels, while actively participating in basketball activities. (CSU, UC-with unit limitation)  

PHED 26 VOLLEYBALL  
Units: 0.5-2  
Hours: 36 activity per unit  
Fundamental skills, rules and strategy. Primary emphasis on the application of skills and strategy needed to play power volleyball. (CSU, UC-with unit limitation)
PHED 27A SOCCER LEVEL I
Formerly known as PHED 27
Units: 0.5-2
Hours: 36 activity per unit
Fundamental theory and practice, including passing, dribbling, shooting, formations and strategy. Primary emphasis on the application of skills, rules and introduction to strategy in game play. (CSU, UC-with unit limitation)

PHED 27B SOCCER LEVEL II
Units: 0.5-2
Hours: 36 activity per unit
Tactical theory and practice, including small group attacking, small group defending, team attacking and team defending. Primary emphasis on tactics and strategy within the game. (CSU, UC-with unit limitation)

PHED 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

PHED 29 FLAG FOOTBALL
Units: 0.5-2
Hours: 36 activity per unit
Fundamental theory and practice of flag football skills and knowledge including: passing, kicking, receiving, blocking, defending and rushing. Covers the strategy of team play, rules and etiquette. Provides the opportunity for skill development and competition. (CSU, UC-with unit limitation)

PHED 30 RUGBY
Units: 0.5-2
Hours: 36 activity per unit
Designed for both men and women wishing to learn the physical needs and skills of Rugby. Primary emphasis on application of skills, rules and strategy in game play. (CSU, UC-with unit limitation)

PHED 32 ACE PERSONAL TRAINER PREPARATION
Units: 3
Hours: 54 lecture
Synthesis of principles and theories in exercise physiology, kinesiology, nutrition and basic behavioral sciences. Application of principles to physical fitness testing and exercise program design and implementation. Prepares students for the American Council on Exercise (ACE) personal trainer certification examination. (CSU)

PHED 33 RECERTIFICATION FOR LIFEGUARD TRAINING & PROFESSIONAL RESCUE CPR
Units: 1
Prerequisite: Possession of a current Lifeguard Training Certificate
Hours: 24 (12 lecture, 12 activity)
Review of Lifeguard Training and CPR for the Professional Rescuer. Leads to recertification of American Red Cross Lifeguard Training and CPR for the Professional Rescuer. Certificates issued upon successful completion of Red Cross requirements. May be repeated for credit to meet legally mandated requirements. (not transferable)

PHED 35 LIFEGUARD TRAINING
Units: 2.5
Advisory: Candidates must demonstrate strong swimming skills
Hours: 54 (36 lecture, 18 activity)
Knowledge and skills necessary to keep patrons of aquatic facilities safe in and around water. American Red Cross Lifeguard Training, Waterfront Lifeguard, Head Lifeguard and CPR for the Professional Rescuer certificates issued upon successful completion of Red Cross requirements. (CSU, UC)

PHED 36 FUNDAMENTAL SWIMMING
Units: 0.5-2
Hours: 36 activity per unit
Development of muscular and cardiovascular endurance. Instruction in distance training, interval training, water exercise, sprint training, stroke techniques and water games. (CSU, UC-with unit limitation)

PHED 39 SWIMMING CONDITIONING
Units: 0.5-2
Hours: 36 activity per unit
Development of physical and mental adjustment to the water. For nonswimmers through advanced. Basic instruction in swimming, water safety skills, water entry and exit and water exercises. Instruction and practice in developing aerobic fitness. (CSU, UC-with unit limitation)

PHED 42 WATER SAFETY INSTRUCTOR/INSTRUCTOR CANDIDATE TRAINING
Units: 2
Prerequisite: Possession of a current American Red Cross Swimmer Certificate or equivalent
Hours: 54 (36 lecture, 18 activity)
Methods of instruction in aquatic skills to include American Red Cross Water Safety and Swimming courses. American Red Cross Instructor Candidate Training, Water Safety Instructor and Fundamentals of Instructor Training certificates issued upon successful completion of Red Cross requirements. (CSU, UC)

PHED 51B SQUARE DANCE
Formerly known as PHED 51
Units: 0.5-2
Hours: 36 activity per unit
Introduction to square, round and contra dancing. Includes development of rhythm and the history of the dances. (CSU, UC)
PHED 51C LINE DANCE
Formerly known as PHED 51
Units: 0.5-2
Hours: 36 activity per unit
Basic skills in line dancing. Traditional, past and current dances are taught. Includes development of rhythm and the history of social dances. (CSU, UC)

PHED 51D MODERN BALLROOM DANCE
Formerly known as PHED 51
Units: 0.5-2
Hours: 36 activity per unit
Basic skills in social and ballroom dance steps, including Swing, Tango, Waltz, Fox Trot, Cha-Cha, Rumba, Mambo and Samba. Includes development of rhythm and the history of social dances. (CSU, UC)

PHED 53 MODERN DANCE
Units: 0.5-2
Hours: 36 activity per unit
Development and improvement in body alignment, flexibility, strength endurance, balance coordination, relaxation coordination and modern dance techniques so that the body can be used as an instrument of creative expression. (CSU, UC)

PHED 54 JAZZ DANCE
Units: 0.5-2
Hours: 36 activity per unit
Fundamentals of jazz dance with emphasis on ballet basics, flexibility, coordination, weight transference, isolation, floor and barre work, including jazz history, composition basics, stylization and improvisation. (CSU, UC)

PHED 55 FUNDAMENTALS OF YOGA
Units: 0.5-2
Hours: 36 activity per unit
Development of basic Yoga postures, breathing practices, stretching and relaxation techniques as a method to improve flexibility, decrease stress and improve physical and mental well-being. (CSU, UC-with unit limitation)

PHED 56A BALLET I
Formerly known as PHED 56
Units: 0.5-2
Hours: 36 activity per unit
Introduction to fundamentals of classical ballet focusing on the development of technique through proper alignment, flexibility and strength. Elements of history, terminology and appreciation of ballet as an art form are explored. (CSU, UC)

PHED 56B BALLET II
Units: 0.5-2
Advisory: Completion of PHED 56A with grade of "C" or better
Hours: 36 activity per unit
Continuation of classical ballet training, exploring elements of ballet history, musicality, terminology and performance. Pointe technique and character dance are also presented. (CSU, UC)

PHED 57 DEVELOPING A PERSONAL YOGA PRACTICE
Units: 0.5-2
Prerequisite: Completion of PHED 55 or equivalent
Hours: 36 activity per unit
Proficiency in Yoga postures, breathing exercises and concentration techniques including advanced positions and increased endurance. (CSU, UC-with unit limitation)

PHED 58 CONTEMPORARY HATHA YOGA STYLES
Units: 1.5
Prerequisite: Completion of PHED 55 and PHED 57
Hours: 36 (18 lecture, 18 activity)
Designed to explore the many styles of contemporary hatha yoga practice: traditional, continuous, power and aerobic. Focus on the elements within each style and their link to their philosophical origin. Students required to design and lead a yoga session reflective of each style. (CSU, UC-with unit limitation)

PHED 59 TEACHING YOGA TO SPECIAL POPULATIONS
Units: 1.5
Prerequisite: Completion of PHED 55 and PHED 57
Hours: 36 (18 lecture, 18 activity)
Designed to explore the ways in which the practice of hatha yoga may be adapted to teaching populations with special needs. Students required to create customized sessions taking into account specific given needs. (CSU)

PHED 60 INTRODUCTION TO THE YOGA TRADITION
Units: 2
Hours: 36 lecture
Discussion of the traditional principles of Yoga and how its practices have been brought to the West. (not transferable)

PHED 64 MARTIAL ARTS: JUJITSU
Units: 0.5-2
Hours: 36 activity per unit
Explores Jujitsu as the predecessor of Judo. Focus on Japanese customs, martial arts culture, nerve and pressure points and controlling an attacker without injury. (CSU, UC-with unit limitation)

PHED 65 MARTIAL ARTS: KENPO KARATE
Units: 0.5-2
Hours: 36 activity per unit
Modern fighting art, featuring a vast array of open handed and weapons techniques, katas and kumite techniques. Teaches focus and coordination, as well as mental and physical discipline. (CSU, UC-with unit limitation)
PHED 66 COMBATIVE SELF DEFENSE
Units: 1-2
Hours: 36 activity per unit
Hand-to-hand combat for self defense. Emphasis on disarming and immobilizing an assailant; includes martial arts such as Kenju Do. (CSU, UC-with unit limitation)

PHED 67 HOW TO TEACH YOGA
Units: 2
Prerequisite: Completion of PHED 57 and PHED 68
Hours: 36 lecture
Designed for future yoga teachers. Teaching of techniques, ethics of teaching, teacher/student relationship and yoga as a vocation. (not transferable)

PHED 68 INTRODUCTION TO MEDITATION
Units: 0.5-2
Hours: 36 activity per unit
Exploration of the body/mind connection through techniques of visualization, affirmation, concentration and meditation. (CSU)

PHED 69 PEACEFUL SELF DEFENSE
Units: 0.5-2
Hours: 36 activity per unit
Introduction to fundamental principles, concepts and theories of the original martial arts. Class includes basic self-defense, non violent self defense strategies, cardio conditioning, strength building exercises, flexibility training, nutrition, deep relaxation, meditation, with a focus on mind-body connection as it pertains to the art of physical combat. Benefits students of all skill levels. (CSU, UC-with unit limitation)

PHED 70 ADAPTIVE PHYSICAL EDUCATION
Units: 0.5-2
Advisory: Physician’s approval recommended for participation
Hours: 36 activity per unit
An activity course to meet the needs of disabled persons, giving attention to their emotional, social and physical drives through group physical activities. (CSU, UC-with unit limitation)

PHED 71 INDIVIDUALIZED EXERCISES
Units: 0.5-2
Advisory: Physician’s approval recommended for participation
Hours: 36 activity per unit
Designed for students having difficulty with ambulation, balance and/or motor skills. Individualized exercise programs based on the student's physical abilities, physician's recommendation and student's personal goals. (CSU, UC-with unit limitation)

PHED 72 ADAPTIVE AQUATICS
Units: 0.5-2
Advisory: Physician’s approval recommended for participation
Hours: 36 activity per unit
For physically limited individuals, providing individually prescribed exercises, adaptive and/or modified swimming and exercises designed to improve cardiovascular endurance. (CSU, UC-with unit limitation)

PHED 73 ADAPTIVE AEROBIC FITNESS
Units: 0.5-2
Advisory: Physician’s approval recommended for participation
Hours: 36 activity per unit
Aerobic fitness training for individuals with disabilities. Emphasis on improving individual levels of aerobic fitness through the use of fitness machines. Class activities adapted and modified to meet individual needs. (CSU, UC-with unit limitation)

PHED 74 ADAPTIVE WALK/JOG
Units: 1
Advisory: Physician’s approval recommended for participation
Hours: 36 activity per unit
Walking/jogging for people with permanent or short-term disabilities. Emphasis on walking/jogging techniques, aerobic conditioning, program development, nutrition, proper workout attire and safety. (CSU)

PHED 75 MULTI SELF DEFENSE SYSTEM
Units: 0.5-2
Hours: 36 activity per unit
A multi combat self defense system combining the martial arts of Escrima (stick and knife fighting), Jujitsu and Kenpo. Focus on teaching application of principles leading to utilizing ordinary items to help defend oneself. Emphasis on strengthening the body and improving endurance. (CSU, UC-with unit limitation)

PHED 76 PEACEFUL SELF DEFENSE
Units: 0.5-2
Advisory: Physician’s approval recommended for participation
Hours: 36 activity per unit
Introduction to fundamental principles, concepts and theories of the original martial arts. Class includes basic self-defense, non violent self defense strategies, cardio conditioning, strength building exercises, flexibility training, nutrition, deep relaxation, meditation, with a focus on mind-body connection as it pertains to the art of physical combat. Benefits students of all skill levels. (CSU, UC-with unit limitation)

PHED 77 HOW TO TEACH YOGA
Units: 2
Prerequisite: Completion of PHED 57 and PHED 68
Hours: 36 lecture
Designed for future yoga teachers. Teaching of techniques, ethics of teaching, teacher/student relationship and yoga as a vocation. (not transferable)

PHED 78 INTRODUCTION TO MEDITATION
Units: 0.5-2
Hours: 36 activity per unit
Exploration of the body/mind connection through techniques of visualization, affirmation, concentration and meditation. (CSU)

PHED 79 PEACEFUL SELF DEFENSE
Units: 0.5-2
Hours: 36 activity per unit
Introduction to fundamental principles, concepts and theories of the original martial arts. Class includes basic self-defense, non violent self defense strategies, cardio conditioning, strength building exercises, flexibility training, nutrition, deep relaxation, meditation, with a focus on mind-body connection as it pertains to the art of physical combat. Benefits students of all skill levels. (CSU, UC-with unit limitation)

PHED 80 INTRODUCTION TO PHYSICAL EDUCATION
Units: 3
Hours: 54 lecture
Designed for physical education majors and minors. Survey of the basic principles and sub-disciplines in Kinesiology. Examines the study of Physical Education, Exercise Science and Sports with emphasis on curriculum standards and career opportunities. (CSU)

PHED 81 SPORTS OFFICIATING
Units: 2
Hours: 54 (36 lecture, 18 laboratory)
Officiating team and individual sports. Emphasizes officiating concepts, skills, fundamentals and etiquette of basketball, baseball/softball, volleyball and soccer. (CSU)

PHED 82 PHYSIOLOGY OF FITNESS
Units: 3
Hours: 54 lecture
Introduction to physiological adaptations to exercise, with considerations of the bio-physical values of exercise in maintaining fitness throughout an individual's life span. Designed to teach principles of cardiovascular endurance and proper weight control by engaging students in personal fitness through writing of their own individual programs. (CSU, UC-with unit limitation)
PHED 84 CARE AND PREVENTION OF ATHLETIC INJURIES  
Units: 3  
Hours: 54 lecture  
Designed for students interested in the prevention, evaluation and care of athletic injuries. Introduction to theoretical concepts and practical skills necessary for the proper and effective management of common athletic injuries and medical conditions. Includes the prevention, recognition, evaluation, management and rehabilitation of injuries, taping techniques and emergency procedures. (CSU, UC)

PHED 85 TECHNIQUES OF FITNESS INSTRUCTION  
Units: 3  
Hours: 72 (36 lecture, 36 activity)  
Methods of instruction in leading group exercise in health clubs, resorts, institutions, corporate programs or medically supervised exercise programs. Includes music movement choreography, communication and cueing, practical application of kinesiology and muscle physiology to design class formats in aerobics, step, slide, muscle conditioning, water fitness, stretch, Yoga and fitness walking programs. (CSU)

PHED 86 PSYCHOLOGY OF SPORT  
Units: 3  
Hours: 54 lecture  
Surveys the theory, research and applications of psychology pertaining to exercise and sports. Presents current topics and issues relevant to sport psychology. Designed for students interested in coaching, athletic training and personal performance. (CSU)

PHED 87 CROSS TRAINING  
Units: 2  
Hours: 54 (18 lecture, 36 activity)  
Daily physical fitness training utilizing aerobic and anaerobic training methods including: swim workouts, resistance training, stationary exercise equipment and running. (CSU, UC-with unit limitation)

PHED 88 INTRODUCTION TO COACHING TEAM SPORTS  
Units: 3  
Hours: 54 lecture  
Designed for students interested in coaching team sports. Emphasizes the components of team concepts and the organizational skills needed to implement and conduct a team sport program. (CSU, UC-with unit limitation)

PHED 89A THEORY OF BASEBALL  
Units: 3  
Hours: 54 lecture  
Study and analysis of competitive baseball. Emphasis on defense, offense, pitching, base running and team strategy. Designed for students with baseball experience and/or the desire to coach baseball at any level. (CSU, UC-with unit limitation)

PHED 89B THEORY OF BASKETBALL  
Units: 2  
Hours: 36 lecture  
Study and analysis of competitive basketball. Emphasis on defense, offense, individual and team skill development, rules and games preparation and strategy. Designed for students with previous basketball experience and/or the desire to coach basketball at any level. (CSU, UC-with unit limitation)

PHED 89C THEORY OF SOFTBALL  
Units: 3  
Hours: 54 lecture  
Study and analysis of competitive softball. Emphasis on defense, offense, pitching, baserunning, team strategies, stats recording and scorekeeping. Designed for students with softball experience and/or the desire to coach softball at any level. (CSU, UC-with unit limitation)

PHED 89F THEORY OF FOOTBALL  
Units: 2  
Hours: 36 lecture  
Study and analysis of competitive football. Emphasis on defense, offense, special teams and strategies. Designed for students with football experience and/or the desire to coach football at any level. (CSU, UC-with unit limitation)

PHED 93 SPORTS ACTIVITIES  
Units: 0.5-2  
Hours: 36 activity per unit  
Intra-class competition in the group activities of basketball, flag football, volleyball, soccer and softball. (CSU, UC-with unit limitation)

PHED 94 INTRAMURAL ATHLETICS  
Units: 0.5-2  
Hours: 36 activity per unit  
Organized competition for school championships in a variety of sports. FALL: Flag Football, Volleyball and Basketball. SPRING: Basketball, Volleyball and Softball. Individual and dual sports championships also awarded in Badminton, Tennis, Golf, Archery and a variety of other activities. (CSU, UC-with unit limitation)

PHED 114 CHEERLEADING TRAINING  
Units: 1-2  
Hours: 36 activity per unit  
Includes warm-up, flexibility, strength and conditioning, technical skills and choreography of cheerleading, dance, stunting and tumbling for performance and entertainment. (CSU, UC-with unit limitation)
PHYSICAL EDUCATION

PHYSICS

PHYSICAL EDUCATION

PHED 200 FIRE ACADEMY PHYSICAL TRAINING
Units: 2.5
Corequisite: Concurrent enrollment in FIRE 100
Hours: 80 (28 lecture, 52 laboratory)
Designed for Firefighter Academy Trainees, emphasizing lifetime fitness, principles of physical fitness, individual fitness programs, managing body composition, stress indicators and management, nutrition and development of muscular strength and cardiovascular efficiency. (CSU)

PHED 300 SELECTED TOPICS IN PHYSICAL EDUCATION
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC with unit limitation)

PHED 802 ADAPTIVE MOTOR SKILL DEVELOPMENT
Formerly known as SUPE 802
Units: 0
Hours: 54 laboratory
Physical activities to meet the varied needs of substantially disabled students. Activities include team sports, jogging/walking, weight training, Special Olympic training, swimming and yoga. May be repeated. (noncredit)

PHED 800 SELECTED TOPICS IN PHYSICAL EDUCATION
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC with unit limitation)

PHED 802 ADAPTIVE MOTOR SKILL DEVELOPMENT
Formerly known as SUPE 802
Units: 0
Hours: 54 laboratory
Physical activities to meet the varied needs of substantially disabled students. Activities include team sports, jogging/walking, weight training, Special Olympic training, swimming and yoga. May be repeated. (noncredit)

SCIENCES AND MATHEMATICS
DEAN: Heather Roberts
ASSOCIATE DEAN: Michael Kane
DIVISION OFFICE: V 211
FACULTY: D. Calabrese, D. Harris, A. Shackell
LIAISON COUNSELORS: C. Axton, E. Farrelly, Reyes Ortega

The Physics Department offers coursework satisfying the needs of students wishing to transfer to four-year colleges and other institutions for further study in science and engineering. Those students wishing a basic background in Physics for study in the many fields based upon science and careers in teaching, medicine, agriculture and other sciences will also find coursework.

TRANSFER MAJOR REQUIREMENTS in Physics are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Four-year graduates in Physics are qualified for positions in research, teaching, engineering, medicine and industry.

PHYSICS FOR TRANSFER
AS-T DEGREE

Physics is a program that provides students of diverse abilities and needs rigorous preparation that affords them opportunities to develop the technical, analytical and critical thinking skills necessary to achieve their wide ranging goals and become lifelong learners. Program curriculum introduces students to the fundamental principles that govern the nature of interactions in the physical world. The curriculum strongly emphasizes both the theoretical and experimental fundamentals in physics. Successful completion of the curriculum in physics prepares the student for transfer to four-year colleges and universities.

The Associate in Science in Physics for Transfer degree (AS-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Physics. Students completing the Associate in Science in Physics for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Science in Physics for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:
• completion of the major requirements with grades of C or better;
  and
• certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.
**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 205</td>
<td>Principles of Physics: Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 205L</td>
<td>Principles of Physics Laboratory: Mechanics</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 210</td>
<td>Principles of Physics: Electricity and Magnetism</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 210L</td>
<td>Principles of Physics Laboratory: Electricity and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Magnetism</td>
<td></td>
</tr>
<tr>
<td>PHYS 215</td>
<td>Principles of Physics: Heat, Waves and Modern Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 215L</td>
<td>Principles of Physics Laboratory: Heat, Waves and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modern Physics</td>
<td></td>
</tr>
<tr>
<td>MATH 30</td>
<td>Analytical Geometry and Calculus I</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 31</td>
<td>Analytical Geometry and Calculus II</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 32</td>
<td>Analytical Geometry and Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 33</td>
<td>Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 25-29**

Additional Recommended Preparation (while these courses are not required for this degree, completion of these courses will better prepare students for upper-division physics courses):
- MATH 33 Differential Equations and Linear Algebra
- CSCI 12 Object-Oriented Programming
- CHEM 1A General Chemistry

**PHYSICS COURSES**

**A.S. DEGREE**

The Physics major recognizes a concentration in the field of physics. Successful completion of the curriculum in physics and the associated electives prepare Physics students for transfer to four-year colleges or universities. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 205</td>
<td>Principles of Physics: Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 205L</td>
<td>Principles of Physics Laboratory: Mechanics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 210</td>
<td>Principles of Physics: Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 210L</td>
<td>Principles of Physics Laboratory: Electricity and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Magnetism</td>
<td></td>
</tr>
<tr>
<td>PHYS 215</td>
<td>Principles of Physics: Heat, Waves and Modern Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 215L</td>
<td>Principles of Physics Laboratory: Heat, Waves and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modern Physics</td>
<td></td>
</tr>
</tbody>
</table>

**PLUS 3 COURSES FROM:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 30</td>
<td>Analytical Geometry and Calculus I</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 31</td>
<td>Analytical Geometry and Calculus II</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 32</td>
<td>Analytical Geometry and Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 33</td>
<td>Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 25-29**

Recommended Electives: CHEM 1B, 5; ENGR 17, 17L, 35, 45; CIS 50, 60, 70, 80, 90

**PHYSICS COURSES**

**PHYS A FOUNDATIONS OF COLLEGE PHYSICS**

*Units: 3*

Prerequisite: Completion of or concurrent enrollment in MATH 8 or equivalent with a grade of "C" or better
Advisory: Completion of ENGL 50, or eligibility for ENGL 11, or equivalent strongly recommended

*Hours: 54 lecture*

Intended to prepare students for PHYS 2A and 4A. Focuses on measurement, relevant mathematical concepts, problem-solving and a variety of concepts in physics. (not transferable)

**PHYS 10 BASIC CONCEPTS IN PHYSICS**

*Units: 3*

Prerequisite: Completion of MATH A or equivalent with grade of "C" or better
Advisory: Eligibility for ENGL 11 or equivalent strongly recommended

*Hours: 54 lecture*

Introduction to the laws of motion, properties of matter, heat, sound, electricity, magnetism, light, atomic and nuclear physics and relativity. Emphasis is on familiar phenomena in everyday life.

Intended for nonscience majors. (CSU, UC-with unit limitation)

**PHYS 11 PHYSICAL SCIENCE LABORATORY**

*Units: 1*

Prerequisite: Concurrent enrollment in PHYS 10 or completion of PHYS 10 with a grade of "C" or better
Advisory: Eligibility for ENGL 11 or equivalent strongly recommended

*Hours: 54 laboratory*

An optional laboratory course taken in conjunction with PHYS 10. Integrates abstract concepts from PHYS 10 into concrete applications through experimentation. (CSU, UC-with unit limitation)

**PHYS 28 INDEPENDENT STUDY**

*Units: 1-3*

Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)
PHYS 105 GENERAL PHYSICS I
Formerly known as PHYS 2A (PHYS 105 and 105L, combined)
Units: 3
Prerequisite: Completion of MATH 8 or high school trigonometry with grade of “C” or better
Corequisite: Concurrent enrollment in PHYS 105L
Advisory: Eligibility for ENGL 11 strongly recommended
Hours: 54 lecture
Noncalculus introduction to the principles of mechanics, properties of matter and heat. Emphasis on applications relevant to several majors, including premedical, predental, optometry, forestry, architecture and biological science. (PHYS 105 and 105L, approved as C-ID PHYS 105) (CSU, UC-with unit limitation)

PHYS 105L GENERAL PHYSICS I LABORATORY
Formerly known as PHYS 2A (PHYS 105 and 105L, combined)
Units: 1
Corequisite: Concurrent enrollment in PHYS 105
Advisory: Eligibility for ENGL 11 strongly recommended
Hours: 54 laboratory
Laboratory portion of PHYS 105. Noncalculus introduction to the principles of mechanics, properties of matter and heat. Emphasis on applications relevant to several majors, including premedical, predental, optometry, forestry, architecture and biological science. (PHYS 105 and 105L, approved as C-ID PHYS 105) (CSU, UC-with unit limitation)

PHYS 105R PROBLEM SOLVING FOR PHYSICS 105
Formerly known as PHYS 2X
Units: 1
Corequisite: Concurrent enrollment in PHYS 105
Hours: 18 lecture
Optional problem solving course to accompany PHYS 105. Includes kinematics, dynamics, energy, momentum, fluids and thermodynamics. (CSU, UC-with unit limitation)

PHYS 110 GENERAL PHYSICS II
Formerly known as PHYS 2B (PHYS 110 and 110L, combined)
Units: 3
Prerequisite: Completion of PHYS 105 and 105L with grades of “C” or better
Corequisite: Concurrent enrollment in PHYS 110L
Hours: 54 lecture
Noncalculus introduction to the principles of waves, sound, light, electricity, magnetism and modern physics. Emphasis on applications relevant to several majors, including premedical, predental, optometry, forestry, architecture and biological science. (PHYS 110 and 110L, approved as C-ID PHYS 110) (CSU, UC-with unit limitation)

PHYS 110L GENERAL PHYSICS II LABORATORY
Formerly known as PHYS 2B (PHYS 110 and 110L, combined)
Units: 1
Prerequisite: Completion of PHYS 105 and 105L with grades of “C” or better
Corequisite: Concurrent enrollment in PHYS 110
Hours: 54 laboratory
Laboratory portion of PHYS 110. Noncalculus introduction to the principles of waves, sound, light, electricity, magnetism and modern physics. Emphasis on applications relevant to several majors, including premedical, predental, optometry, forestry, architecture and biological science. (PHYS 110 and 110L, approved as C-ID PHYS 110) (CSU–with unit limitation)

PHYS 110R PROBLEM SOLVING FOR PHYSICS 110
Formerly known as PHYS 2Y
Units: 1
Corequisite: Concurrent enrollment in PHYS 110
Hours: 18 lecture
Optional problem solving course to accompany PHYS 110. Includes sound, light, electricity, magnetism and modern physics. (CSU, UC-with unit limitation)

PHYS 205 PRINCIPLES OF PHYSICS: MECHANICS
Formerly known as PHYS 4A (PHYS 205 and 205L, combined)
Units: 4
Prerequisite: Completion of MATH 30 and 31 with grades of “C” or better (MATH 31 may be taken concurrently); AND PHYS A, PHYS 105 and 105L, or high school physics with grade(s) of “C” or better
Corequisite: Concurrent enrollment in PHYS 205L
Advisory: Eligibility for ENGL 11 strongly recommended
Hours: 72 lecture
Calculus-based introduction to the principles of kinematics, dynamics, energy, momentum, rotational motion, gravitation and fluids. The Physics 205/210/215 sequence presents the general principles and analytical methods used in physics for physical science and engineering majors. (PHYS 205 and 205L, approved as C-ID PHYS 205) (CSU, UC-with unit limitation)

PHYS 205L PRINCIPLES OF PHYSICS LABORATORY: MECHANICS
Formerly known as PHYS 4A (PHYS 205 and 205L, combined)
Units: 1
Corequisite: Concurrent enrollment in PHYS 205
Advisory: Eligibility for ENGL 11 strongly recommended
Hours: 72 lecture
Laboratory portion of PHYS 205. Calculus-based introduction to the principles of kinematics, dynamics, energy, momentum, rotational motion, gravitation and fluids. The Physics 205/210/215 sequence presents the general principles and analytical methods used in physics for physical science and engineering majors. (PHYS 205 and 205L, approved as C-ID PHYS 205) (CSU, UC-with unit limitation)
PHYS 210 PRINCIPLES OF PHYSICS: ELECTRICITY AND MAGNETISM
Formerly known as PHYS 4B (PHYS 210 and 210L, combined)
Units: 3
Prerequisite: Completion of PHYS 205, PHYS 205L and MATH 31 with grades of “C” or better
Corequisite: Concurrent enrollment in PHYS 210
Advisory: Eligibility for ENGL 11 strongly recommended
Hours: 54 lecture
Electrostatics, AC and DC circuits, magnetism, Maxwell’s Equations, electromagnetic waves and the electric and magnetic properties of matter. The 205-210-215 sequence presents general principles and analytical methods used in physics for physical science and engineering majors. (PHYS 210 and 210L, approved as C-ID PHYS 210) (CSU, UC-with unit limitation)

PHYS 210L PRINCIPLES OF PHYSICS LABORATORY: ELECTRICITY AND MAGNETISM
Formerly known as PHYS 4B (PHYS 210 and 210L, combined)
Units: 1
Corequisite: Concurrent enrollment in PHYS 210
Advisory: Eligibility for ENGL 11 strongly recommended
Hours: 54 laboratory
Laboratory portion of PHYS 210. Electrostatics, AC and DC circuits, magnetism, Maxwell’s Equations, electromagnetic waves and the electric and magnetic properties of matter. The 205-210-215 sequence presents general principles and analytical methods used in physics for physical science and engineering majors. (PHYS 210 and 210L, approved as C-ID PHYS 210) (CSU, UC-with unit limitation)

PHYS 210R PROBLEM SOLVING FOR PHYSICS 210
Formerly known as PHYS 4Y
Units: 1
Corequisite: Concurrent enrollment in PHYS 210
Hours: 18 lecture
Optional problem solving course to accompany PHYS 210. Includes electric forces and fields, electrical potential, capacitors and dielectrics, magnetism, electromagnetic waves and DC and AC circuits. (CSU, UC-with unit limitation)

PHYS 215 PRINCIPLES OF PHYSICS: HEAT, WAVES AND MODERN PHYSICS
Formerly known as PHYS 4C (PHYS 215 and 215L, combined)
Units: 3
Prerequisite: Completion of PHYS 205, PHYS 205L and MATH 31 with grades of “C” or better
Corequisite: Concurrent enrollment in PHYS 215L
Advisory: Eligibility for ENGL 11 strongly recommended
Hours: 54 lecture
Thermodynamics, kinetic theory of gases, waves, geometrical and physical optics, sound and modern physics. The 205-210-215 sequence presents general principles and analytical methods used in physics for physical science and engineering majors. (PHYS 215 and 215L, approved as C-ID PHYS 215) (CSU, UC-with unit limitation)
POLITICAL SCIENCE FOR TRANSFER

AA-T DEGREE

By completing this degree, students will learn about the operation of political authority at the local, national and international levels. Besides studying American political institutions, students will examine other governments, their civil societies, policy issues and decision making. In addition, appreciation will be gained for the growing role of international actors and importance of global issues. Helping to make sense of it all, students will learn scientific methods and theories.

The Associate in Arts in Political Science for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Political Science. Students completing the Associate in Arts in Political Science for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in Political Science for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

- completion of the major requirements with grades of C or better; and
- certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 1 American Government</td>
<td>3</td>
</tr>
<tr>
<td>POLS 2 Comparative Government</td>
<td>3</td>
</tr>
<tr>
<td>POLS 3 International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POLS 16 Introduction to Political Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 4 Russian and East European Political Systems</td>
<td>3</td>
</tr>
<tr>
<td>POLS 7 Politics of the Developing World—Third World Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 8 American Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>POLS 9 Politics of the Middle East</td>
<td>3</td>
</tr>
<tr>
<td>POLS 12 Terrorism</td>
<td>3</td>
</tr>
<tr>
<td>POLS 27 Women and Politics in a Global Society</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 18

POLITICAL SCIENCE COURSES »

POLS 1 AMERICAN GOVERNMENT

Units: 3
Hours: 54 lecture
Introduction to the principles and problems of the American political system on national, state and local levels. Includes discussion of the Constitution, political parties, executive, legislative and judicial branches of the government. Other topics include political behavior, voting patterns, interest group interaction, decision and conflict roles within the system. (CSU, UC)

POLS 2 COMPARATIVE GOVERNMENT

Units: 3
Hours: 54 lecture
Compares the major political systems of selected countries of the world, both Autocratic and Democratic. Particular emphasis is placed on advanced industrial democracies. Comparison includes the origins and development of governments, their constitutional principles, political ideologies, institutions, parties and social policies. (CSU, UC)

POLS 3 INTERNATIONAL RELATIONS

Units: 3
Hours: 54 lecture
Introduction to the political relations between governments and other global actors. Examination of theories and concepts that help to explain conflict and cooperation in a range of issue areas. (CSU, UC)

POLS 4 RUSSIAN AND EAST EUROPEAN POLITICAL SYSTEMS

Units: 3
Hours: 54 lecture
Comparison of Russian government and politics with that of other Eastern European states. Discussion of the past imperial and communist systems. Focus on social and political actors, decision-making institutions and their issues. (CSU, UC)

POLS 7 POLITICS OF THE DEVELOPING WORLD—THIRD WORLD POLITICS

Units: 3
Hours: 54 lecture
Study of revolution and political changes of selected countries in the Developing World/Global South focusing on historical experiences of European and American imperialism and colonialism. Major emphasis on popular movements of self-determination and conflicts between traditional indigenous values and non-traditional Western ideology. Contemporary case studies include Latin America, Africa and Asia. (CSU, UC)

POLS 8 AMERICAN FOREIGN POLICY

Units: 3
Hours: 54 lecture
Overview of American diplomatic history and the politics of foreign policy formation and implementation. Survey of contemporary issues confronting the U.S. (CSU, UC)
POLS 9 POLITICS OF THE MIDDLE EAST  
*Units: 3*
*Hours: 54 lecture*
An introduction to the politics and political systems of the Middle East. Focuses on the influence of colonialism, nationalism and Islam on forms of government, social turmoil and international conflicts. (CSU, UC)

POLS 12 TERRORISM  
*Units: 3*
*Hours: 54 lecture*
Overview of terrorism, including history, motives and political impact. Implications of counterterrorism policies. (CSU, UC)

POLS 16 INTRODUCTION TO POLITICAL THEORY  
*Units: 3*
*Hours: 54 lecture*
Survey of ideologies relevant to contemporary government and politics. Focus on understanding many different sets of ideas motivating and legitimating political processes. Deliberate examination of values underlying arguments and institutions, permitting a critical examination of key theories and concepts. (CSU, UC)

POLS 27 WOMEN AND POLITICS IN A GLOBAL SOCIETY  
*Units: 3*
*Hours: 54 lecture*
Exploration of past and current influences on the political and legal status of women as well as women’s participation in the political process throughout the world. Includes political theory and strategy as it relates to women. (CSU, UC)

POLS 28 INDEPENDENT STUDY  
*Units: 1-3*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

POLS 300 SELECTED TOPICS IN POLITICAL SCIENCE  
*Units: 0.5-4*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

PSYCHOLOGY FOR TRANSFER  
**AA-T DEGREE**
Psychology is defined as the scientific study of behavior. The degree program allows students to utilize research methods; evaluate the credibility of research, theories and applications; understand the core fields, paradigms and theories; apply psychological concepts, theoretical perspectives, empirical findings and historical trends to questions and issues in personal experience and contemporary society; and understand the ethical standards in academic and applied psychology.

The Associate in Arts in Psychology for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor’s degree in Psychology. Students completing the Associate in Arts in Psychology for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor’s degree.

To earn the Associate in Arts in Psychology for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

- completion of the major requirements with grades of C or better; and
- certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.
## REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100 General Principles of Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 105 Experimental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 142 Introduction to Psychological Statistics OR</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 13 Elementary Statistics</td>
<td></td>
</tr>
</tbody>
</table>

## PLUS 4 ADDITIONAL UNITS FROM THE FOLLOWING:

- BIOL 11 Concepts of Biology: 4 units
- BIOL 56 Biology: A Human Perspective AND BIOL 56L Biology: A Human Perspective (Laboratory): 4 units
- PSYC 140 Introduction to Biopsychology AND PSYC 140L Biopsychology Laboratory: 4 units

## PLUS 3 ADDITIONAL UNITS FROM THE FOLLOWING:

- ENGL 18 Critical Thinking and Writing about Literature: 3 units
- PSYC 103 Social Psychology: 3 units
- PSYC 104 Developmental Psychology: 3 units
- SOC 1 Introduction to Sociology: 3 units

## PLUS 3 ADDITIONAL UNITS FROM THE FOLLOWING OR ANY UNUSED COURSE FROM THE PRECEDING AREA:

- PSYC 107 Abnormal Psychology: 3 units
- PSYC 127 Psychology of Women: 3 units
- PSYC 150 Alcohol, Drugs and Society: 3 units

**TOTAL UNITS REQUIRED: 19-20**

## PSYCHOLOGY COURSES

### PSYC 100 GENERAL PRINCIPLES OF PSYCHOLOGY

**Units: 3**

**Hours: 54 lecture**

Introduction to the general principles of psychology. Topics include: biopsychology, sensation and perception, consciousness, learning, memory, cognition (thinking and intelligence), motivation, personality, social psychology, developmental psychology, abnormal psychology, research methods, ethics and the impact of diversity on psychological research, theory and application. Selected other topics may include emotion, or stress and health. Required for psychology majors. (C-ID PSY 110) (CSU, UC)

### PSYC 103 SOCIAL PSYCHOLOGY

Formerly known as PSYC 3

**Units: 3**

**Hours: 54 lecture**

Study of human interaction with emphasis on the individual within a social context. Topics include development of the self, social perception, interpersonal attraction, prejudice and discrimination, attitude change, moral development, altruism, aggression, social influence, power and leadership and interaction in groups are explored. (CSU, UC)

## PSYCHOLOGY

### A.A. OR A.S. DEGREE

The Psychology major provides preparation for upper-division coursework in Psychology at a four-year university. The degree program allows students to develop an understanding of the biological, cognitive and social aspects of human behavior as well as the methodological and experimental practices in the field. Students should choose the emphasis or track appropriate to the transfer institution or area of interest. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 100 General Principles of Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 105 Experimental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 142 Introduction to Psychological Statistics OR</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 13 Elementary Statistics</td>
<td></td>
</tr>
</tbody>
</table>

### PLUS 9 ADDITIONAL UNITS FROM THE FOLLOWING:

- ANTH 1 Physical Anthropology: 3 units
- ANTH 2 Cultural Anthropology: 3 units
- BIOL 1 General Biology OR
- BIOL 6 Human Physiology OR

### PLUS 4 ADDITIONAL UNITS FROM THE FOLLOWING:

- BIOL 10 Introduction to Biology OR
- BIOL 11 Concepts of Biology OR
- BIOL 56 Biology: A Human Perspective: 3-5 units
- PSYC 103 Social Psychology: 3 units
- PSYC 104 Developmental Psychology: 3 units
- PSYC 107 Abnormal Psychology: 3 units
- PSYC 140 Introduction to Biopsychology: 3 units
- PSYC 140L Biopsychology Laboratory: 1 unit
- PSYC 106 Psychology of Adjustment OR
- PSYC 127 Psychology of Women OR
- PSYC 130 Human Sexuality OR
- PSYC 160 Psychology and Film OR
- PSYC 170 Environmental Psychology: 3 units

**TOTAL UNITS REQUIRED: 18-19**

### PSYC 28 INDEPENDENT STUDY

**Units: 1-3**

Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)
PSYC 104 DEVELOPMENTAL PSYCHOLOGY
Formerly known as PSYC 4
Units: 3
Advisory: Completion of PSYC 100 with grade of “C” or better recommended
Hours: 54 lecture
An overview of development from conception to adolescence. Includes socioemotional, language and cognitive development, nature versus nurture, attachment, child abuse, gender role development and family structures. Examines psychological theories that apply to children and adolescents. A multicultural and multiethnic approach is stressed and the differences in child parent interaction are explored in these contexts. (CSU, UC)

PSYC 105 EXPERIMENTAL PSYCHOLOGY
Formerly known as PSYC 5
Units: 3
Prerequisite: Completion of PSYC 100; completion of or concurrent enrollment in PSYC 142 OR completion of MATH 13; grades of “C” or better required (it is recommended that students complete or concurrently enroll in PSYC 142)
Hours: 90 (36 lecture, 54 laboratory)
Introduction to research methodology, experimental design and hypothesis testing in the behavioral sciences. Includes the execution, evaluation and reporting of individual research projects. (CSU, UC)

PSYC 106 PSYCHOLOGY OF ADJUSTMENT
Formerly known as PSYC 6
Units: 3
Hours: 54 lecture
Basic theories of personal and social adjustment. Use of psychological principles and methods in adapting to the challenges of life. Topics include self image and self esteem, interpersonal relations, stress management, mental health and illness and approaches to personal growth. (CSU, UC)

PSYC 107 ABNORMAL PSYCHOLOGY
Formerly known as PSYC 7
Units: 3
Advisory: Completion of PSYC 100 with grade of “C” or better; Eligibility for ENGL 1A and ENGL 11
Hours: 54 lecture
Introduction to descriptive psychopathology: the origin, nature and treatment of psychological and behavioral disorders, including discussion of relevant ethical and diagnostic issues. Major topics include research methods, schizophrenia, anxiety-related disorders, mood disorders, personality disorders, eating disorders, substance-related disorders, sexual disorders and conflicting “models of madness.” (C–ID PSY 120) (CSU, UC)

PSYC 108 PSYCHOLOGY OF DEATH AND DYING
Formerly known as PSYC 8
Units: 3
Hours: 54 lecture
An investigation of beliefs, attitudes and behaviors associated with death, dying and bereavement. Terminal illness, suicide, euthanasia, last rites, legal aspects, death anxiety, cross-cultural beliefs and various philosophical views on the phenomenon of death are explored. (CSU, UC)

PSYC 110 PSYCHOLOGY OF MARRIAGE AND FAMILY
Formerly known as PSYC 10
Also known as HDEV 21
Units: 3
Hours: 54 lecture
Study of the meaning and functions of intimacy, marriage and family. Consideration given to the nature of commitments, sexuality, alternative relationships, communication, conflict resolution, economics, parenting, crises and marital separation. Recommended for majors in Human Development and Family and for those in human service careers. (CSU, UC)

PSYC 115 THINKING AND PROBLEM SOLVING
Formerly known as PSYC 15
Units: 3
Hours: 54 lecture
Research-based analysis of the psychology of everyday thinking. Major topics include problem solving, decision making, expertise, learning, memory and heuristics and biases. (CSU, UC)

PSYC 127 PSYCHOLOGY OF WOMEN
Formerly known as PSYC 27
Units: 3
Hours: 54 lecture
Study of the psychological effects of society upon women including biology, culture, social processes and personality. Emphasis will be placed on what it means to grow-up female in different contexts with particular emphasis on the effects of culture, class and ethnicity. (CSU, UC)

PSYC 130 HUMAN SEXUALITY
Formerly known as PSYC 30
Units: 3
Hours: 54 lecture
Overview of human sexuality from birth through adulthood: Covers major topics such as gender, sexual anatomy, sexually-transmitted infections, sexual response and disorders, sexual orientation, sexual coercion and commercial sex. (CSU, UC)
PSYC 140 INTRODUCTION TO BIOPSYCHOLOGY
Formerly known as PSYC 40
Units: 3
Prerequisite: Completion of PSYC 100 with grade of “C” or better
Advisory: Eligibility for ENGL 1A or ESL 40W
Hours: 54 lecture
An introduction to biopsychology focusing on the relationship between the nervous system and behavior. Emphasis on physiological, biochemical and neuroanatomical foundations of behavior and mental processes. Topics include the central nervous system function and its relation to psychoactive drug effects, sensory/perceptual processes, sleep and dreaming, learning phenomena, memory mechanisms, human communication disorders and abnormal behavior. (C-ID PSY 150) (CSU, UC)

PSYC 140L BIOPSYCHOLOGY LABORATORY
Formerly known as PSYC 40L
Units: 1
Corequisite: Completion with grade of “C” or better or concurrent enrollment in PSYC 140
Hours: 54 laboratory
Study of methods and techniques used to investigate sensation, perception, psychophysics and biological psychology. Topics include the organization of the brain, anatomy and physiology of the neuron, methods and an examination of sensory systems. (CSU, UC)

PSYC 142 INTRODUCTION TO PSYCHOLOGICAL STATISTICS
Formerly known as PSYC 42
Units: 3
Prerequisite: Completion of MATH D with grade of “C” or better or equivalent
Hours: 54 lecture
Statistical procedures used for experimental analysis in the social and behavioral sciences. Descriptive and correlational statistics, parametric and nonparametric inference tests and current controversies in hypothesis testing. (CSU, UC-with unit limitation)

PSYC 150 ALCOHOL, DRUGS AND SOCIETY
Formerly known as PSYC 50
Units: 3
Hours: 54 lecture
The use, misuse and abuse of all major families of psychoactive drugs, including opiates, stimulants, tobacco, marijuana, psychedelics, alcohol and sedative-hypnotics. Topics covered include cross-cultural usage, theories of addiction, government regulation and mechanisms of drug action. (CSU)

PSYC 160 PSYCHOLOGY AND FILM
Formerly known as PSYC 60
Units: 3
Hours: 54 lecture
Analysis of a selection of contemporary films that have played a critical role in shaping and reflecting cultural assumptions and fears. Emphasis on abnormal mental states and processes, social psychology, substance abuse and ethics. Viewing of films, reading from psychology and psycholinguistics and discussion included. Films will vary with each offering. (CSU, UC)

PSYC 170 ENVIRONMENTAL PSYCHOLOGY
Formerly known as PSYC 70
Units: 3
Hours: 54 lecture
Exploration of psychological research of how behavior impacts the natural environment and how the natural environment impacts behavior. Emphasis on ways in which psychological theory can be applied to formulate solutions. (CSU, UC)

PSYC 300 SELECTED TOPICS IN PSYCHOLOGY
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

PSYC 400 SELECTED TOPICS IN PSYCHOLOGY
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

REAL ESTATE
(See Business)
RECREATION MANAGEMENT

BUSINESS, APPLIED ACADEMICS AND PHYSICAL EDUCATION

DEAN: Sonja Lolland
ASSOCIATE DEAN: Darlene Jackson
DIVISION OFFICE: B 3
LIAISON COUNSELORS: C. Epting-Davis, N. Martinis

Recreation Management is designed to explore the skills needed to manage programs and events in a variety of recreational settings that include city parks and recreation programs, state and national parklands, hotels, playgrounds, forests, beaches, health clubs, tourism destinations and non-profit community centers. Career fields in recreation include public service, private recreation, outdoor recreation and leadership positions.

RECREATION MANAGEMENT	A.A. OR A.S. DEGREE

The Recreation Management program provides students an opportunity to learn how to motivate others to improve their lives through the constructive use of recreation. Successful completion of the Recreation Management associate degree prepares students for transfer to four-year universities. The curriculum has been designed to meet lower-division major requirements at most transfer institutions in Recreation, Recreation Administration and Resort and Lodging Management. Career opportunities include positions at recreation centers, corporate wellness programs, hotels, resorts and park and recreation programs. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Interssegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES	UNITS
RECM 10 Foundations of Recreation, Parks and Tourism Management .......................... 3
RECM 20 Program Planning and Event Management .......... 3
RECM 30 Leadership in Recreation, Parks and Tourism Management .......................... 3
RECM 40 Leisure Aspects of the Hospitality Industry .......................... 3

PLUS 9 ADDITIONAL UNITS FROM:
BIOL 5 Human Anatomy OR
BIOL 7A Human Anatomy I AND
BIOL 7B Human Anatomy II ........................................ 4-5
BIOL 6 Human Physiology ........................................... 5
BIOL 11 Concepts of Biology ..................................... 4
BUS 1 Financial Accounting I ................................... 3
BUS 2 Financial Accounting II .................................. 3
BUS 3 Managerial Accounting ................................... 3
BUS 20 Introduction to Business ................................. 3
BUS 48 Business Law ............................................. 3
BUS 140 Small Business Management ......................... 3
CIS 50 Applying Computer Software OR
CSCI 10 Introduction to Computing .............................. 3
COMM 10 Survey of Communication Studies .................. 3
ECON 1A Fundamentals of Economics .......................... 3
ECON 1B Fundamentals of Economics .......................... 3
ESCI 1 Physical Geology AND
ESCI 1L Physical Geology Laboratory ........................... 4
GEOG 1 Physical Geography ....................................... 3
PSYC 100 Introduction to Psychology ............................ 3
RECM 95 Internship in Recreation, Parks and Tourism Management ..................................... 1-4
SOC 1 Introduction to Sociology ................................... 3

TOTAL UNITS REQUIRED: 21

RECREATION SPECIALIST CERTIFICATE OF ACHIEVEMENT

This certificate program provides an enhanced understanding of the basic service industry skills necessary for successful employment in the recreation, parks, tourism and hospitality industry. This program is designed to meet the needs of students interested in seeking entry-level employment in a wide range of positions within the industry. Career opportunities include: recreation attendant, program coordinator, event planner, recreation program leader, pool manager, sports official (umpire and referee), ski resort worker, camp counselor, theme park attendant, tour guide, golf course employee and other related occupations. A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

REQUIRED COURSES	UNITS
HED 1 Standard First Aid/Community CPR ................................ 3
RECM 10 Foundations of Recreation, Parks and Tourism Management ................................... 3
RECM 20 Program Planning and Event Management ........................................ 3
RECM 30 Leadership in Recreation, Parks and Tourism Management ................................... 3
RECM 40 Leisure Aspects of the Hospitality Industry ........................................ 3
RECM 95 Internship in Recreation, Parks and Tourism Management ................................... 1

PLUS 3 ADDITIONAL UNITS FROM:
BUS 85 Introduction to Oral Communication ........................ 3
COMM 3 Group Communication ..................................... 3
COMM 7 Intercultural Communication ............................... 3
COMM 8 Interpersonal Communication ............................... 3
PLUS 3 ADDITIONAL UNITS FROM:
- BUS 20 Introduction to Business .................. 3
- BUS 64 Business Mathematics .................. 3
- BUS 120 Introduction to Marketing ............... 3

PLUS 2-4 ADDITIONAL UNITS FROM:
- PHED 42 Water Safety Instructor/Instructor Candidate Training 2
- RECM 50 Avalanche Safety I ....................... 4
- RECM 51 Avalanche Safety II ...................... 2
- RECM 60 Sports Turf Management ................ 3
- RECM 61 Landscape Irrigation .................... 3
- RECM 70 Backpacking ................................ 2
- RECM 71 Rock Climbing ......................... 2
- RECM 72 Wilderness Survival ..................... 2
TOTAL UNITS REQUIRED: 24-26

RECREATION MANAGEMENT COURSES

RECM 10 FOUNDATIONS OF RECREATION, PARKS AND TOURISM MANAGEMENT
Units: 3
Hours: 54 lecture
A foundational course focusing on the history, nature, scope and social aspects of leisure services in Western and international cultures. Includes philosophical and ethical issues as well as exploration of possible career paths. (CSU)

RECM 20 PROGRAM PLANNING AND EVENT MANAGEMENT
Units: 3
Hours: 54 lecture
Theory, delivery systems and processes of program planning, implementation and evaluation applicable to a variety of public and private agencies. Addresses programs that serve different age groups, interests and needs within a range of environments. Leadership for both professionals and volunteers presented in terms of their relationship to the human services field. (CSU)

RECM 30 LEADERSHIP IN RECREATION, PARKS AND TOURISM MANAGEMENT
Units: 3
Hours: 54 lecture
Leadership of recreation activities with emphasis on the social development and integration of individuals into group programs, mechanics of planning, techniques of presentation and a repertoir of social activities as tools of social recreation. (CSU)

RECM 40 LEISURE ASPECTS OF THE HOSPITALITY INDUSTRY
Units: 3
Hours: 54 lecture
Overview of structure and financial performances of the hospitality industry; food and lodging, resorts, tourism enterprises, attractions and related operations. Focus on orientation on customer service, cultural/economic trends and career opportunities. (CSU)

RECM 50 AVALANCHE SAFETY I
Formerly known as Forestry 38
Units: 4
Advisory: Students should have an intermediate level of proficiency at skiing or snowboarding and have backcountry access and climbing capability
Hours: 108 (54 lecture, 54 laboratory)
Designed to help winter enthusiasts assess avalanche hazard through field observation of weather, terrain and the mountain snow pack. Field sessions in stability evaluation, terrain analysis and route selection will be conducted to apply theory learned in the classroom. Principles of avalanche control and avalanche rescue will be taught. Necessary equipment: beacon; probe; shovel; snowshoes, snowboard, or freeheel skis. (CSU)

RECM 51 AVALANCHE SAFETY II
Formerly known as Forestry 39
Units: 2
Prerequisite: Completion of RECM 50 or equivalent
Advisory: Students should have an intermediate level of proficiency at skiing or snowboarding and have backcountry access and climbing capability
Hours: 54 (27 lecture, 27 laboratory)
Stability evaluation, route selection and decisions made in a field context relative to backcountry travel and avalanche safety. Necessary equipment: beacon; probe; shovel; snowshoes, snowboard, or freeheel skis. (CSU)

RECM 60 SPORTS TURF MANAGEMENT
Formerly known as HORT 51
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Introduction to commercial management and maintenance practices of recreational and sports turfgrass, including turf species and varieties, growth characteristics, irrigation, fertilization, pest control and equipment. Emphasis on large scale turf facilities including parks, golf courses and sports fields. (CSU)
RECM 61 LANDSCAPE IRRIGATION
Formerly known as HORT 39
Units: 3
Hours: 90 (36 lecture, 54 laboratory)
Introduction to landscape irrigation. Design, installation and maintenance of efficient landscape irrigation systems. Classroom lecture and “hands-on” field instruction in water supply, basic hydraulics, component identification and terminology, system layout, pipe sizing: types of heads, valves, controllers and practices related to appropriate horticultural applications. (CSU)

RECM 70 BACKPACKING
Formerly known as PHED 76
Units: 2
Hours: 54 (18 lecture, 36 activity)
Basics of minimum impact camping and wilderness safety with maximum personal comfort and enjoyment. Emphasizes “leave-no-trace” camping skills, wilderness navigation, shelter use and site selection, group dynamics and leadership. Two field trips required. (CSU, UC-with unit limitation)

RECM 71 ROCK CLIMBING
Formerly known as PHED 77
Units: 2
Hours: 54 (18 lecture, 36 activity)
Covers various aspects of climbing including: how to use rope systems and other climbing gear safely, how to tie and use various knots, belaying techniques, call signals, balance, climbing techniques, footwork, flexibility and rappelling. Field trips required. (CSU, UC-with unit limitation)

RECM 72 WILDERNESS SURVIVAL
Formerly known as PHED 78
Units: 2
Advisory: Physicians approval recommended for participation
Hours: 54 (27 lecture, 27 laboratory)
Designed to enhance the student’s understanding of the outdoors and the natural world. Interactive discussions and experiments involving shelter, water, fire, food, tracking, hazards and other basic survival skills. Field study required. (CSU)

RECM 95 INTERNSHIP IN RECREATION, PARKS AND TOURISM MANAGEMENT
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU–with unit limitation)

SILL DEVELOPMENT

LIBRARY/LEARNING RESOURCE CENTER
DEAN: Brian Haley
DIVISION OFFICE: LRC 311

Skill Development classes are offered through the Learning Resource Center. SKDV 1 is a one-unit course which is part of the tutor training qualifications. SKDV 801 is a non-credit course that provides tutoring or learning assistance to students in all disciplines. All students who use tutoring or learning assistance will enroll in SKDV 801 Supervised Tutorials.

SKILL DEVELOPMENT COURSES »

SKDV 1 TECHNIQUES OF TUTORING
Formerly known as SKDV 21A
Units: 1
Advisory: Eligibility for ENGL 1A and ENGL 11
Hours: 18 lecture
Introduction to learning theories, styles and techniques as related to tutoring. Fundamentals of communication and motivation for effective tutoring. Strategies for planning tutoring sessions. Tutoring techniques and resources for addressing unique student needs. (CSU)

SKDV 10 HOW TO BE A SUCCESSFUL ONLINE STUDENT
Units: 1
Hours: 18 lecture
Designed to develop the skills for success in the online classroom. Includes defining online learning and uncovering its myths; online readiness; netiquette; learning styles; time management, study habits, goal setting and motivational techniques; the importance of fostering online community; use of emerging technologies including wikis, blogs and VoiceThreads; student services and resources. Exploration of the use of the campus course management system, completion of basic computer tasks and effective use of Internet tools. (CSU)

SKDV 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)
SKDV 801 SUPERVISED TUTORING

Units: 0
Designed to assist students who desire supplemental tutoring or learning assistance in basic skills or academic college-level subjects. Tutorials or learning assistance, or both, are recommended by counselors or instructors for the purpose of developing or augmenting learning by students. Tutorial or learning assistance content is based on student need. Use of tutorial or learning assistance services enrolls students in this non-fee, non-credit course and does not substitute for any other course or coursework. May be repeated. (noncredit)

SOCIAL SCIENCE

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: S. McDonald
LIAISON COUNSELORS: N. Martinis, Rebecca Ortega

The Social Science curriculum is a mixture of survey courses and interdisciplinary studies. The courses vary in their subject matter. Students who major in Social Science generally do so in order to prepare themselves for graduate training in a variety of fields.

TRANSFER MAJOR REQUIREMENTS in Social Science are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Positions for which four-year graduates in Social Science are qualified include: civil service entry level management, entry into teacher training, entry into law school, entry into professional social work training and entry-level work in social service agencies.

SOCIAL AND BEHAVIORAL SCIENCES
A.A. OR A.S. DEGREE
(FORMERLY SOCIAL SCIENCE)
The Social and Behavioral Sciences degree provides students with a broad perspective on human behavior. Successful completion of the curriculum in Social and Behavioral Sciences offers students a breadth of knowledge that could be focused into single discipline degrees as well as applied to an interdisciplinary degree. By drawing from a select group of disciplines, students will study about themselves and others as members of a larger society. Topics and discussions strengthen students’ ability to gather and apply information, evaluate how societies and social subgroups operate, gain knowledge to apply to life and think critically. The courses emphasize a span of social and behavioral disciplines. Students should choose the emphasis appropriate to their transfer institution or areas of interest. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Interssegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

REQUIRED COURSES
9 UNITS FROM THE FOLLOWING BEHAVIORAL SCIENCES:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 2 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 4 Native Peoples of North America</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 5 Introduction to Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 7 Native Peoples of California</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 9 Magic, Witchcraft, Ritual, Myth and Religion</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 27 Anthropology of Sex, Gender and Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>COMM 3 Group Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 5 Communication Experience</td>
<td>3</td>
</tr>
<tr>
<td>COMM 7 Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 8 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 15 Mass Media and Society</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 1 Human Development</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 4 Child, Family and Community</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 9 Child and Adolescent Development</td>
<td>3</td>
</tr>
<tr>
<td>HDEV 25 Culture and Diversity in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>HUM 3 Introduction to Asian Humanities</td>
<td>3</td>
</tr>
<tr>
<td>NUTF 10 Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 100 Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 103 Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 104 Developmental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 105 Experimental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 106 Psychology of Adjustment</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 108 Psychology of Death and Dying</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 110 Psychology of Marriage and Family</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 127 Psychology of Women</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 130 Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 150 Alcohol, Drugs and Society</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 160 Psychology and Film</td>
<td>3</td>
</tr>
<tr>
<td>SSCI 10 Introduction to Ethnic Studies</td>
<td>3</td>
</tr>
<tr>
<td>SSCI 15 Dialogues in American Culture</td>
<td>3</td>
</tr>
<tr>
<td>SOC 1 Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 2 Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 3 Race, Ethnicity and Inequality</td>
<td>3</td>
</tr>
<tr>
<td>SOC 4 The Family (also HDEV 22)</td>
<td>3</td>
</tr>
<tr>
<td>SOC 5 Sociology of Women’s Health</td>
<td>3</td>
</tr>
<tr>
<td>SOC 24 Introduction to Sociology of Sport</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 9 UNITS FROM THE FOLLOWING SOCIAL SCIENCES:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMJ 50 Introduction to Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 198 Food, Society and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 215 Introduction to Agricultural Business and Economics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 49 Law and Society</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1 Fundamentals of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1B Fundamentals of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ESS 1 The Environment and the Human Impact</td>
<td>3</td>
</tr>
</tbody>
</table>
SOCIAL SCIENCE COURSES

SSCI 10 INTRODUCTION TO ETHNIC STUDIES
Units: 3
Hours: 54 lecture
Introduction to the diverse cultural, social, economic, historical and political issues relating to the past and present life circumstances of Asian Americans, African Americans, Hispanic Americans, Native Americans and other “old” and “new” immigrants. Topics also include majority-minority relations, implications of racism and intergroup relations. (CSU, UC)

SSCI 13 DIALOGUES IN AMERICAN CULTURE
Units: 3
Hours: 54 lecture
Introduces students to a variety of contemporary topics through guest lectures and discussions. Explores the rich diversity of people, cultures and opportunities within America, emphasizing theoretical and practical understanding of diversity. Employing a wide range of interdisciplinary social and behavioral science perspectives. The lecture-discussions and films explore topics including ethnicity, aging, (dis)ability, social class, gender, sexual orientation, religion, race, identity, politics and science. (CSU, UC)

SSCI 20 AFRICAN AMERICAN CULTURE AND EXPERIENCE
Units: 3
Hours: 54 lecture
Introduction to the study of African American culture and experience in the United States. Places the African American experience at the center of the discourse and incorporates methodology from other disciplines that serve as a foundation for integrative and comparative perspectives. A critical examination of the African American experience and its antecedents. (CSU, UC)

SSCI 25 MEXICAN AMERICAN/LATINO CULTURE AND IMAGE
Units: 3
Hours: 54 lecture
Introduction to Mexican American/Chicano/Latino culture using a comparative and interdisciplinary approach with focus on representation in media and popular culture. Course designed to provide an awareness of social, political, economic and cultural aspects of Mexican American, Chicano and Latino life in United States inclusive of social movements and protests. Field trips may be required. (CSU, UC)

SSCI 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)
SSCI 30 IMMIGRATION, COMMUNITY AND CULTURE: THE ASIAN AMERICAN EXPERIENCE
Units: 3
Hours: 54 lecture
Introduction to Asian American cultures in the United States from mid-1800’s to present using a comparative and interdisciplinary approach. Examination of the development and evolution of Chinese, Filipino, Asian Indians, Japanese, Korean and Vietnamese communities within the context of social, historical, economic and political forces within the United States. Topics include immigration and settlement issues, social movements, assimilation, media images, stereotypes and discrimination, community building, art and popular culture. Field trips may be required. (CSU, UC)

SSCI 30G IMMIGRANTS AND REFUGEES IN AMERICA: THE EUROPEAN EXPERIENCE
Units: 3
Hours: 54 lecture
Survey of immigration, acculturation, assimilation and cultures of peoples from northern, western, southern, eastern and central Europe. Includes a comparative overview of pre-immigration, immigration and post-immigration experiences of the people from these groups to the United States. (CSU, UC)

SSCI 40 AMERICAN LEGAL SYSTEM AND EQUALITY: ETHNIC/CULTURAL PERSPECTIVES
Units: 3
Hours: 54 lecture
Explores constitutional interpretations of equality and liberty, situated within the context of economic interests and developments. Using particular legal case studies, examines these concepts from multi-ethnic and multi-racial perspectives, as well as the impact on various minority groups. Intended for students who wish to major in fields of Ethnic Studies, Political Science, Sociology or Law. (CSU, UC)

SSCI 50 ETHNIC IMAGES IN FILM
Units: 3
Hours: 54 lecture
Interdisciplinary approach to study ethnic culture, race, socio-economic class and gender in the United States through the medium of film. Examines film content for representation and accuracy, the multiple dimensions of media stereotypes and the authenticity of diverse ethnic experiences with particular emphasis on gender, race and class. Note: not a course in film making or film criticism. (CSU, UC)

SSCI 300 SELECTED TOPICS IN SOCIAL SCIENCE
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC with unit limitation)

SSCI 300F ITALIAN LIFE, CULTURE AND POLITICS
Units: 3
Hours: 54 lecture
Introduction to Italian life and culture through the exploration and examination of history, politics, economics, art, literature and traditions. Special attention will be given to the Medici banking system, the Italian City Republics as well as the period known as the Italian Renaissance. (CSU, UC)

SSCI 300G OAXACAN LIFE AND CULTURE
Units: 3
Hours: 54 lecture
Introduction to Oaxacan life and culture through exploration of its history, culture, politics, ecology and challenges. Emphasis includes the relationship between Southern Mexico and U.S. cultures. Involves field trips to local artisan villages, ecological preserves, museums, archeological sites and guest lectures. (CSU, UC)

SOCILOGY

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: J. Kattman, M. Seely
LIAISON COUNSELORS: M. Braga, Rebecca Ortega

Sociology is a disciplined quest for the understanding of human behavior—particularly in urban, industrial society. Through a systematic analysis of society, its groups, institutions and processes, sociologists hope to better understand and predict human behavior. The introductory course provides a foundation in sociological concepts, with the goal of having students acquire the perspective in sociology and the ability to see their personal position in a societal context. Other sociology courses focus on social problems, race and ethnic relations and the family.

TRANSFER REQUIREMENTS in Sociology are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Positions for which four-year graduates in Sociology are qualified include, but are not confined to, research, social work, personnel and corrections/probation work.

SOCILOGY FOR TRANSFER
AA-T DEGREE
Sociology is a disciplined quest for the understanding of human behavior, particularly in urban, industrial society. Through a systematic analysis of society, its groups, institutions and processes, sociologists hope to better understand and predict human behavior. The intro-
ductory course provides a foundation in sociological concepts, with the goal of having students acquire the perspective in sociology and the ability to see their personal position in a societal context. Other sociology courses focus on social problems, race and ethnic relations and the family.

The Associate in Arts in Sociology for Transfer degree (AA-T) prepares students to transfer into the CSU system to complete a bachelor's degree in Sociology. Students completing the Associate in Arts in Sociology for Transfer degree and meeting the CSU minimum eligibility requirements are guaranteed admission to the CSU system, but not to a particular campus or major. Upon transfer, students will be required to complete no more than 60 units to earn a bachelor's degree.

To earn the Associate in Arts in Sociology for Transfer degree, students must complete 60 CSU-transferable semester units with a grade point average of at least 2.0, including:

• completion of the major requirements with grades of C or better; and
• certified completion of either the California State University General Education Breadth pattern (CSU GE—see pages 50-51), or the Intersegmental General Education Transfer Curriculum (IGETC—see pages 52-53).

It is highly recommended that, prior to transferring, students complete courses that satisfy the CSU United States History, Constitution and American Ideals graduation requirement. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 1 Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 2 Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 15 Introduction to Statistics in Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 6 UNITS FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 3 Race, Ethnicity and Inequality</td>
<td>3</td>
</tr>
<tr>
<td>SOC 20 Introduction to Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>SOC 27 Sociology of Gender</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 3 UNITS FROM THE FOLLOWING OR UNUSED COURSE FROM THE PRECEDING AREA:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 4 The Family (also HDEV 22)</td>
<td>3</td>
</tr>
<tr>
<td>SOC 5 Sociology of Women's Health</td>
<td>3</td>
</tr>
<tr>
<td>SOC 10 Feminism and Social Action (also WMST 4)</td>
<td>3</td>
</tr>
<tr>
<td>SOC 24 Introduction to Sociology of Sport</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 18**

## Sociology Courses

### SOC 1 Introduction to Sociology

**Units:** 3  
**Hours:** 54 lecture  
Sociological analysis of social interaction and behavior, including concepts such as culture, socialization, social organization and disorganization, collective behavior, deviance, conformity and social stratification. (C-ID SOCI 110) (CSU, UC)

### SOC 2 Social Problems

**Units:** 3  
**Advisory:** Completion of SOC 1 recommended  
**Hours:** 54 lecture  
A sociological approach to the study of major social problems. Emphasizes the critical approach to the questions of social problems. A seminar emphasizing the social construction of social problems. (C-ID SOCI 115) (CSU, UC)

### SOC 3 Race, Ethnicity and Inequality

**Units:** 3  
**Advisory:** Completion of or concurrent enrollment in SOC 1 recommended  
**Hours:** 54 lecture  
Examines the socio-political impact of race relations in the United States and worldwide. Topics include majority-minority relations, discrimination, prejudice, social stratification, inequality, racism, sexism, ageism, homophobia and related subjects. (C-ID SOCI 150) (CSU, UC)

### SOC 4 The Family

**Also known as HDEV 22**  
**Units:** 3  
**Advisory:** Completion of SOC 1 recommended  
**Hours:** 54 lecture  
A sociological approach to the analysis of the family as a social institution. Of particular interest will be the changing structure of family, gender roles, dating, marriage, intimacy, relationships and parenting. (C-ID SOCI 130) (CSU, UC)

### SOC 5 Sociology of Women's Health

**Units:** 3  
**Advisory:** Completion of ENGL A or equivalent with grade of “C” or better  
**Hours:** 54 lecture  
Provides a sociological analysis of health issues that concern women throughout their life course. The impact of physiology, psychology, culture, society and politics upon women’s well-being will be addressed using the feminist perspective. (CSU, UC)

### SOC 10 Feminism and Social Action

**Also known as WMST 4**  
**Units:** 3  
**Advisory:** Completion of ENGL A or equivalent with a grade of “C” or better  
**Hours:** 54 lecture  
Examines sociological underpinnings of social action and explores unique contributions of feminism in challenging traditional gender scripts. Provides an overview of the ways in which women engage in deliberative social action to change the conditions of their lives and of their communities. Emphasizes sociological theory as applied to issues related to the institutions of family, health, religion, employment, sexual harassment, housing and interpersonal violence. (CSU, UC)
SOC 15 INTRODUCTION TO STATISTICS IN SOCIOLOGY
Units: 3
Prerequisite: Two years of high school algebra or MATH D with grade(s) of “C” or better, or placement by matriculation assessment process
Advisory: Completion of or concurrent enrollment in SOC 1
Hours: 54 lecture
Application of statistical methods to sociological data. Topics include: descriptive and inferential statistics including levels and types of measurement; measures of central tendency and dispersion; normal, t and chi-square distributions, probability and hypothesis testing, correlation and regression. Statistical software will be applied to sociology and/or other social science data. (C-ID SOCI 125) (CSU, UC)

SOC 20 INTRODUCTION TO RESEARCH METHODS
Units: 3
Prerequisite: Completion of SOC 1 and SOC 15 with grades of “C” or better
Hours: 72 (54 lecture, 18 laboratory)
Students examine fundamental elements of empirical research and the ways sociologists think critically. Includes attention to the nature of theory, hypotheses, variables and ethics of research. Application of qualitative and quantitative analytic tools including logic and research design, such as survey, observational, experimental, case study and comparative historical research. Computer applications are utilized to analyze data. (C-ID SOCI 120) (CSU, UC)

SOC 24 INTRODUCTION TO SOCIOLOGY OF SPORT
Units: 3
Advisory: Completion of or concurrent enrollment in SOC 1 recommended
Hours: 54 lecture
Introduction to the examination of sport in contemporary society using a sociological approach. Analyzes sport as a social institution and examines sport’s interaction with politics, economics, religion, gender, race, media and ethics. Focus on the impact of sport on participants, spectators and society as a whole. (CSU)

SOC 27 SOCIOLOGY OF GENDER
Units: 3
Hours: 54 lecture
A cross-cultural comparison of gender roles, gender identities and sexualities viewed from sociological perspectives. Examines the social construction of masculinity and femininity and the debates on sex and gender. Analyzes the impact of social, cultural and political factors on gender expectations and practices. (C-ID SOCI 140) (CSU, UC)

SOC 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

SOC 300 SELECTED TOPICS IN SOCIOLOGY
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)

SPANISH

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
FACULTY: S. Casler, C. Sabin
LIAISON COUNSELOR: D. Quadros

The active part that the United States is now taking in world affairs makes it desirable that a greater number of Americans than ever before have knowledge of foreign languages and cultures. A language background should be of intrinsic value. The acquisition of desired practical communication skills in the study of a modern foreign language is the primary objective. This can be accomplished by the oral approach, motivated by lectures and implemented by the language laboratory.

TRANSFER MAJOR REQUIREMENTS in Foreign Language are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements. Four-year graduates in Foreign Languages are qualified for positions in teaching, business, foreign service, law enforcement, nursing, secretarial and diplomatic services.
SPANISH COURSES »

SPAN 1 ELEMENTARY SPANISH—LEVEL I
Units: 4
Advisory: Eligibility for ENGL 1A
Hours: 72 lecture
First of two semesters of Elementary Spanish. Provides basic communication skills through listening, speaking, reading and writing by applying principles of phonetics (speech sounds), morphology (word formation) and syntax (word order) in the context of Spanish-speaking culture. Corresponds to two years of high school study. (CSU, UC)

SPAN 2 ELEMENTARY SPANISH—LEVEL II
Units: 4
Prerequisite: Completion of SPAN 1 or two years of high school Spanish with grade(s) of “C” or better
Hours: 72 lecture
Second of two semesters of Elementary Spanish. Provides further basic communication skills through listening, speaking, reading and writing by applying principles of phonetics (speech sounds), morphology (word formation) and syntax (word order) in the context of Spanish-speaking culture. (CSU, UC)

SPAN 3 INTERMEDIATE SPANISH—LEVEL I
Units: 4
Prerequisite: Completion of SPAN 2 or three years of high school Spanish with grade(s) of “C” or better
Hours: 72 lecture
First of two semesters of Intermediate Spanish. Provides intermediate level of communication skills through listening, speaking, reading and writing by applying principles of phonetics (speech sounds), morphology (word formation) and syntax (word order) in the context of Spanish-speaking culture. (C-ID SPAN 200) (CSU, UC)

SPAN 4 INTERMEDIATE SPANISH—LEVEL II
Units: 4
Prerequisite: Completion of SPAN 3 or four years of high school Spanish with grade(s) of “C” or better
Hours: 72 lecture
Second of two semesters of Intermediate Spanish. Provides upper intermediate level of communication skills through listening, speaking, reading and writing within a cultural background. Readings of literature (short story, poetry, drama, essay) and culturally relevant authentic materials (newspapers, magazines, films) as well as writing short compositions are emphasized in this course. (CSU, UC)

SPAN 15 ELEMENTARY CONVERSATIONAL SPANISH 1
Units: 3
Hours: 54 lecture
First of two semester sequence covering basic Spanish conversational skills. Emphasizes oral communication through introduction to vocabulary, cultural customs and elementary grammatical structures used in everyday Spanish. Elementary reading and writing skills also included. (CSU)

SPAN 16 ELEMENTARY CONVERSATIONAL SPANISH 2
Units: 3
Prerequisite: Completion of SPAN 15, SPAN 1, or two years of high school Spanish with grade(s) of “C” or better
Hours: 54 lecture
Second semester of Conversational Spanish. Develops increasingly complex language abilities through new vocabulary and more advanced grammatical structures. Emphasizing oral communication, students are introduced to vocabulary, cultural customs and elementary grammatical, reading and writing skills. (CSU)

SPAN 17 INTERMEDIATE CONVERSATIONAL SPANISH
Units: 3
Prerequisite: Completion of SPAN 16, SPAN 2, or three years of high school Spanish with grade(s) of “C” or better
Hours: 54 lecture
Intermediate Conversational Spanish. Develops increasingly complex language abilities through new vocabulary and more advanced grammatical structures. Emphasizes oral communication, grammatical, reading and writing skills at the intermediate level and further explores cultural customs. (CSU, UC)

SPAN 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

SPAN 300 SELECTED TOPICS IN SPANISH
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU, UC-with unit limitation)
The Welding Technology curriculum provides training in the field of commercial and industrial welding and fabrication. Students enrolled in Welding Technology courses will receive both the theoretical technical knowledge and the hands-on skills that will prepare them for a career in welding.

A.A. and A.S. degrees as well as certificates can be earned in the Welding Technology Program. The certificate program does not satisfy A.A. or A.S. degree requirements, but does qualify students for certificates in the chosen field of study.

**WELDING TECHNOLOGY**

**A.A. OR A.S. DEGREE**

(Formally Metals and Manufacturing Technology)

Successful completion of the degree pattern in Welding Technology prepares students for transfer to the California State University system in industrial-related degree programs. It also provides the broad background education necessary to compete successfully in commercial and industrial welding and related fabrication fields. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-45); California State University General Education Breadth pattern (see pages 50-51); or Intersegmental General Education Transfer Curriculum (IGETC) (see pages 52-53).

**REQUIRED COURSES:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 10 Exploring Metals/Introduction to Gas Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 20 Foundation of Welding Technology—Career Path</td>
<td>3</td>
</tr>
<tr>
<td>WELD 30 Shielded Metal Arc Welding of Structural Plate and Pipe</td>
<td>3</td>
</tr>
<tr>
<td>WELD 40 Wire Feed MIG Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 50 Gas Tungsten Arc Welding (TIG)</td>
<td>3</td>
</tr>
<tr>
<td>WELD 60 Welding Metallurgy</td>
<td>2</td>
</tr>
<tr>
<td>WELD 70 Principles of Fabrication</td>
<td>2</td>
</tr>
<tr>
<td>WELD 80 Structural Steel Welding Certification OR</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 5 ADDITIONAL UNITS FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 35 Welding Skill and Speed Development</td>
<td>2</td>
</tr>
<tr>
<td>WELD 95 Internship in Welding Technology</td>
<td>5-4</td>
</tr>
<tr>
<td>DES 1 Technical Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>DES 2 Technical Drafting II</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 23-23.5**

**WELDING CERTIFICATE OF ACHIEVEMENT**

Successful completion of the curriculum in Welding provides students with employable skills in commercial and industrial welding processes. Completion of the certificate requirements prepares students for State Certification tests. Testing and Certification is offered. A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

**REQUIRED CORE COURSES:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 20 Foundation of Welding Technology—Career Path</td>
<td>3</td>
</tr>
<tr>
<td>WELD 30 Shielded Metal Arc Welding of Structural Plate and Pipe</td>
<td>3</td>
</tr>
<tr>
<td>WELD 40 Wire Feed MIG Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 50 Gas Tungsten Arc Welding (TIG)</td>
<td>3</td>
</tr>
<tr>
<td>WELD 60 Welding Metallurgy</td>
<td>2</td>
</tr>
<tr>
<td>WELD 80 Structural Steel Welding Certification OR</td>
<td>3</td>
</tr>
<tr>
<td>WELD 82 Pipe Welding Certification</td>
<td>1-1.5</td>
</tr>
<tr>
<td>MATH A Elementary Algebra OR more advanced mathematics course</td>
<td>3-5</td>
</tr>
</tbody>
</table>

**PLUS 12 UNITS SELECTED FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 10 Exploring Metals/Introduction to Gas Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 28 Independent Study</td>
<td>3</td>
</tr>
<tr>
<td>WELD 95 Internship in Welding Technology</td>
<td>3-4</td>
</tr>
<tr>
<td>ART 22 Creative Design in Metal</td>
<td>3</td>
</tr>
<tr>
<td>DES 1 Technical Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>DES 2 Technical Drafting II</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 29-31.5**

**GAS METAL ARC WELDING SKILLS CERTIFICATE**

The Gas Metal Arc Welding Skills Certificate prepares students for a broad understanding of the wire feed processes of GMAW using solid wires on Carbon Steel and Aluminum with multiple types of metal transfer modes. In addition, Flux Core wire processes, both gas shielded and self shielded are studied in the earning of this certificate. A skills certificate is designed to provide career technical skill for the focused subject area; it is not equivalent to the Welding Certificate and does not replace Welder Certification which is solely skill performance based.

**REQUIRED COURSES:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 10 Exploring Metals/Introduction to Gas Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 20 Foundation of Welding Technology—Career Path</td>
<td>3</td>
</tr>
<tr>
<td>WELD 30 Shielded Metal Arc Welding of Structural Plate and Pipe</td>
<td>3</td>
</tr>
<tr>
<td>WELD 40 Wire Feed MIG Welding</td>
<td>2</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 10**
GAS TUNGSTEN ARC WELDING
SKILLS CERTIFICATE
The Gas Tungsten Arc Welding Skills Certificate prepares students for using complex emerging technological aspects of this welding process developed by welding equipment manufacturers since 2005. By exposure to welding a broad range of metals, with a concentration on sheet thicknesses, the student is earning the knowledge for the industry and artistic application of GTAW. A skills certificate is designed to provide career technical skill for the focused subject area; it is not equivalent to the Welding Certificate and does not replace Welder Certification which is solely skill performance based.

REQUIRED COURSES:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 10 Exploring Metals/Introduction to Gas Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 20 Foundation of Welding Technology—Career Path</td>
<td>3</td>
</tr>
<tr>
<td>WELD 35 Welding Skill and Speed Development</td>
<td>2</td>
</tr>
<tr>
<td>WELD 50 Gas Tungsten Arc Welding (TIG)</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL UNITS REQUIRED: 10</td>
<td></td>
</tr>
</tbody>
</table>

METAL FABRICATOR AND DESIGNER
SKILLS CERTIFICATE
The Metal Fabricator and Designer Skills Certificate provides students knowledge of the processes, manner and techniques of metalworking used in the welding industry or artistic metal expression applications. It can be a lead into employment with a typical metal fabrication organization and may parallel the manner of methods used by Ironworkers, Boilermakers and Millwrights; however, each of these specialty areas of metalwork encompasses their own system of apprenticeship which this skills certificate is not designed to replace. A skills certificate is designed to provide career technical skill for the focused subject area; it is not equivalent to the Welding Certificate and does not replace Welder Certification which is solely skill performance based.

REQUIRED COURSES:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 10 Exploring Metals/Introduction to Gas Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 20 Foundation of Welding Technology—Career Path</td>
<td>3</td>
</tr>
<tr>
<td>WELD 30 Shielded Metal Arc Welding of Structural Plate and Pipe</td>
<td>3</td>
</tr>
<tr>
<td>WELD 40 Wire Feed MIG Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 70 Principles of Fabrication</td>
<td>2</td>
</tr>
<tr>
<td>ART 22 Creative Design in Metal</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL UNITS REQUIRED: 15</td>
<td></td>
</tr>
</tbody>
</table>

SHIELDED METAL ARC WELDING
SKILLS CERTIFICATE
The Shielded Metal Arc Welding Skills Certificate prepares students for the type of work performed with this welding process. With a focus of Structural Steel Plate as well as Pipe Welding Carbon Steel applications, this certificate validates a knowledge base in this welding process. A skills certificate is designed to provide career technical skill for the focused subject area; it is not equivalent to the Welding Certificate and does not replace Welder Certification which is solely skill performance based.

REQUIRED COURSES:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELD 10 Exploring Metals/Introduction to Gas Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 20 Foundation of Welding Technology—Career Path</td>
<td>3</td>
</tr>
<tr>
<td>WELD 30 Shielded Metal Arc Welding of Structural Plate and Pipe</td>
<td>3</td>
</tr>
<tr>
<td>WELD 80 Structural Steel Welding Certification OR WELD 82 Pipe Welding Certification</td>
<td>1.5</td>
</tr>
<tr>
<td>TOTAL UNITS REQUIRED: 9-9.5</td>
<td></td>
</tr>
</tbody>
</table>

WELDING ENTREPRENEURSHIP
SKILLS CERTIFICATE
This skills certificate is designed to prepare students wanting to open their own welding or welding related business. Completion of this skills certificate provides students with basic skills in welding technology and small business management. A skills certificate is designed to provide career technical skill for the focused subject area; it is not equivalent to the Welding Certificate and does not replace Welder Certification which is solely skill performance based.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS B Accounting and Finance for the Small Business Owner</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>WELD 10 Exploring Metals/Introduction to Gas Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 20 Foundation of Welding Technology—Career Path</td>
<td>3</td>
</tr>
<tr>
<td>WELD 70 Principles of Fabrication</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL UNITS REQUIRED: 13</td>
<td></td>
</tr>
</tbody>
</table>

WELDING TECHNOLOGY COURSES

WELD 10 EXPLORING METALS/INTRODUCTION TO GAS WELDING
Units: 2
Hours: 72 (18 lecture, 54 laboratory)
History and development of joining metals, metalworking and welding methods. Modern welding and fabrication techniques. Proper and safe use of modern metal fabrication equipment and hands-on experience with Oxy-Acetylene (Gas) welding based on an assigned student project. (CSU)
WELD 15 INTRODUCTORY WELDING FOR METALWORKING
Units: 2
Advisory: Completion with grade of "C" or better or concurrent enrollment in WELD 10
Hours: 72 (18 lecture, 54 laboratory)
Focuses on the three common metal working processes of Stick, MIG and TIG welding, including correct setup and "how to" techniques. Plasma arc cutting and Oxy-fuel cutting processes also covered. Designed for both students interested in the metal art field as a companion to ART 22 and for students wishing to pursue a career in welding by continuing on to WELD 20. (CSU)

WELD 20 FOUNDATION OF WELDING TECHNOLOGY—CAREER PATH
Units: 3
Prerequisite: Completion of WELD 10 with grade of "C" or better
Advisory: Completion of WELD 15 with grade of "C" or better
Hours: 90 (36 lecture, 54 laboratory)
Theory, techniques and practice in position welding of Shielded Metal Arc, Gas Metal Arc and Oxyacetylene welding. Plasma and Flame Cutting are also employed. Intended as a foundation welding technology course for students on the welding career path. (not transferable)

WELD 25 INTERMEDIATE WELDING TECHNOLOGY—CAREER PATH
Units: 3
Prerequisite: Completion with grade of "C" or better, or concurrent enrollment in WELD 20
Hours: 90 (36 lecture, 54 laboratory)
Emphasis on position welding techniques in Shielded Metal Arc (SMAW) and Oxy-Acetylene welding (OAW). Flux Core Arc (FCAW), Oxy-fuel flame Cutting (OFC) and Air Carbon Arc Cutting (CAC-C) are also performed. Intended as an intermediate level welding course for students following a career path in the welding field. Students who have taken WELD 30 are advised not to enroll in WELD 25. (not transferable)

WELD 28 INDEPENDENT STUDY
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. See Independent Study page in catalog. (CSU)

WELD 30 SHIELDED METAL ARC WELDING OF STRUCTURAL PLATE AND PIPE
Units: 3
Prerequisite: Completion of WELD 20, or equivalent experience using Shielded Metal Arc (Stick or Arc) process
Advisory: Familiarity with out-of-position welding (especially vertical and overhead) and weld joint preparation
Hours: 108 (36 lecture, 72 laboratory)
Welding of structural plates and pipes using accepted practices of industry with Shielded Metal Arc (Stick) Process. Emphasis on techniques of out-of-position welding (3G-4G plate and 5G-6G pipe full penetration welds). (CSU)

WELD 35 WELDING SKILL AND SPEED DEVELOPMENT
Units: 2
Prerequisite: Completion of WELD 30 and 40 with grades of "C" or better
Advisory: Completion of DES 1 with grade of "C" or better
Hours: 72 (18 lecture, 54 laboratory)
Further development of skills, speed and experience in Welding Technology. Individual projects are designed by the student with the approval and supervision of the instructor. (not transferable)

WELD 40 WIRE FEED MIG WELDING
Units: 2
Hours: 90 (18 lecture, 72 laboratory)
Covers the various modes of metal transfer across the arc when using Gas Metal Arc Welding process or MIG and Flux Cored Arc Welding, both Self Shielding and Dual Shielding. (CSU)

WELD 50 GAS TUNGSTEN ARC WELDING (TIG)
Units: 3
Prerequisite: Completion of WELD 10 or equivalent Oxyacetylene Welding experience
Hours: 108 (36 lecture, 72 laboratory)
Tungsten Inert Gas Welding methods and techniques used to weld exotic metals such as stainless, aluminum and alloy steels. Instruction in equipment setup for different metals, rod selection, material identification and welding techniques using Gas Tungsten Arc. Laboratory exercises include starting the arc, running beads, pad welding, fillet and groove welds using various metals. (CSU)

WELD 60 WELDING METALLURGY
Units: 2
Prerequisite: Completion of WELD 30 or WELD 50
Advisory: Completion of CHEM A
Hours: 72 (36 lecture, 36 laboratory)
Exploration of the production and properties of ferrous metals used in the welding industry. The chemical and physical properties of metals, crystallization and theoretical concepts of alloying. Laboratory experiments in metal identification, hardness and destructive testing, heat treating, sample preparation and microphotography. (CSU)
WELD 70 PRINCIPLES OF FABRICATION
Units: 2
Prerequisite: Completion of WELD 20
Advisory: Completion of WELD 10
Hours: 72 (18 lecture, 54 laboratory)
Advanced welding course to learn methods of steel construction. Includes design and fabrication techniques, tool and equipment utilization, cost estimates, construction methods and installation procedures. Designed for welders ready to apply their skills in steel fabrication. (CSU)

WELD 80 STRUCTURAL STEEL WELDING CERTIFICATION
Units: 1
Prerequisite: Completion of WELD 30 and 40 with grades of "C" or better or equivalent coursework
Advisory: Students must be competent in vertical and overhead position welding using certification welding processes of SMAW and FCAW
Hours: 42 (6 lecture, 36 laboratory)
Designed to certify the welder within the guidelines of American Welding Society (AWS) Structural Steel Code D1.1. Focus on manipulative skill development using SMAW, FCAW and GMAW processes in preparation for the actual certification test. (not transferable)

WELD 82 PIPE WELDING CERTIFICATION
Units: 1.5
Prerequisite: Completion of WELD 30 and WELD 40 with grades of "C" or better; concurrent enrollment in or completion of WELD 80 with grade of "C" or better
Advisory: Students must be competent in horizontal, vertical and overhead position welding with open root groove joints using certification welding processes of SMAW and GTAW
Hours: 54 (14 lecture, 40 laboratory)
Designed to certify the welder within the guidelines of American Society of Mechanical Engineers—section #IX—Boiler and Pressure Vessel Code or American Petroleum Institute—welding of crosscountry pipelines. Focus on manipulative skill development using SMAW, GTAW and GMAW processes in preparation for the actual certification test. (CSU)

WELD 95 INTERNSHIP IN WELDING TECHNOLOGY
Units: 0.5-4
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU—with unit limitation)

WELD 300 SELECTED TOPICS IN WELDING TECHNOLOGY
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (CSU)

WELD 400 SELECTED TOPICS IN WELDING TECHNOLOGY
Units: 0.5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "400" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog. (not transferable)

LIBERAL ARTS
INTERIM DEAN: Rebecca Bocchicchio
ASSOCIATE DEAN: Anne Fleischmann
DIVISION OFFICE: W 107
LIAISON COUNSELORS: M. Braga, M. Moon

WOMEN’S STUDIES
A.A. DEGREE
Women’s Studies is an interdisciplinary major based on the premise that gender is a historical variable that affects the social, economic and political structure of our society as well as the everyday lives of women and men. Employing a wide range of perspectives from disciplines such as history, literature, philosophy, sociology, psychology, art, anthropology and biology, students will explore and examine how these disciplines pertain to women and how women have contributed to the cultural and sociological landscape.
The A.A. degree provides students with core courses in Women’s Studies. Students may utilize the Women’s Studies curriculum to fulfill transferable general education requirements for CSU and UC systems as well as lower division Women’s Studies courses for transfer to four-year institutions with women’s studies majors. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of “C” or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns: Associate Degree Requirements (see pages 44-
WMST 1 INTRODUCTION TO WOMEN'S STUDIES

Formerly known as SSCI 27

Units: 3

Prerequisite: Eligibility for ENGL A

Hours: 54 lecture

Examination of the varying roles of women in society, emphasizing the diversity of both local and transnational women's experiences. Investigation includes history, embodiment, scientific and cultural representations, work, family, artistic production and social movements. Focuses on power and gender roles and how they vary for women and men of different racial, ethnic, class, national, ability and sexuality groups. (CSU, UC)

WMST 2 INTRODUCTION TO LGBT STUDIES/QUEER THEORY

Also known as HUM 27

Units: 3

Advisory: Eligibility for ENGL 1A

Hours: 54 lecture

A broad and general introduction to Queer Theory as an historical consequent of Feminism and Gay and Lesbian Studies. Emphasis on theoretical and philosophical underpinnings of Queer Theory, Social Construction versus Essentialism, Postmodernist theory, Politics, LGBT Studies and Queer Culture. (CSU, UC)

WMST 3 INTRODUCTION TO WOMEN, GENDER AND RELIGION

Also known as HUM 9

Units: 3

Hours: 54 lecture

Introduction to the topic of religion from a feminist perspective through a cross-cultural examination of major religious traditions of the East and West, as well as tribal faith practices. Emphasis on the historical role of women and gender in rituals, sacred texts, institutional structures, doctrine and religious iconography with respect to the impact on contemporary women regarding faith, politics and identity. (CSU, UC)

WMST 4 FEMINISM AND SOCIAL ACTION

Also known as SOC 10

Units: 3

Advisory: Completion of ENGL A or equivalent with a grade of “C” or better

Hours: 54 lecture

Examines sociological underpinnings of social action and explores unique contributions of feminism in challenging traditional gender scripts. Provides an overview of the ways in which women engage in deliberative social action to change the conditions of their lives and of their communities. Emphasizes sociological theory as applied to issues related to the institutions of family, health, religion, employment, sexual harassment, housing and interpersonal violence. (CSU, UC)
Honesty in Academic Work
Success in college, as in other aspects of life, demands absolute honesty at all times. Sierra College expects that students, as well as faculty, will observe the principles of ethical conduct in their treatment of fellow members of the academic community and in their accomplishment of academic work. Students are responsible for familiarizing themselves with these principles as they pertain to each course in which they enroll. When completing assignments, students should be careful to follow the principles of ethical conduct. Students who are uncertain about the ethics involved in particular courses or assignments should make it a point to talk with instructors. Proven misconduct or violation of these principles will be disciplined as set forth in the Honesty in Academic Work Policy.

The instructor has absolute authority over issuing the final course grade.

It is important to remember that the principles of academic honesty in no way restrict free inquiry and the open exchange of diverse, and sometimes unpopular ideas. These are encouraged, for they are vital to learning and the pursuit of reason and truth.

Students who fail to comply with this policy will be subject to disciplinary action as described in the Honesty in Academic Work Administrative Procedure 5515.

Examples of behavior deemed to be dishonest
1. Representing as your own, work that was borrowed, purchased, written, or obtained in any other manner from another student or any other sources. All work accomplished to meet course requirements must be the student’s own original work in oral and written examinations, class projects, lab data, oral presentations, visual media and other assignments. Group projects must represent the original work of the group; each instructor is free to establish the guidelines for collaborative assignments.

2. Plagiarism, which is to knowingly present borrowed wording, ideas, opinions, visual media (photos, videos, etc.) or data as if it were one’s own original creation, must under all circumstances be avoided. In papers based on research, plagiarism can be avoided by clearly acknowledging the sources of all information that is not original. The source of quotations and paraphrases must be acknowledged in footnotes, endnotes, or internal citations and/or in a bibliography/list of works cited in a form or style appropriate to the discipline.

Examples of cheating
1. Any type of assistance, oral, visual or written, given by one student to another during a project or examination
without the approval of the instructor.
2. Fabricating information or sources.
3. Using forbidden notes or other sources of information on examinations.
4. Altering a grade or interfering with the grading procedures in any course.
5. Allowing someone other than the officially enrolled student to represent the same.
6. Forging attendance documents or other records.
7. Stealing copyrighted computer software.
8. Submitting purchased, commercially prepared papers.
9. Using any electronic device (calculator, tape recorder, or computer) during an examination unless permitted by the instructor.

**Consequences of academic dishonesty**
An instructor may choose any one or more of the following steps when a student has engaged in behavior that is deemed to be dishonest:
1. Confront the student or students and give counsel regarding the unacceptable nature of the offense.
2. Reassign the research paper, project, exam, or assignment for reevaluation including the possibility of a lower grade on that assignment as a consequence for the dishonesty.
3. Designate a failing grade or a zero for the assignment, project, exam, or paper.
4. Refer the student or students to the Disciplinary Officer for the consideration of additional and more severe consequences, including the possibility of suspension or expulsion from Sierra College. (See Board Policy 5500)

**Standards of Conduct**
By enrolling at Sierra College, a student agrees to be a responsible member of the District community; obey the law; comply with the published rules and regulations of the District; respect the rights, privileges and property of the other members of the District community; and not interfere with legitimate District affairs.

Each student is responsible to adhere to the policies and procedures of Sierra College, as well as all federal, state and local laws. All rules and regulations applying to conduct also apply to student employees, whether all or a portion of the salary is paid by the District.

The District Superintendent/President has established procedures for the imposition of discipline on students in accordance with the requirements for due process of the federal and state law and regulations.

The procedures clearly define the conduct that is subject to discipline, and identify potential disciplinary actions, including but not limited to the removal, suspension or expulsion of a student.

The President notifies the Board of all long term suspensions of one or more school terms. The Board considers any recommendation from the Superintendent/President for expulsion. The Board considers an expulsion recommendation in closed session unless the student requests that the matter be considered in a public meeting. Final action by the Board on the expulsion shall be taken at a public meeting.

The procedures are widely available to students through this catalog and other means.

**The following conduct shall constitute good cause for discipline, including but not limited to:**
- Disruptive behavior, willful disobedience, habitual profanity or vulgarity, defiance of the authority of, threats towards, or persistent abuse of, District personnel on District-controlled property or at District sponsored or supervised functions or through electronic means.
- Continued serious misconduct where other means of correction have failed to bring about proper conduct.
- Acts that would be considered sexual harassment as defined by law or by District policies and procedures.
- Falsification, alteration or misuse of District documents and records; or knowingly furnishing false information to the District.
- Act or threat of damage to or theft of property belonging to or located on District-controlled property or facilities.
- Failure to comply with program-specific policies, procedures, and standards and District Board Policies and Administrative Procedures.
- The physical or verbal disruption of instructional or student services activities, administrative procedures, public service functions, authorized curricular or co-curricular activities or prevention of authorized guests from carrying out the purpose for which they are on campus.
- Unauthorized entry into, or use of, District-controlled facilities.
- Failure to comply with directions of District officials, faculty, staff, or campus security officers who are acting in performance of their duties.
- Engaging in conduct which is obscene, lewd or indecent; libelous or slanderous or which so incites students as to create a clear and present danger of the commission of unlawful acts on District premises.
- Cheating or plagiarizing in relation to a District course or academic program (California Education Code Section 76224). See also Board Policy 5515.
- Causing, attempting to cause, or threatening to cause physical injury to another person.
- Possession, sale or otherwise furnishing any firearm, knife, explosive or other dangerous object, including but not limited to any facsimile firearm, knife or explosive, unless, in the case of possession of any object of this type, the student has obtained written permissions to possess the item from a District employee, which is concurred by the Superintendent/President.
- Gambling on District property.
- Unlawful possession, use, sale, offer to sell, or furnishing, or being under the influence of, any controlled substance,
an alcoholic beverage, or an intoxicant of any kind; or unlawful possession of, or offering, arranging or negotiating the sale of any drug paraphernalia on campus or during District-sponsored activities such as field trips, athletic events, study abroad programs, conferences, and workshops.

- Smoking in an area where smoking has been prohibited by law or District regulation.
- Unauthorized preparation, giving, selling, transfer, distribution, or publication, for any commercial purpose, of any contemporaneous recording of an academic presentation in a classroom or equivalent site of instruction, including but not limited to class notes, except as permitted by any District policy or administrative procedure.
- Violation of any statute, regulation, or ordinance or law punishable by incarceration or a fine, other than a vehicular parking violation. Whether a student has committed such a violation shall be determined solely by the District for purposes of any student disciplinary action. Any District disciplinary action is separate and distinct from any other governmental action. The decision of any non-District person or entity, including, but not limited to, a jury, as to whether the violation occurred is not binding on the student disciplinary action, although it may be considered in the student disciplinary action.
- Discrimination against or harassment of another student, District employee, or individual based on disability, gender, gender identity, gender expression, nationality, race or ethnicity, religion or sexual orientation. (Board Policies 3410 and 3420).
- Engaging in intimidating conduct or bullying against another student through words or actions, including direct physical contact; verbal assaults, such as teasing or name-calling; social isolation or manipulation; and cyberbullying.

Student Discipline Procedures and Due Process
The purpose of this procedure is to provide a prompt and equitable means to address violations of the Standards of Student Conduct outlined in Board Policy 5500. Each case is handled individually; while due process is always employed, some of the procedures outlined below may not be necessary in every case. For nursing student discipline procedures and due process, see Administrative Procedure 5521.

Definitions
A. Day(s): Those days, Monday through Friday, when the District is open to the public.
B. District: Sierra Joint Community College District, including its officers, agents, employees or members of the Board of Trustees.
C. Expulsion: Permanent exclusion of the student by the Board of Trustees.
D. Informal Agreement: A written agreement between the Disciplinary Officer and the student resolving the disciplinary problem. If the student does not comply with the informal agreement, disciplinary proceedings shall be re-instituted against the student at the discretion of the Disciplinary Officer, unless the informal agreement provides otherwise. Failure by the student to comply with the informal agreement is itself a separate cause for discipline.
E. Instructor: Any academic employee of the District in whose class a student subject to discipline is enrolled, or counselor who is providing or has provided services to the student, or other academic employee who has responsibility for the student’s educational program.
F. Mail: Whenever this policy calls for or permits a written notice or other communication to be given, mailing by certified mail, regular mail and/or by electronic communication and addressed to the last known address of the student shall be deemed to be sufficient compliance with the provision. The District will use reasonable means to transmit notice and communications, using the information provided by the student. It is the student’s responsibility to ensure that the District has updated and current contact information at all times. A student’s failure or refusal to sign a receipt to indicate it was received shall not invalidate the contents of the notice. Personal delivery shall also be deemed compliance with any mailing requirement. Any mail sent to the student’s last known mailing address shall be presumed to be received by the student.
G. Removal from class: Exclusion of the student by an instructor for the day of the removal and the next class meeting. Decisions on such removals shall be final and cannot be appealed.
H. Student: Any person currently enrolled as a student in any course or program offered by the District.
I. Suspension: Exclusion of a student for good cause. A student who has been suspended shall be prohibited from being enrolled at any campus or site in the District for the entire period of the suspension.
   1. Immediate Suspension-The Disciplinary Officer may order immediate suspension of a student where he or she concludes that immediate suspension is required to protect lives or property and to ensure the maintenance of order. In such cases where immediate suspension is ordered, a reasonable opportunity will be afforded the student for a hearing thereafter.
      The Disciplinary Officer may also order suspension of a student as follows:
   2. Suspension from one or more classes, privileges or activities for a period of up to ten (10) instructional days. If a minor student is suspended, the parent or guardian shall be notified in writing of the suspension (Education Code Section 76031).
   3. Suspension from one or more classes, privileges or activities for the remainder of the school term, or for
one or more terms. If a minor student is suspended, the parent or guardian shall be notified in writing of the suspension (Education Code Section 76031).

J. Warning: A verbal or written notice to the student that continuation or additional violations of code of conduct may be cause for subsequent disciplinary action. A written record of the fact that a verbal warning has been issued may become part of a student’s record at the District for a period of up to one year. Failure of the District to expunge the written record of a verbal warning after one year shall not be the basis for any legal action against the District. Written warnings shall become part of a student’s permanent record at the District.

K. Withdrawal of Consent to Remain on Campus or District-Controlled Property: Withdraw of consent to remain on any campus or District-controlled property may be imposed by the Disciplinary Officer or designee on any person to remain on campus in accordance with California Penal Code Section 626.4 where there is reasonable cause to believe that such person has willfully disrupted the orderly operation of the campus or facility.

The Disciplinary Officer or designee may notify any person that consent to remain on the campus or other District-controlled facility has been withdrawn whenever there is reasonable cause to believe that such person has willfully disrupted the orderly operation of that campus or facility. If the person is on campus at the time, he/she must promptly leave or will be escorted off campus. If consent is withdrawn by the Disciplinary Officer or designee a written report will be promptly made to the Vice President, Student Services.

The person from whom consent has been withdrawn may submit a written request for a hearing on the withdrawal within the period of the withdrawal. The written request shall state the address to which notice of hearing is to be sent. The request shall be granted not later than seven days from the date of receipt of the request. The hearing will be conducted in accordance with the provisions of this procedure relating to interim suspensions.

In no case shall consent be withdrawn for longer than 14 days from the date upon which consent was initially withdrawn.

Any person to whom consent to remain on campus has been withdrawn who knowingly reenters the campus during the period in which consent has been withdrawn is guilty of a misdemeanor and is subject to arrest. This section does not apply to any person who enters or remains on such campus or facility for the sole purpose of applying for the reinstatement of consent or for the sole purpose of attending a hearing on the withdrawal (Penal Code 626.2 and 626.4).

Disciplinary Actions and Procedures
A. The Disciplinary Officer is the Vice President, Student Services or designee.
B. Procedures of Immediate Suspension: A student placed on immediate suspension will be afforded a reasonable opportunity for a hearing day in accordance with Education Code 66017. The decision to place a student on Immediate Suspension is final and cannot be appealed.

C. Procedures for all other disciplinary actions:
1. Students accused of alleged misconduct shall be referred to the disciplinary officer. The disciplinary officer may require a written statement relevant to the alleged misconduct. The disciplinary officer has the right to impose disciplinary action based on good cause as set out in board Policy 5500 following the disciplinary action procedures below.

2. In cases of alleged student misconduct, the Disciplinary Officer or designee shall use all reasonable means to contact the student to notify him or her of the allegations and to provide an opportunity for the student to respond. The disciplinary officer shall offer the student the opportunity to address the accusations and/or instances of alleged misconduct verbally or in writing. Students must respond within 2 days of receiving notice. Failure to respond shall be deemed a waiver of the right to contest any discipline imposed or other action taken.

3. After considering the student’s response and considering all information relative to the issue, the Disciplinary Officer may choose to take any of the following actions:
   a. Drop the charges for lack of evidence.
   b. Issue a warning.
   c. Prohibit the student from intentionally contacting (e.g., by telephone or email), or otherwise disturbing the peace of others specifically named for a specified period of time.
   d. Place the student on suspension status including one or more of the following:
      1. Suspension from one or more classes or activities (sports, student government, field trips, drama events, etc.) for a period of up to ten days. Any decision to suspend a student for up to ten days shall be final and may not be appealed.
      2. Suspension from one or more classes or activities for the remainder of the term.
3. Suspension from all classes and activities for one or more terms.
   e. Recommend expulsion to the Board of Trustees.
   f. Any other action the Disciplinary Officer deems appropriate.

D. Informal Agreement of Resolution: In cases where the Disciplinary Officer determines that an Informal Agreement is appropriate, the accused student will be informed that the Informal Agreement, while not a part of the student’s permanent record, is binding. If the student fails to abide by the Informal Agreement, such failure will be regarded as actionable misconduct and may subject the student to disciplinary action.

E. Removal from Class by Instructor: An instructor may remove a student from class for the day of the removal and the next class meeting (no matter the length or type of class) for any good cause. The instructor shall immediately report the removal to the Disciplinary Officer. If the student removed is a minor, the Disciplinary Officer shall invite the student’s parent or guardian to attend a parent conference regarding the removal as soon as possible. If the instructor or parent or guardian so requests, a District administrator shall attend the conference. During the period of removal, the student shall not be returned to the class from which he or she was removed without the concurrence of the instructor (Education Code Section 76032). Decisions on such removals shall be final and cannot be appealed.

F. Failure to Comply with Program-Specific Policies and Procedures: Sierra College offers educational programs and services that require compliance with specific policies, procedures and standards including but not limited to, Nursing, Public Safety, Study Abroad, Health Center, and Residence Life. Students who fail to comply with these policies will be disciplined according to the specific mandates of the program. This does not preclude discipline against students enrolled in those programs and services for other alleged misconduct under these procedures.

G. Financial Aid: Any student suspended or expelled from the District shall be ineligible for scholarships, loans, grants, or any other financial aid during the period of suspension or expulsion.

H. Employment: Any student suspended or expelled from the District shall be ineligible for student employee status with the District for the period of suspension or expulsion.

I. Fees: No student suspended or expelled shall be refunded or credited any fees paid by and/or for the student.

J. Deadlines: Failure of the District to meet any of the deadlines specified in this Procedure shall not be construed against the District or result in a finding in favor of the student.

K. Right to Include Statement or Response to Disciplinary Action: Pursuant to Education Code 76233, whenever there is included in any student record information concerning any disciplinary action taken by the Disciplinary Officer in connection with the student, the student shall be allowed to include in such a record a written statement or response concerning the disciplinary action.

Disciplinary Appeal Procedures
If a decision is made to suspend the student for more than ten days or to recommend expulsion, the student will be provided a written notice of the disciplinary action. If the student is a minor, the parent or guardian shall also be provided written notice. The notice shall include:

A. A statement of the charges, which shall identify the cause for which long-term suspension or recommended expulsion is being imposed. The statement shall briefly describe the facts alleged as a basis for violation of the student code of conduct.

B. Notification of the student’s right to file an appeal leading to the due process outlined below.

C. Notification that the Disciplinary Appeals Committee may consider the student’s previous disciplinary and academic record.

D. Notification of the student’s right to be accompanied by an advisor. If the student is accompanied by an attorney, the student and the address of that attorney must be submitted to the office of the Vice President, Student Services at the time the filing of an appeal is made. Failure to do so shall constitute good cause for a continuance of the hearing and good cause to exclude the attorney. If the student is represented by an attorney, the District will also be represented by an attorney. The role of the advisor or any attorney shall be passive in this procedure. The advisor or attorney may be present at the appeal hearing and may counsel the student responding to questions relating to the incident. The advisor or attorney may not address the Disciplinary Appeals Committee and shall not be permitted to participate in any way during the hearing except to offer counsel to the student.

E. If the suspended student is a minor, the parent or guardian shall also be notified in writing of the suspension.

F. A copy of these procedures.

G. A Disciplinary Appeal form.

The notice letter may be amended at any time. If an amendment would require the student to prepare a substantially different defense, the Disciplinary Officer may postpone the hearing for a reasonable time, not to exceed ten days.

The student must submit the Disciplinary Appeal form to the Disciplinary Officer no later than three instructional days after receipt of the notice. Failure to submit an appeal form will be presumed to be the student’s acceptance of the disciplinary action. If the student requests an appeal, the Disciplinary Officer will convene a meeting of the Disciplinary Appeals Committee within ten instructional days.
Disciplinary Appeal Hearings

The Disciplinary Appeals Committee shall consist of three members: one administrator, one faculty member, and one student. The District Superintendent/President or designee shall appoint a chair to the Disciplinary Appeals Committee. The chair shall be non-voting. The chair will request that the Management Senate, Academic Senate, and Student Senate appoint representatives. Committee members shall not in any way be connected to the event out of which the action arose.

Hearing Process

1. The hearing shall be convened within ten instructional days from the date an appeal is filed. The hearing shall be limited to one meeting, unless required otherwise by due process.
2. The student shall be given not less than 48 hours advance notice of the time, date and place of the hearing.
3. The hearings need not be conducted according to technical rules relating to evidence and witnesses. Any relevant evidence shall be admitted if it is the sort of evidence on which responsible persons are accustomed to rely in the conduct of serious affairs. Hearsay evidence may be used for the purpose of supplementing or explaining other evidence, but shall not be sufficient in itself to support a finding. Unduly repetitious evidence may be excluded.
4. The Disciplinary Officer shall carry the burden of proof by a preponderance of the evidence in support of the disciplinary action. The decision shall be by a majority vote.
5. The student and the Disciplinary Officer have the right to present police reports, written and/or oral statements. Written statement of individuals not present at the hearing must be made under penalty of perjury and must be submitted to the Chair prior to the start of the hearing. If the written statement is disputed by either side, the Chair may continue the hearing to allow the objecting party to secure the attendance of the witness, obtain contradictory evidence, or such other remedy determined by the Chair.
6. All proceedings of the Committee shall be closed to everyone other than the Committee members, the Disciplinary Officer, the student(s) charged, a witness while presenting evidence, the advisor or attorney for the student, and the advisor or attorney for the District. All participants shall maintain the strictest confidentiality. If the student is a minor, the student’s parents may also be present.
7. Final deliberations will be conducted with only the Committee members present.
8. The Committee will consider all available evidence relevant to the appeal.
9. The Disciplinary Appeals Committee will provide a written report of its findings to the District Superintendent/President within three instructional days after the conclusion of the hearing. The Committee may choose any of the following options: (a) uphold the action; (b) revoke the action; (c) impose a lesser action; or (d) impose a more severe action.
10. All Disciplinary Appeals Committee hearing proceedings shall be recorded and all participants will be advised as such. The recordings shall be maintained by the Office of the Vice President, Student Services for two calendar years, along with copies of all decisions made. Access to the recordings and copies of decisions made, shall be limited to the parties involved or as otherwise required by law.

The District Superintendent/President or designee shall review the report of the Disciplinary Appeals Committee. The District Superintendent/President or designee may consult with the chairperson and, if necessary, refer the matter back to that committee for additional clarification. Neither the student nor the parent/guardian shall have a right to a hearing by the District Superintendent/President. The District Superintendent/President or designee shall render a decision as soon as reasonably practicable, which in most cases shall occur within three days of receipt of the report. The District Superintendent/President’s decision is final except for such matters as are required to be determined by the Board of Trustees.

Upon suspension or expulsion of a student, the
Students are afforded the following rights:

- The right of free expression protected by state and federal constitutions and Education Code 76120.
- The right to have academic records treated in a confidential and responsible manner with due regard to the personal nature of the information these records contain. Student records will be released only with the written consent of the student or as provided by law and pursuant to Administrative Procedure 5040.
- The right to take reasonable exception to the data or views offered in any course of study without disrupting the instructional environment and to reserve judgment about matters of opinion.
- The right to be free from unfair or improper action.
- The right to participate in the formation of policy affecting students in accordance with established procedures for shared governance.
- The right to petition to form an organization around any particular interest, including the freedom to organize and to join student organizations, subject to published campus and District regulations.

Students who allege that an action or decision by the District has violated their rights as listed above may file a grievance as outlined in the Students’ Rights and Grievances Policy (Administrative Procedure 5530).

Students who allege that an action or decision by the District has violated their rights as listed above may file a grievance as outlined in the Students’ Rights and Grievances Policy (Administrative Procedure 5530).

Students are encouraged to follow the college grievance process. Issues that are not resolved may be referred to the California Community Colleges Chancellor’s Office at http://californiacommunitycolleges.cccco.edu/complaintsform.aspx
**Grievances**

A grievable matter is an alleged action or decision of the District that adversely affects the status of a student or violates the rights of a student as set forth in Board Policy 5530. The following allegations or issues shall not be heard under this Administrative Procedure:

- Discipline of students (see Administrative Procedures 5520 and 5521)
- Discipline of employees
- Traffic or parking citations (through Campus Security)
- Grade changes (see Administrative Procedure 4231)
- Discrimination or sexual harassment complaints other than academic accommodation. (See Board Policies 3410 and 3430 and Administrative Procedures 3410, 3430 and 3435)

Procedures for grievances and complaints are provided below and provide exclusive means for resolving any alleged unfair or improper action. The purpose of this procedure is to secure an equitable solution to student complaints at the lowest level possible. Some education programs may have specific processes and procedures for grievances and complaints.

The District Superintendent/President shall appoint an employee who shall serve as the Grievance Officer. The Grievance Officer shall serve to assist all parties to facilitate a full, fair and efficient resolution of the grievance, shall coordinate all scheduling of hearings, and shall avoid an adversarial role.

Failure of the District to meet any of the deadlines specified in this procedure shall not be construed against the District nor result in a finding in favor of the student.

**Informal Grievance Process**

A student who believes that his/her rights have been violated must make a reasonable, good faith attempt to resolve the matter through the informal grievance process before the formal process can be requested. At any point during the informal grievance process level, a student may also informally and orally present the complaint to the Grievance Officer.

**First Step** The student should discuss the problem directly with the person involved or see the grievance officer for assistance in problem resolution within sixty instructional days from the date the student became aware of the problem or the alleged act. Failure of the student to act within the above-specified sixty day period shall constitute a waiver of the right to pursue the matter further.

**Second Step** If the problem cannot be resolved at the first step, the student shall discuss the problem with the immediate supervisor of the person against whom the complaint is directed. The immediate supervisor shall make every effort to resolve the problem with the student and the person being grieved.

**Third Step** If the problem cannot be resolved at the second step, the student shall discuss the grievance with the next-level administrator within ten working days from receiving a decision from the immediate supervisor.

**Formal Grievance Process**

Within five instructional days of the completion of the informal grievance process, the student may file a formal grievance by submitting a Grievance Form to the Grievance Officer. The Grievance Form may be obtained from the Grievance Officer. The Grievance Officer will determine whether the allegations are grievable under administrative procedure as follows:

- The grievant was an enrolled student at the time the alleged incident occurred;
- The student has completed the informal process;
- The timelines have been met;
- The complaint, if true, would constitute a violation of Board Policy 5530;
- There is a remedy which is within the authority of the District to grant;
- There is not another prescribed administrative channel for due process.

If the grounds for grievance have been satisfied, a formal hearing before the Grievance Committee will be scheduled within ten instructional days of the request. The student must contact the office of the Vice President, Student Services for the hearing date.

**Grievance Hearings**

The Grievance Committee shall consist of three members: one administrator, one faculty member, and one student. The Grievance Officer shall serve as the chair. The chair will request that the Management Senate, Academic Senate, and Student Senate appoint representatives. Committee members shall not in any way be connected to the event out of which the action arose.

**Hearing Process**

1. The hearing shall be convened within ten instructional days of the request. The hearing shall be limited to one meeting unless required otherwise by due process.
2. The student shall be given not less than 48 hours advance written notice of the time, date and place of the hearing.
3. If the student is accompanied by an attorney, the name and address of that attorney must be submitted to the Office of the Vice President, Student Services at the time of filing the request for a formal grievance. Failure to do so shall constitute good cause for a continuance of the hearing and good cause to exclude the attorney. If the student is represented by an attorney, the District will also be represented by an attorney. The role of the advisor or attorney shall be passive in this procedure. The advisor or attorney may be present at the appeal hearing and may counsel the student responding to questions relating to the incident. The advisor or attorney may not address the Grievance Committee and shall not be permitted to
participate in any way during the hearing except to offer counsel to the student.

4. The decision of the Grievance Officer shall be final on all matters relating to the conduct of the hearing unless there is a two-thirds majority vote of the members of the Grievance Committee to the contrary.

5. The hearings need not be conducted according to technical rules relating to evidence and witnesses. Any relevant evidence shall be admitted if it is the sort of evidence on which responsible persons are accustomed to rely in the conduct of serious affairs. Hearsay evidence may be used for the purpose of supplementing or explaining other evidence, but shall not be sufficient in itself to support a finding. Unduly repetitious evidence may be excluded.

6. The burden of proof by a preponderance of the evidence shall be carried by the grievant.

7. The Grievance Officer shall assist all parties in the securing of supporting information.

8. Each party of the grievance may provide the Grievance Committee with police reports, written and/or oral statements. Written statements of individuals not present at the hearing must be made under penalty of perjury and must be submitted to the Grievance Office prior to the start of the hearing. If the written statement is disputed by either side, the Grievance Officer may continue the hearing to allow the objecting party to secure the attendance of the witness, obtain contradictory evidence, or such other remedy determined by the Grievance Officer.

9. All proceedings of the Grievance Committee shall be closed to everyone other than the Committee members, the Grievance Officer, the student grievant, a witness while presenting evidence, the advisor or attorney for the student, and the advisor or attorney for the District, the person being grieved, and the advisor or attorney for the person being grieved. All participants shall maintain the strictest confidentiality.

10. Final deliberations will be conducted with only the Grievance Committee members present.

11. The Grievance Committee will consider all relevant evidence pertaining to the appeal and issue a written report to the District Superintendent/President.

12. All Grievance Committee hearing proceedings shall be recorded. The recordings shall be maintained by the Grievance Officer for two calendar years, along with copies of all decisions made. Access to the recordings and copies of decisions made shall be limited to the parties involved, unless otherwise required by law.

13. The Grievance Committee will provide its findings to the District Superintendent/President within three instructional days after the conclusion of the hearing.

**Decision by the District Superintendent/President**
- The grievant shall not have a right to a hearing by the District Superintendent/President.
- The District Superintendent/President shall review the report of the Grievance Committee.
- The District Superintendent/President may consult with the Grievance Officer.
- The District Superintendent/President shall submit a written decision to all parties concerned.
- The District Superintendent/President may accept or reject the findings and recommendations of the Grievance Committee.
- Once the District Superintendent/President makes a decision, the grievance process has been completed.
- There is no right of appeal to the Board of Trustees.

The Student Rights and Responsibilities Handbook is available on the Sierra College web site at www.sierracollege.edu, under Student Rights and Responsibilities. Students may also obtain copies of the Student Rights and Responsibilities Handbook at: Rocklin Campus, Office of the Dean, Student Services, (916) 660-7304; Sierra College-Nevada County Campus, Dean, Administration Building, (530) 274-5301; Sierra College-Roseville Gateway Center, Admissions Office, (916) 781-6204.

**Disability**
The Sierra Joint Community College District does not discriminate on the basis of disability in admission, access, treatment, or employment for any of its programs and activities. Section 504 of the Rehabilitation Act of 1973, as amended, and the regulations adopted thereunder prohibit such discrimination. Students seeking information regarding Section 504 should contact the Disabled Student Programs and Services Office at (916) 660-7460. The District is in compliance with the Americans with Disabilities Act of 1990. Inquiries concerning compliance may be addressed to the Equal Employment Opportunity Officer, (916) 660-7006.

**Academic Accommodations Policy**
Enabled Students Programs and Services (DSPS) provides programs and support services to students with verified disabilities. The program assures that disabled students have equality of access to classes and programs.

The goal of providing reasonable academic accommodations to disabled students is to minimize the effects of the disability in the educational process. The disabled students need to be given the opportunity both to acquire information and to be evaluated in a way which allows the student to fully demonstrate his/her knowledge of the subject. Academic accommodations are individually determined by DSPS certificated faculty in consultation with the students and are based on a review of the functional educational limitations associated with the disability. Appropriate reasonable accommodations will be made in a timely manner.

**Student Responsibilities:**
1. The student must be enrolled in Sierra College classes and must provide the DSPS office with a written
assumed that the student no longer disagrees with the accommodation determination.

2. The dSPS Coordinator or designee will discuss and confer with the dSPS certificated faculty member, the class instructor and other resources as appropriate to review the student’s disability and make a determination regarding the appropriate accommodation within five instructional days from the date the student contacted the dSPS Coordinator.

3. If the student is still not satisfied with the disposition of this accommodation, the dSPS Coordinator will refer the request to the district ADA/504 Compliance officer. The Compliance Officer will confer with all necessary parties and make a final determination on behalf of the District within thirty instructional days from the date the certification was signed by the dSPS certificated faculty member.

Computer and Network Use
The District has the right to monitor any and all aspects of the computer use and telephone voice mail systems, including employee or student email or voice mail, to ensure compliance with policies and procedures. The computers, computer accounts, and voice mail accounts given to employees and students are to assist them in the performance of their job duties or their academic studies. Employees and students should not have any expectation of privacy in anything they create, send, or receive via the computer or the telephone. The computer and telecommunication systems belong to the District and are intended for business and academic purposes only.

Computer and telecommunication resources and services include, but are not limited to, the following: host computers, file servers, work stations, stand-alone...
other matters. You may obtain a copy of the report by contacting the Campus Parking & Security Services Office or by accessing the website at www.sierracollege.edu. Public information regarding sex offenders may be obtained by accessing the Megan’s Law website at www.meganslaw.ca.gov.

Non-Discrimination Policy in Student Programs and Activities

The Sierra Joint Community College District has established non-discrimination policies which conform to applicable state and federal laws. These statutes prohibit discrimination and sexual harassment against all students. It is District policy to provide equal opportunities for all students in admission and access to academic courses, counseling programs, athletic programs, apprenticeship programs, assessment procedures, vocational education and other activities, without regard to students’ race, color, religious creed, national origin, ancestry, ethnic group identification, physical or mental disability, gender, sexual orientation or lack of English language skills. Inquiries concerning compliance may be addressed to the Equal Employment Opportunity Officer, (916) 660-7006. Students seeking information regarding Section 504 of the 1973 Rehabilitation Act should contact the Disabled Student Programs and Services Office at (916) 660-7460.

Politica de No Discriminación En los Programas y Actividades Estudiantiles

El distrito adjunto de los colegios comunitarios de la comunidad de Sierra ha establecido políticas de no discriminación que se ajusten a las leyes estatales y federales aplicables. Estas leyes prohíben la discriminación y el acoso sexual en contra de todos los estudiantes. Es la política del Distrito el proporcionar la igualdad de oportunidades para todos los estudiantes en cuanto a la admisión académica y el acceso a cursos académicos, programas de consejería, programas deportivos, programas de aprendizaje, procedimientos de evaluación, educación vocacional formación profesional y otras actividades, sin tomar en cuenta la raza, color, creencias religiosas, origen nacional, ascendencia (linaje), identidad de grupo étnico, discapacidad física o mental, género, orientación sexual de los estudiantes o la falta de habilidades en el idioma Inglés. Cualquier pregunta relacionada al cumplimiento de estas reglas puede dirigirse al Gerente de Igualdad, Oportunidades de Empleo, (916) 660-7006. Los estudiantes que necesiten información Con respecto a la sección 504 de 1973 de Rehabilitación Deben comunicarse con la Oficina de Programas y Servicios de Estudiantes Discapacitados al (916) 660-7460.

Posting of Materials

Students and the community at large shall be provided with bulletin boards for use in posting student materials at convenient campus locations.
Prohibition of Harassment
All forms of harassment are contrary to basic standards of conduct between individuals and are prohibited by state and federal law, as well as Board Policy, and will not be tolerated. Sierra College is committed to providing an academic and work environment free of unlawful harassment. The District shall be free of sexual harassment and all forms of sexual intimidation and exploitation and other unlawful harassment, including that which is based on any of the following statuses: national origin, religion, religious creed, age, sex (gender), race, color, medical condition, ancestry, sexual orientation, marital status, physical disability, mental disability, or perception of having one or more of the foregoing characteristics. Students who wish to review Sierra College’s complete Harassment Policy, or who believe they may have been the victim of harassment should contact the Equal Employment Opportunity Officer, (916) 660-7006.

Speech: Time, Place and Manner
The District is committed to providing its students and the community at large the ability to exercise their rights of free expression subject to the time, place and manner contained in Board Policy 3900.

District sites are non-public forums except for the areas that are defined as limited public forums. These limited public forums are available to students and the community and include all outdoor areas that are outside 30 feet of any building or similar structure. The District reserves the right to revoke the limited public forum designation and apply a non-public forum designation based not on speech content but on previously scheduled, dedicated use of a particular space that has been reserved for District-related functions.

The use of the limited public forums is subject to the following:

Persons using the limited public forum and/or distributing material in the limited public forums shall not: impede the progress of passersby, nor shall they force passersby to take material; not touch, strike or impede the progress of passersby, except for incidental or accidental contact, or contact initiated by a passerby; not use any means of amplification that creates a noise or diversion that disturbs or tends to disturb the orderly conduct of the campus or classes taking place at that time.

No persons using the limited public forums shall solicit donations of money, through direct requests for funds, sales of tickets or otherwise, except where he or she is using the limited public forums on behalf of and collecting funds for an organization that is registered with the Secretary of State as a nonprofit corporation or is an approved Associated Students Organization or club.

All persons using the limited public forums shall be allowed to distribute petitions, circulars, leaflets, newspapers, and other printed matter. Such distribution shall take place only within the limited public forums. Material distributed in the limited public forums that is discarded or dropped in or around the limited public forums other than in an appropriate receptacle must be retrieved and removed or properly discarded by those persons distributing the material prior to their departure from the limited public forum that day.

Speech shall be prohibited that is defamatory, obscene according to current legal standards, or which so incites others as to create a clear and present danger of the commission of unlawful acts on district property or the violation of district policies or procedures, or the substantial disruption of the orderly operation of the District.

Nothing in this policy shall prohibit the regulation of hate violence, so long as the regulation conforms to the requirements of the First Amendment to the United States Constitution, and of Section 2 of Article 1 of the California Constitution. The District will take action as appropriate for harassment, threats, intimidation, or hate violence unless such speech is constitutionally protected.

Student Right-to-Know Disclosure
In compliance with the Student Right-to-Know and Campus Security Act of 1990 (Public Law 101-542), it is the policy of Sierra College to make available its completion and transfer rates to all current and prospective students. Beginning in Fall 2009, a cohort of all certificate-, degree-, and transfer-seeking first-time, full-time students were tracked over a three-year period. Their completion and transfer rates are listed below. These rates do not represent the success rates of the entire student population at Sierra College nor do they account for student outcomes occurring after this three-year tracking period.

Based upon the cohort defined above, 27.03% attained a certificate, degree, or became “transfer-prepared” during a three-year period from Fall 2009 to Spring 2012. Students who have completed 60 transferable units with a GPA of 2.0 or better are considered ‘transfer prepared’.

Based upon the cohort defined above, 15.17% transferred to another postsecondary institution prior to attaining a degree, certificate, or becoming “transfer prepared” during a five semester period from Spring 2010 to Spring 2012.

More information about Student Right-to-Know Rates and how they should be interpreted may be found at the California Community College Student Right-to-Know Rate Disclosure website located at http://srtk.cccco.edu/index.asp.

Title IX Information
It is the policy of the Sierra Joint Community College District to ensure compliance with Title IX of the Education Amendments of 1972 by assuring that no student or employee shall on the basis of sex be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity receiving federal financial assistance.
Such programs and activities include admission of students, assessment procedures, counseling programs, access to academic courses, athletic programs, career technical education and other activities. Inquiries concerning compliance may be addressed to the Equal Employment Opportunity Officer, (916) 660-7006.

**Tobacco Use on Campus**
Sierra College is committed to providing a safe and healthy environment for its students, employees, and visitors. In light of evidence that the use of tobacco and exposure to secondhand tobacco smoke pose significant health hazards, the District has established a tobacco-free environment. The use of tobacco products is prohibited upon all District owned or controlled properties.

**Use of Copyrighted Material**
Employees and students shall not use copyrighted materials in a way which violates one of the copyright owner’s exclusive rights without permission from the owner unless that use is allowed by the laws pertaining to fair use. See Sierra College Administrative Procedure 3750.

**Visitors on Campus**
All persons visiting the campus are expected to conduct themselves in accordance with standards of the District which are designed to perpetuate its educational purposes, and to comply with campus rules, city and county ordinances, appropriate educational code sections, and state laws.

Visitors are welcome at all public meetings held at District facilities. However, no person, including but not limited to children, relatives or friends of students or employees, shall attend any class, laboratory, field trip or any other instructional or educational activity for which they are not registered or enrolled without verifiable permission from the Dean, Director, Supervisor, or Instructor of Record.

**Weapons on Campus**
Firearms or other weapons shall be prohibited on any College or District center or in any facility of the District except for activities conducted under the direction of District officials or as authorized by an official law enforcement agency.
Definition
Academic Freedom is the freedom and duty of professionally qualified persons to inquire or investigate, to discuss, publish or teach the truth as they see it in line with the tools of their discipline, subject to no religious or political control or authority, except the control of standards of professional ethics or the authority of the rational methods by which truths and conclusions are established in the disciplines involved. Both the protection of academic freedom and the requirements of academic responsibility mentioned in Board Policy 4030 apply not only to the full-time probationary and the tenured teacher but also to all others, such as part-time teachers and teaching assistants who exercise teaching responsibilities.

Philosophy Statement
Sierra College supports the American Association of University Professors (AAUP) Statement of Principles on Academic Freedom and Tenure, both the rights and duties specified therein. The philosophy statement that follows reiterates the principles specified in the AAUP Statement.

Institutions of higher education are conducted for the common good and not to further the interest of either the individual teacher or the institution as a whole. The common good depends upon the free speech for truth and its free exposition. Academic freedom is essential to these purposes and applies to both teaching and research. Freedom in research is fundamental to the advancement of truth. Academic freedom in its teaching aspect is fundamental for the protection of the rights of the teacher in teaching and of the student to freedom in learning. It carries with it duties correlative with rights.

a) The teacher is entitled to full freedom to research in the publication of results, subject to the adequate performance of their other academic duties; but research for pecuniary return should be based upon an understanding with the authorities of the institution.

b) The teacher is entitled to freedom in the classroom in discussing their subject, but they should be careful not to introduce into their teaching controversial matter that has no relation to their subject. The intent of this statement is not to discourage what is “controversial.” Controversy is at the heart of free academic inquiry. Indeed, there would be no need for an Academic Freedom policy to protect teaching of the uncontroverted. This passage serves to underscore the need for teachers to avoid persistently intruding material that has no relation to their subject and hence cannot be in line with the tools of their discipline.

c) The college teacher is a citizen, a member of a learned profession, and an officer of an educational institution. When they speak or write as a citizen, they should be free from institutional censorship or discipline, but their special position in the community imposes special obligations. As a person of learning and an educational officer, they should remember that the public might judge their profession and their institution by their utterances. Hence an individual should at all times be accurate, should exercise appropriate restraint, should show respect for the opinions of others, and should make every effort to indicate that they are not an institutional spokesperson.

Other duties correlative with the rights of Academic Freedom include the following.

a) While the teacher has the duty to design assessments to measure a student’s mastery of course content, s/he must recognize and respect the distinction between the student’s mastery of course content and the student’s freedom of belief. Teachers assess student learning for mastery of course content. Decisions as to course content and quality of scholarship are to be made by reference to the standards of the academic profession, as interpreted and applied by the community of scholars who are qualified by expertise and training to establish such standards. A student’s freedom of belief references an individual student’s subjective decision to agree or disagree with the curricular content of a particular course within a broader academic discipline. Instructors have a duty to enhance student learning by assessing mastery of course content but have no authority to compel student belief.

b) The College has a duty to adopt a student grievance policy for instances where a student believes her/his rights to have been violated. Sierra College has adopted a student grievance policy and this policy is readily available to all students in this catalog and the “Student Rights and Responsibilities Handbook.” College employees have a responsibility to educate students about the grievance policy and to facilitate the student grievance process.
Staffing Policy
Sierra College, recognizing that as a community college it should reflect the ideals and standards of the community, wishes to reiterate and emphasize its long-standing policy of non-discrimination in the employment of faculty and staff.

Board of Trustees

Cari Dawson Bartley
Area 5 (Auburn)

Dave Ferrari
Area 2 (Kings Beach)

Bill Halldin
Area 4 (Rocklin)

Aaron Klein
Area 7 (Colfax)

Scott Leslie
Vice President/Clerk, Area 3 (Roseville)

Nancy B. Palmer
Area 6 (Grass Valley)

E. Howard Rudd
President, Area 1 (Lincoln)

Student Trustee

Administration

Dr. Sharon Adams
Dean, Student Services
B.A., Patten College; M.A., Point Loma Nazarene University;
Ed.D., Alliant International University

Dr. Kimberly Bateman
Dean, Sierra College—Tahoe-Truckee Campus
B.A., Sierra Nevada College; M.A., Humboldt State University;
Ph.D., Pacifica Graduate Institute

Dr. Rebecca Bocchicchio
Interim Dean, Liberal Arts
B.A., California Polytechnic State University, San Luis Obispo;
M.A., Ph.D., University of California, Davis

Mandy Davies
Assistant Superintendent/Vice President, Student Services
B.A., Mills College; M.A.T., Alaska Pacific University;
M.P.A., Arizona State University; Graduate Study, University of Southern California

William H. Duncan, IV
Superintendent/President
B.S., M.B.A., California State University, Bakersfield

Patricia S. Eseaff
Dean, Student Services
B.A., University of California, Berkeley;
M.A., University of San Francisco

Dr. Anne Fleischmann
Associate Dean, Liberal Arts
B.A., Haverford College; M.A., Columbia University;
Ph.D., University of California, Davis

Brian Haley
Dean, Library & Learning Resource Center
B.A., M.A., Harvard University; M.S., Drexel University

Darlene Jackson
Associate Dean, Business, Applied Academics, and Physical Education
B.S., University of California, Davis; M.A., Mills College

Michael A. Kane
Associate Dean, Sciences & Mathematics
A.S., Columbia-Greene Community College; B.S., State University of New York College at Plattsburgh; M.S. Eastern Kentucky University

Sonja B. Lolland
Dean, Business, Applied Academics & Physical Education
B.A., University of California, Davis; M.B.A., California State University, Sacramento

Stephanie A. Ortiz
Executive Dean, Sierra College—Nevada County Campus
B.A., California State University, Fullerton;
M.S., California State University, Long Beach

Dr. Heather R. Roberts
Dean, Sciences and Mathematics
B.S., Texas A&M University; M.S., Baylor University;
Ph.D., Texas Tech University

Nancy Schwab
Associate Dean, Allied Health
B.S.N., University of Cincinnati; M.S.N., Ohio State University

Dr. Debra Sutphen
Assistant Superintendent/Vice President, Instruction
B.S., M.A., Northern Arizona University;
Ph.D., Washington State University

Christopher Yatooma
Assistant Superintendent/Vice President, Administrative Services
B.A., Wayne State University; M.A., University of Maryland University College
Faculty

Dr. Barry Abrams
Professor, English
B.A., Claremont McKenna College; M.A., Ph.D., University of California, Los Angeles

Dr. Alejandro Amigo
Professor, Earth Science
M.S., University of Buenos Aires; Ph.D., University of Florida; M.A., University of California, Davis

Jacqueline Anderson
Assistant Professor, Mathematics
B.A., Westmont College; M.S., University of California, Davis

Dr. Matt Archer
Professor, Anthropology
B.A., University of California, Los Angeles; M.A., Ph.D., University of Texas

Cheryl Axton
Professor, Counseling
B.A., Sonoma State University; M.A., Chapman University

Paul Badaracco
Professor, Biological Sciences
B.A., M.A., University of California, Santa Barbara

Daniel Balaguay
Professor, Mathematics
B.A., California State University, Sacramento; M.S., University of Montana

Maile E. Barron
Professor, Mathematics/Engineering
California State University, Chico; Shasta College; B.S., M.A.T., University of California, Davis; Sierra College; B.S., California State University, Sacramento

Alfred Batchelder
Assistant Professor, English
B.A., M.A., California State University, Sacramento

Sharon Bateson
Professor, Nursing
B.S., University of Minnesota; M.S., University of Phoenix

Elaine Bienvenue
Professor, Business
B.S., Salem State College; M.S., Boston College

Sean A. Booth
Professor, Geography
B.S., University of Oregon; M.A., California State University, Chico

Marcia M. Braga
Professor, Counseling
A.A., American River College; B.S., M.S., California Polytechnic State University, San Luis Obispo; M.A., Chapman University

Scott Bramlett
Professor, Disabled Student Program & Services Counseling
A.A., Sierra College; B.S., California State University, Chico; M.S., California State University, Sacramento

Joshua Breese
Assistant Professor, English
B.A., Humboldt State University; M.A., California State University, Sacramento

Dr. Michael C. Brelle
Professor, Chemistry
B.S., California State University, Chico; Ph.D., University of California, Santa Cruz

Marcia Brock
Professor, English as a Second Language
B.A., M.A., Eastern Kentucky University; M.A., California State University, Sacramento

Barry Brown
Professor, Computer Science
B.S., M.S., University of California, San Diego

Darci Brownell
Professor, Athletics/Health Education/Physical Education/Recreation Management
B.A., California State University, Sacramento; M.S., National University

Julie Bruno
Professor, Communication Studies
B.A., M.A., San Francisco State University

Charles T. Buchwald
Professor/Coordinator, Mathematics Center
A.S., Palomar College; B.S., M.S., California State University, San Marcos

Daniel B. Burns
Professor, Chemistry
B.A., M.A., California State University, Chico; M.S., National University

Denise Bushnell
Professor, Business/Computer Information Systems
B.S., University of Alabama; M.B.A., Walden University

Dr. Dominic Calabrese
Professor, Physics
B.S., DePaul University; M.S., Ph.D., University of Nebraska, Lincoln

Deirdre Campbell
Professor, Library Science
B.S., M.L.S., University of Arizona

Florence (Nini) Cardoza
Professor, Chemistry
B.A., San Francisco College for Women; M.S., University of California, San Francisco

Keely Carroll
Professor, Biological Sciences
B.S., M.S., California State University, Sacramento

Sara Casler
Professor, Spanish
B.A., Pacific University; M.A., Miami University

Brenna Chapman
Assistant Professor, Art
B.A., M.A., University of California, Davis

Dr. Keri Clemens
Professor, Chemistry
Antelope Valley College; B.S., Ph.D., University of California, Davis

Deborah Clifton
Professor, Nursing
B.S., M.S., California State University, Chico

Stephanie Coday
Professor, Psychology
B.A., San Diego State University; M.A., Alliant International University
William B. Cole  
Professor, Computer Science  
B.S., Duke University; M.S., Stanford University

Nathan Conkle  
Professor, English  
B.A., M.A., San Francisco State University

Mary V. Conway  
Professor, Athletics/Health Education/Physical Education/Recreation Management  
A.A., Packer Collegiate Institute; B.S., New York City University, Brooklyn; M.S., University of Illinois, Chicago

Ivor E. Cooper  
Professor, English  
B.A., Newbold College; M.A., Loma Linda University

Carol Jean Cox  
Professor, Geography  
B.A., California Polytechnic State University, San Luis Obispo; M.A., California State University, Chico; Graduate Study, California State University, Sacramento, California State University, Chico, University of California, Riverside, San Francisco State University

Sarah Cunningham  
Assistant Professor, Music  
B.A., M.M., California State University, Sacramento

Suzanne Davenport  
Professor/Coordinator, Distance Learning  
B.A., California State University, Chico; M.A., Goddard College; M.S. California State University, East Bay

Vicki Day  
Professor, Mathematics  
B.S., Washington State University; M.A.T., University of California, Davis

Dr. Michael Deaver  
Professor, Political Science  
B.A., University of California, Los Angeles; M.A., George Washington University; Ph.D., New York University

Scott Decker  
Professor, Athletics/Health Education/Physical Education/Recreation Management  
B.A., University of California, Davis; M.A., United States Sports Academy

Frank L. DeCourten  
Professor, Earth Science  
B.S., M.S., University of California, Riverside; Graduate Study, University of Utah, University of Colorado, California State University, Chico

Daniel H. DeFoe  
Professor, History  
B.A., M.A., California State University, Sacramento; Graduate Study, University of California, Davis

Michael R. Dobeck  
Professor, Computer Science  
Claremont Men’s College, B.S., California State University, Sacramento; Graduate Study, California State University, Sacramento, George Washington University

Holly Dodson  
Professor, Earth Science  
B.S., University of California, Riverside; M.A., University of California, Santa Barbara

Dr. Cynthia Y. Martinez Dunn  
Professor, Business/Computer Information Systems  
B.S., University of New Mexico; M.A., San Francisco State University; Ed.D., University of Southern California

Dr. David Dunn  
Professor, Astronomy  
B.S., University of California, Davis; M.S., Ph.D., University of Iowa

Debbie Eastman  
Professor, Human Development & Family  
B.S., University of California, Davis; M.A., Washington State University

Ed Eaton  
Professor, Athletics/Health Education/Physical Education/Recreation Management  
B.S., M.A.T., San Jose State University

Carol Eisenhower  
Professor, English  
B.A., University of California, Los Angeles; M.A., California State University, Sacramento

Dr. Brigitte Elder  
Professor, Psychology  
B.A., University of California, Los Angeles; M.S., Ph.D., University of California, Davis

P. J. Elson  
Professor, Computer Information Systems  
B.A., California State University, Chico; M.S., California State University, Sacramento

Carla Epting-Davis  
Professor, Counseling  
B.A., M.S., University of New York at Albany

Beth Ervin  
Professor, English  
B.A., San Diego State University; M.A., San Francisco State University

Barbara Erysian  
Professor, Mathematics  
B.S., California State University, Chico; M.S., University of Oregon

Heather Eubanks  
Assistant Professor, Athletics/Health Education/Physical Education/Recreation Management  
B.A., California Lutheran University; M.A., Azusa Pacific University

Dr. Barbara L. Fairchild  
Professor, History  
B.A., Raymond College; University of Pacific; Ph.D., Syracuse University

Elena Farrelly  
Professor, Counseling  
B.A., M.S., State University of New York at Albany

Marlene S. Feldscher  
Professor, Nursing  
R.N., Rockland State Hospital School of Nursing; B.S.N., Dominican College of Blauvelt; M.S.N., University of California, San Francisco

Thomas Fillebrown  
Professor, Applied Art & Design  
B.A., Humboldt State University; M.A., Montana State University

Ruth Flores  
Professor, Extended Opportunity Programs and Services Counseling  
B.A., M.S., California State University, Sacramento
Dr. Jane Haproff  
Professor, Philosophy/Humanities  
B.A., California State University, San Bernardino;  
Ph.D., University of California, Riverside

Lynn Hargrove  
Professor, Mathematics  
B.S., University of Houston; M.A., California State University, Sacramento

Wende Hargrove  
Professor/Coordinator, Health Services  
B.S.N., Humboldt State University; M.S.N., California State University, Sacramento; F.N.P., University of California, Davis

Dr. Donald Harris  
Professor, Physics/Engineering  
B.S., Ph.D., Ohio State University

Lynn Harrison Benavidez  
Assistant Professor, Mathematics  
B.A., University of California, San Diego; M.S., Washington State University

Kent Fortin  
Professor, English  
B.A., Western Washington University; M.F.A., University of Washington

Kaye Foster  
Professor, English as a Second Language  
B.A. Pitzer College; M.A., Monterey Institute of International Studies

John Christopher Fusano  
Professor, Athletics/Health Education/Physical Education/Recreation Management  
B.A., California State University, Sacramento;  
M.A., St. Mary’s College

Pamela Gamel  
Professor, Chemistry  
B.S., University of California, Davis; M.S., University of California, San Francisco

Dr. Laurel Gardner  
Professor, English  
A.B., Stanford University; M.A., San Jose State University;  
Ph.D., University of South Carolina

Kristine Gilbert  
Professor, Environmental Studies & Sustainability  
B.A., University of California, Davis; M.S., California State University, Chico

Steven D. Gillette  
Assistant Professor, Mechatronics  
A.A., College of the Redwoods; A.A., Sierra College; B.S., California State University, Sacramento; M.S., California State University, Northridge

Dr. Jason R. Giuliani  
Professor, Chemistry  
B.S., California State University, Chico; Ph.D., University of California, Davis

Roz Goldberg  
Professor, Athletics/Health Education/Physical Education/Recreation Management  
B.A., California State University, Northridge; M.A., Humboldt State University

Brian Gosney  
Assistant Professor, Counseling  
B.S., M.A., California Polytechnic State University, San Luis Obispo

Rene Gottwig  
Professor, Mathematics  
B.A., Pacific Lutheran University; M.S., California State University, Sacramento

Rebecca Gregg  
Professor, Photography/Applied Art & Design  
B.S., University of Texas; M.S., California State University, Los Angeles

Tim Haenny  
Professor/Coordinator, Campus Life  
A.A., Sierra College; B.A., M.A., California Polytechnic State University, San Luis Obispo

Michael F. Halbern  
Professor, Mechatronics  
B.A., M.A., California State University, Long Beach

Debra Hammond  
Professor, Drama  
B.A., California State University, Sacramento;  
M.F.A., University of California, Los Angeles

Dr. Winsome Jackson  
Professor, Political Science  
B.A., University of Vermont; M.P.A. Suffolk University;  
Ed.D., University of San Francisco

Todd A. Jensen  
Professor, Business  
B.S., California State University, Chico; M.B.A. University of Oregon;  
Certified Public Accountant

Kenneth G. Johnson  
Professor, Mathematics  
B.A., Graduate Study, University of California, Santa Barbara;  
M.A., University of California, Davis

Michelle Johnson  
Professor, English  
B.A., M.A., California State University, Sacramento
Kristen Lopez  
Professor, Counseling  
B.A., University of California, Los Angeles; M.S., California State University, Sacramento

Patricia Lord  
Professor, English  
B.A., M.A., California State University, Chico

Katherine Lucero  
Professor, Mathematics  
B.S., M.S., California Polytechnic State University, San Luis Obispo

Susan Lucyga  
Professor, English  
B.A., University of Hawaii; M.A., Old Dominion University

Michelle S. Macfarlane  
Professor, Agriculture  
B.S., California State University, Chico; M.S., University of California, Davis

Paul Macias  
Professor, English  
B.A., University of Montana; M.A., California State University, Sacramento

Terri Maddux  
Professor, Counseling  
B.A., California State University, Sacramento; M.A., Chapman University

Christine Magnani  
Assistant Professor, Business  
B.A., California State University, Sacramento; M.A., Chapman University, Orange; M.A., University of Nebraska, Lincoln

Vernon Martin  
Professor, Philosophy  
B.A., University of California, Santa Cruz; M.A., University of North Texas

Shawna Martinez  
Professor, Biological Sciences  
B.S., University of California, Davis; M.S., California State University, Sacramento

Nancy Martinis  
Professor, Counseling  
B.A., California State University, Sacramento; M.S., National University

Sandra J. McDonald  
Professor, Social Science  
B.S., Tennessee State University; M.S., Vanderbilt University

Greg McLaughlin  
Professor, Music  
B.M., M.A., California State University, Sacramento

Lynnette Medeiros  
Professor, History  
B.A., M.A., California State University, Sacramento

Jennifer Molina-Stidger  
Professor, Anthropology  
B.A., University of California, Davis; M.A., University of New Mexico

Sandra Lee Montgomery  
Professor, Library Science  
B.A., University of Nevada, Reno; M.L.S., Brigham Young University; Graduate Study, Klagenfurt Paedagogische Institut
Mary G. Moon  
Professor, Counseling  
B.A., University of California, Davis; M.S., California State University, Sacramento  

Michele Morgan  
Assistant Professor, Mathematics  
B.S., California Polytechnic State University, San Luis Obispo; M.A., San Francisco State University  

Catherine J. Morris  
Professor, Counseling  
B.A., M.A., California State University, Sacramento  

Dr. Mithia Mukutmoni  
Professor, Nutrition & Food Science  
B.S., University of California, Irvine; Ph.D., University of California, Davis  

Keri Muma  
Professor, Biological Sciences  
B.S., M.S., University of the Pacific  

Sandra M. A. Muraki  
Professor, Counseling  
B.A., University of California, Los Angeles; M.A., California State University, Northridge  

Brandie Murrish  
Professor, Athletics/Health Education/Physical Education/Recreation Management  
B.S., California Lutheran University; M.S., California State University, Northridge; M.Ed., Grand Canyon University  

Dr. Aimee Myers  
Professor, History  
B.A., M.A., Ph.D., University of California, Riverside  

Cliff Myers  
Professor, Mathematics  
B.S., M.S., Portland State University  

Dr. Paul J. Neal  
Professor, Counseling/Assessment  
B.S., Xavier University; M.A., National University; Ed.D., University of La Verne  

Vera Nelson  
Assistant Professor, Athletics/Health Education/Physical Education/Recreation Management  
B.A., California Polytechnic State University, San Luis Obispo; M.S., California State University, Sacramento  

Barbara J. Nelson-Burns  
Professor, English  
B.A., M.F.A., Arizona State University  

Andrea Neptune  
Professor, English  
B.A., M.A., California State University, Sacramento; M.A., California State University, Dominguez Hills  

Sabrina Newsome  
Professor, Mathematics  
A.A., Napa Valley College; B.S., M.A.T., University of California, Davis  

Annette Nylander  
Professor, Computer Information Systems  
A.S., Sierra College; B.A., The Union Institute; M.B.A., DeVry University, Keller Graduate School of Management  

Casey O’Connor  
Professor, Art  
B.F.A., San Francisco Art Institute; M.F.A., New York State College of Ceramics at Alfred University  

Brook Oliver  
Professor, Counseling  
B.A., California State Polytechnic University, San Luis Obispo; M.S., California State University, Hayward  

Rebecca Ornelaz Ortega  
Professor, Counseling  
B.A., M.A., San Jose State University
Dr. Reyes Ortega  
Professor, Counseling  
B.A., M.A., M.A., San Jose State University; Ph.D., University of Nevada, Reno

Tony Osladil  
Professor, Mechatronics  
B.S.E.E., University of Detroit

Mary Beth Pattengale  
Professor, Mathematics  
B.S., M.S., California Polytechnic State University, San Luis Obispo

Philip Pattengale  
Professor, Engineering  
A.A., Fresno City College; B.S., California Polytechnic State University, San Luis Obispo; M.S., California State University, Sacramento

Robin Persiani  
Professor, English as a Second Language  
B.A., University of California, Santa Barbara; M.A., Northern Arizona University

Laurie S. Pieracci  
Professor, Mathematics  
Sierra College; B.A., M.S., California State University, Sacramento

Dr. Sigismund Pikul  
Professor, Biological Sciences  
B.S., M.D., University of California, Davis

Dr. Warren Place  
Assistant Professor, Biological Sciences  
B.S., Humboldt State University; Ph.D., University of California, Davis

Melissa Prinzing  
Professor, Computer Information Systems  
B.S., M.B.A., California Polytechnic State University, San Luis Obispo

Sabina Privett-Pokorney  
Professor, Nursing  
F.N.P., University of California, Davis; M.S., University of Phoenix

Dale Quadros  
Professor, Counseling  
B.S., M.S., California State University, Sacramento

Janet Quinlan  
Professor, Human Development & Family  
B.A., Arizona State University; M.A., California State University, Sacramento

Rebecca Quinn  
Assistant Professor, English  
B.A., University of Massachusetts; M.A., University of New Hampshire; M.Phil., City University of New York

Jill Rafael  
Professor, Mathematics  
B.S., M.S., University of Calgary

Thomas Read  
Professor, Business  
B.S., University of California, Berkeley; M.B.A., University of California, Los Angeles

Kimberly L. Reina  
Professor, English  
B.A., University of Southern California; M.A., University of California, Santa Cruz; Graduate Study, University of California, Berkeley

Dr. Barry Rice  
Professor, Astronomy  
B.S., Rensselaer Polytechnic Institute; Ph.D., University of Arizona

Natalie Rishe  
Professor, Applied Art and Design  
B.F.A., University of Nevada, Reno; M.F.A., University of California, Davis

Janet Riswold  
Assistant Professor/Coordinator, Tutor Center  
B.A., San Jose State University; M.L.I.S., University of California, Berkeley

Jason Roberts  
Professor, English  
B.A., California State University, Long Beach; M.A., University of Tulsa

Lisa Rochford  
Professor, English  
B.A., M.A., San Francisco State University

Robert Roden  
Assistant Professor, English  
B.A., M.F.A., California State University, Long Beach

Christine Sabin  
Professor, Spanish  
B.A., University of Delaware; M.A., California State University, Sacramento

Alison R. Salome  
Professor, Drafting and Engineering Support  
A.A., Sierra College; California State University, Sacramento; California State University, Stanislaus

Patricia Saulsbury  
Professor, Library and Information Science  
B.A., University of California, Santa Cruz; M.L.I.S., San Jose State University

Jessica Schamber  
Professor, English as a Second Language  
B.A., California State University, Chico; M.A., California State University, Sacramento

Megan Seely  
Professor, Sociology  
B.A., California State University, Chico; M.A., California State University, Sacramento

Dr. Aviva Shackell  
Professor, Physics  
B.S., University of California, Santa Barbara; Ph.D., University of California, Los Angeles

Martine Shelley  
Professor, English  
B.S., University of Oregon; M.S., San Francisco State University

Dr. Rebecca J. Siemers  
Professor, Mathematics  
B.S., B.S., Iowa State University; M.S., Stanford University; Ph.D., University of California, Davis

Carol Silvia  
Professor, Human Development & Family  
B.A., M.A., California State University, Sacramento

David B. Sinclair  
Assistant Professor, Health Sciences  
A.A., Sierra College; B.S., M.P.A., University of San Francisco

Christina Sixt  
Professor, Library Science  
B.A., California State University, Sacramento; M.L.I.S., University of California, Los Angeles
Dr. Jennifer Skillen  
Professor, Biological Sciences  
B.S., University of California, Davis; Ph.D., Michigan State University

Donna Smith  
Professor, Mathematics  
B.A., Pomona College; M.A., University of California, Berkeley

Stephen R. Smith  
Professor, Automotive Technology  
A.A., Contra Costa College; California State University, Sacramento;  
B.A., M.A., California State University, Chico

Randy Snook  
Professor, Photography/Applied Art & Design  
B.A., California State University, Sacramento;  
M.F.A., Art Institute of Boston

Jeanne Rachelle Soles  
Assistant Professor, Psychology  
B.A., M.A., California State University, Fresno

Blair H. Spaulding  
Professor, Administration of Justice  
B.A., University of California, Santa Barbara; Graduate Study,  
Westmont College

Stan Spencer  
Professor, Economics  
A.A., A.S., Sierra College; B.A., M.A., California State University,  
Sacramento

Dr. Mark F. Springsteel  
Professor, Chemistry  
Orange Coast College; B.S., California State University, Fullerton;  
Ph.D., University of California, Davis

Dr. Jane Stave Viemeister  
Professor, Music  
B.M., Cornell University; M.A., M.F.A., Ph.D., University of Iowa

James M. Sullivan  
Professor, Mathematics  
B.S., M.S., Graduate Study, University of California, Davis

Dr. Kathleen A. Taylor  
Professor, Psychology/Women & Gender Studies  
B.A., M.A., California State University, Sacramento;  
M.A., Ph.D., University of California, Davis

Johnnie Terry  
Professor, Philosophy/Humanities  
B.A., M.A., San Diego State University

Ishtar Thomas  
Assistant Professor, Biological Sciences  
B.A., M.S., California State University, Sacramento

Jeff Tisdel  
Professor, Athletics/Health Education/Physical Education/  
Recreation Management  
B.S., University of Nevada, Reno

Sam Tubiolo  
Assistant Professor, Art  
B.F.A., University of Rochester; M.A., M.F.A., University of New  
Mexico

William D. Vanderbout  
Professor, Chemistry  
Diablo Valley College; B.S., University of California, Davis; M.S.,  
California State University, Sacramento; Graduate Study, California  
State College, Bakersfield, California State University, Sacramento

Dr. Jennifer Skillen  
Professor, Biological Sciences  
B.S., University of California, Davis; Ph.D., Michigan State University

Soni Verma  
Professor, Psychology  
B.A., Lady Shri Ram College for Women; M.A., Delhi University;  
M.Phil., National Institute of Mental Health & Neurosciences

Lynette Vrooman  
Assistant Professor, English  
B.A., M.A., California State University, Sacramento

Walter Walczykowski  
Professor, Business  
B.S., M.B.A., San Jose State University; Certified Public Accountant

Dr. Sasha M. Warren  
Professor, Biological Sciences  
A.A., Chabot College; B.S., Humboldt State University;  
Ph.D., University of California, Davis

William Wenzel  
Assistant Professor, Welding Technology  
A.A., American River College

Dr. Margaret Williams  
Professor, Communications Studies  
B.A., M.A., California State University, Sacramento; Ed.D., University  
of California, Davis

Nicholas S. Willick  
Professor/Coordinator, Administration of Justice  
B.A., California State University, Sacramento; M.P.A., Golden Gate  
University

Robert Willson  
Professor, Athletics/Health Education/Physical Education/  
Recreation Management  
A.A., Laney College; B.A., Sonoma State University;  
M.A., St. Mary’s College

Alexander Wong  
Professor, Automotive Technology/Engineering  
A.A., San Francisco City College; B.S., San Jose State University;  
M.S., P.E., University of Cincinnati

Ian Wu  
Professor, Mathematics  
B.S., California State University, Chico; M.A., California State  
University, Sacramento

Dr. Dean Yoshizumi  
Professor, Psychology  
B.A., California State University, Fullerton; M.A., California State Uni-  
versity, Los Angeles; Ph.D., University of Iowa

Dr. Nicholas A. Zoffel  
Assistant Professor, Communication Studies  
A.A., Grossmont College; B.A., M.A., San Jose State University;  
Ph.D., Bowling Green University

Dr. Jennifer Skillen  
Professor, Biological Sciences  
B.S., University of California, Davis; Ph.D., Michigan State University

Soni Verma  
Professor, Psychology  
B.A., Lady Shri Ram College for Women; M.A., Delhi University;  
M.Phil., National Institute of Mental Health & Neurosciences
Classified, Confidential and Supervisory Staff

Cameron Abbott
Human Resources

Judy Aihquist
Finance & Administration

Emily Albaugh
Counseling

Bonnie Amaro
Financial Aid

D’Ambra Amaro-Mendoza
Admissions & Records

Kelly Angulo
Administrative Services, SC-NCC

Kristine Armstrong
Financial Aid

Julia Arreguy
Information & Instructional Technology

Jeff Atkinson
Learning Resource Center

Elaine Atnip
Biological Sciences

Satyendra Attota
Information & Instructional Technology

Dianne Babb
Business, Applied Academics, & Physical Education

John Baca
Applied Art & Design/Art, SC-NCC

Ricardo Bajamundi
Information & Instructional Technology

Janice Barney
Business, Applied Academics, & Physical Education

Dana Baskett
Facilities Maintenance, SC-NCC

Joan Basque
Staff Development

Sara Basque
Fire Technology/Health Sciences, SC-RGC

Robert Bateman
Information & Instructional Technology

Sharon Beachley
Health Services

Chris Benn
Learning Resource Center

Scott Berry
Welding Technology

Cynthia Birdsong
Distance Learning

Jeannette Bischoff
President’s Office

Catherine Burton
Accounting

Nikolay Bobyk
Financial Aid

Darrell Bradford
Grounds Maintenance, SC-NCC

Donna Brazil-Bloche
Campus Operations, SC-NCC

Karen Bridges
Human Resources

George Bromm
Earth Science

Casey Brown
Chemistry

Daniel Brown
Energy Maintenance

Greg Brown
Reprographics

Ron Brown
Reprographics

Kelly Bruce
Information & Instructional Technology

Robert Buderer
Automotive Technology

Andrea Butler
Biological Sciences, SC-NCC

Christine Calvert
Admissions & Records

Tosh Campanella
Marketing/Public Relations

Aracely Canon
Assessment

Rikki Cartwright
Human Resources

Angela Casey
Human Resources

Kerrie Cassidy
Marketing/Public Relations

Eloisa Castro
Custodial

Craig Caughlin
Information & Instructional Technology

Judy Chew
Information & Instructional Technology

Ernest Chiappari
Audio Visual, SC-NCC

Dade Clark
Information & Instructional Technology

Aimee Colvin
Distance Learning

Michael Conley
Custodial

Sonni Cooper
Writing Center

Olivia Correia
Custodial

Joe Corro
Custodial

Michael Cory
Facilities Maintenance, SC-TTC

Cary Cose
Facilities Maintenance, SC-TTC

Kourtney Crandell
Finance

Christina Culley
Human Resources

Stephen Daddona
Information & Instructional Technology

Dianne Dakis
Payroll

Debbie Davis
Admissions & Records, SC-NCC

Spencer Davis
General Services

Chris Davison
Grounds Maintenance

Robert Dean
Information & Instructional Technology

Christopher Derks
Learning Resource Center

Ginger Dial
Administrative Services, SC-NCC

Sheila Dobbin
Career & Transfer Connections

Ninette Dollesin
Instruction Office

Laurie Donahue
Finance & Administration

Greg Dorando
Information & Instructional Technology

Laura Doty
Facilities and Construction

Michael Echavarria
Custodial

Ruth Echavarria
Business, Applied Academics, & Physical Education

Lina Fedorchuk
CalWORKs

Caroline Fernandes
Information & Instructional Technology

Matt Fertel
Applied Art & Design/Photography

Linda Fisher
Accounting

Dawn Flannery
Business, Applied Academics, & Physical Education

Lorraine Flynn
Writing Center

Terry Gallegos
Counseling

Wilhemina Garcia
Learning Center

Elizabeth Garosi
Assessment

Sydney Gatson
TRIO

Anthony Gill
Applied Art & Design/Art

Aleksandr Gladysz
Custodial

Michael Glashan
Information & Instructional Technology

Yvonne Glashan
Financial Aid

Arlene Goff
Purchasing

Ryan Goodpastor
Residence Life

Sandra Guarcello
Learning Resource Center
<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Becky Poland</td>
<td>Instruction Office</td>
</tr>
<tr>
<td>Chris Poling</td>
<td>Distance Learning</td>
</tr>
<tr>
<td>Charles Polisher</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>Shilpa Pothula</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>Leona Powell</td>
<td>Custodial, SC-NCC</td>
</tr>
<tr>
<td>Doreen Prado</td>
<td>Financial Aid</td>
</tr>
<tr>
<td>David Prather</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>Walter Pro</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Kristie Purdy</td>
<td>Marketing/Public Relations</td>
</tr>
<tr>
<td>Michael Price</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>Allen Race</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>Becky Ragsac</td>
<td>Admissions &amp; Records, SC-NCC</td>
</tr>
<tr>
<td>Grady Raley</td>
<td>Custodial</td>
</tr>
<tr>
<td>James Razavi</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Vladimir Rebchenko</td>
<td>Custodial</td>
</tr>
<tr>
<td>Karen Reeves</td>
<td>Admissions &amp; Records, SC-NCC</td>
</tr>
<tr>
<td>Erica Reich-Zuazo</td>
<td>Admissions &amp; Records/Financial Aid, SC-NCC</td>
</tr>
<tr>
<td>Margaret Reineking</td>
<td>Sciences &amp; Mathematics</td>
</tr>
<tr>
<td>Annette Richards</td>
<td>Mail Services</td>
</tr>
<tr>
<td>Nicolette Riley</td>
<td>Admissions &amp; Records</td>
</tr>
<tr>
<td>Pam Robertson</td>
<td>Bursar's Office</td>
</tr>
<tr>
<td>Kara Rodriguez</td>
<td>Admissions &amp; Records</td>
</tr>
<tr>
<td>William Rogers</td>
<td>Plant Operations</td>
</tr>
<tr>
<td>Jeanne Guerin</td>
<td>Writing Center</td>
</tr>
<tr>
<td>Gayle Hage</td>
<td>Community Education, SC-RGC</td>
</tr>
<tr>
<td>Christopher Hall</td>
<td>Writing Center, SC-NCC</td>
</tr>
<tr>
<td>Jene’ Hallam</td>
<td>President’s Office</td>
</tr>
<tr>
<td>Jon Hamblen</td>
<td>Parking, Security, and Residence Life</td>
</tr>
<tr>
<td>Adele Hamlett</td>
<td>Community Education, SC-RGC</td>
</tr>
<tr>
<td>Carrol Hanawalt</td>
<td>Admissions &amp; Records</td>
</tr>
<tr>
<td>Cheryl Harris</td>
<td>Nursing</td>
</tr>
<tr>
<td>Laura Harris</td>
<td>Sciences &amp; Mathematics</td>
</tr>
<tr>
<td>Matthew Harrison</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Carol Hartzell</td>
<td>Campus Life</td>
</tr>
<tr>
<td>Lawrence Hayward</td>
<td>Learning Center</td>
</tr>
<tr>
<td>John Healy</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>William Hemphill</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>Julio Hernandez</td>
<td>Custodial</td>
</tr>
<tr>
<td>Maria Hernandez</td>
<td>English as a Second Language</td>
</tr>
<tr>
<td>Kerri Hester</td>
<td>Finance</td>
</tr>
<tr>
<td>Patricia Hill</td>
<td>Financial Aid</td>
</tr>
<tr>
<td>Margo Hollwager</td>
<td>Counseling</td>
</tr>
<tr>
<td>Michael Huss</td>
<td>Automotive Technology</td>
</tr>
<tr>
<td>Colin Irwin</td>
<td>Facilities and Operations</td>
</tr>
<tr>
<td>Brandon Johnson</td>
<td>Physical Education and Athletics</td>
</tr>
<tr>
<td>Mary Ann Jones</td>
<td>Health Services</td>
</tr>
<tr>
<td>Katie Juras</td>
<td>Liberal Arts</td>
</tr>
<tr>
<td>Sue Keller</td>
<td>Business, Applied Academics, &amp; Physical Education</td>
</tr>
<tr>
<td>Craig Kelly</td>
<td>Research &amp; Planning</td>
</tr>
<tr>
<td>Tammy Kenber</td>
<td>Human Resources</td>
</tr>
<tr>
<td>Deborah Kenitzer</td>
<td>Extended Opportunity Programs &amp; Services, SC-NCC</td>
</tr>
<tr>
<td>Aleksandr Kerdey</td>
<td>Custodial</td>
</tr>
<tr>
<td>Sergey Khudyakov</td>
<td>Custodial</td>
</tr>
<tr>
<td>Ryan Kyle</td>
<td>Custodial</td>
</tr>
<tr>
<td>Tim Kyle</td>
<td>Facilities Maintenance</td>
</tr>
<tr>
<td>Thomasina Lane</td>
<td>Admissions &amp; Records</td>
</tr>
<tr>
<td>Mark Laws</td>
<td>Agriculture/Biological Sciences</td>
</tr>
<tr>
<td>Joann Leal</td>
<td>Student Services</td>
</tr>
<tr>
<td>Jeff Lloyd</td>
<td>Transportation</td>
</tr>
<tr>
<td>Dena Lockwood</td>
<td>Financial Aid</td>
</tr>
<tr>
<td>Virginia Loder</td>
<td>Business, Applied Academics, &amp; Physical Education</td>
</tr>
<tr>
<td>Alysia Lopez</td>
<td>Mechatronics</td>
</tr>
<tr>
<td>Sharon Lucas</td>
<td>Payroll</td>
</tr>
<tr>
<td>Sharon Ludden</td>
<td>Disabled Student Services</td>
</tr>
<tr>
<td>Julia Maak</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Karen Mahoney</td>
<td>Student Services</td>
</tr>
<tr>
<td>Thomas Makimoto</td>
<td>Grounds Maintenance</td>
</tr>
<tr>
<td>Debra Mann</td>
<td>Accounts Payable</td>
</tr>
<tr>
<td>Gabriel Mariscal</td>
<td>Grounds Maintenance</td>
</tr>
<tr>
<td>Kathryn Martinson</td>
<td>Payroll</td>
</tr>
<tr>
<td>Margaret Marvin</td>
<td>Writing Center</td>
</tr>
<tr>
<td>Karin McGuire</td>
<td>Admissions &amp; Records</td>
</tr>
<tr>
<td>Roberta McKinney</td>
<td>Instruction Office</td>
</tr>
<tr>
<td>Rick McMurtry</td>
<td>Energy Maintenance</td>
</tr>
<tr>
<td>Deborah Meadows</td>
<td>Counseling, SC-NCC</td>
</tr>
<tr>
<td>Amanda Mellett</td>
<td>Facilities/Operations</td>
</tr>
<tr>
<td>Bobby Merritt</td>
<td>Custodial</td>
</tr>
<tr>
<td>Susanne Michaels</td>
<td>Marketing/Public Relations</td>
</tr>
<tr>
<td>Patricia Miller</td>
<td>Liberal Arts</td>
</tr>
<tr>
<td>David Miramontes</td>
<td>Admission &amp; Records</td>
</tr>
<tr>
<td>Quinones</td>
<td>Admissions &amp; Records</td>
</tr>
<tr>
<td>Ron Miyata</td>
<td>Grounds Maintenance</td>
</tr>
<tr>
<td>Gail Modder</td>
<td>Admissions &amp; Records</td>
</tr>
<tr>
<td>Guadalupe Montez</td>
<td>Custodial</td>
</tr>
<tr>
<td>Gary Moser</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>Anna Mostafavi</td>
<td>Accounting</td>
</tr>
<tr>
<td>Denise Nichols</td>
<td>Extended Opportunity Programs &amp; Services</td>
</tr>
<tr>
<td>Rod Nix</td>
<td>Learning Resource Center</td>
</tr>
<tr>
<td>John Nunes</td>
<td>Facilities Maintenance</td>
</tr>
<tr>
<td>Joy Pelton</td>
<td>Facilities/Operations</td>
</tr>
<tr>
<td>Carol Pepper-Kittredge</td>
<td>Center for Applied Competitive Technologies</td>
</tr>
<tr>
<td>Debbie Phipps</td>
<td>Information &amp; Instructional Technology</td>
</tr>
<tr>
<td>Dennese Phleger</td>
<td>Accounts Payable</td>
</tr>
<tr>
<td>Scott Pisik</td>
<td>Warehouse</td>
</tr>
<tr>
<td>Anna Platz</td>
<td>Bursar’s Office</td>
</tr>
<tr>
<td>David Poirier</td>
<td>Information &amp; Instructional Technology, SC-NCC</td>
</tr>
</tbody>
</table>

**Author's Note:** The table lists names and positions of faculty and staff members at Sierra College, along with their respective departments. This information is derived from the Sierra College Catalog 2013–2014.
Blake Rood  
Disabled Student Services/Veterans

Kevin Ross  
Custodial

Julie Rucker  
Human Resources

Dan Rusk  
Information & Instructional Technology

Jean Rust  
Liberal Arts

Margaret Sauer  
Business, Applied Academics, & Physical Education

Carolyn Schwenk  
Accounting

Thad Selmants  
Learning Resource Center

Yalan Shang  
Physics

Tracy Shields  
Instruction Office

Brandon Silveira  
Admissions & Records

Carolyn Simmons  
Disabled Student Services

Ken Simmons  
Facilities Maintenance

Lori Sinclair  
Fire Technology/Health Sciences, SC-RGC

Oleg Slabchak  
Transportation

Nancy Smith  
Physical Education and Athletics

Shari Smith  
Osher Lifelong Learning Institute

Timothy Smith  
Information & Instructional Technology

Scott Snyder  
Information & Instructional Technology

John Souza  
Construction Technology

Jessica Sparling  
Parking & Security

Peter Spencer  
Learning Resource Center

Elaine Sturgell  
Mathematics

Earl Syversen  
Astronomy

Jerone Tamondong  
Grounds Maintenance

Laurel Thiers  
Research & Planning

Melinda Thomas  
Library, SC-NCC

Patrick Thrasher  
Theater Production

Thor Tivol  
Theater Production

Diane Tomasello  
Student Services, SC-TTC

Tim Trujillo  
Physical Education & Athletics

Danita Tucker  
Parking & Security

Alistair Turner  
Outreach/International Students

Li Yin Twang  
Admissions & Records

Greg Van DeBogart  
Information & Instructional Technology

Corrine Vieira  
Admissions & Records

Richard Vincent  
Facilities Maintenance

Maria Von Der Ahe  
Instructional Assistance, SC-TTC

Mark Wagner  
Reprographics

Peggy Wallace  
Student Services, SC-TTC

Judy Wasley  
Admissions & Records

Cody Watson  
Learning Center

Patty White  
Financial Aid

Trudie Wiggins  
Information & Instructional Technology

Paul Wiley  
Telecommunications Systems

Linda Williams  
Financial Aid

John Willoughby  
Information & Instructional Technology

Alan Willsmore  
Custodial
Emeritus Faculty and Administration

Susan L. Aanes
Extended Opportunity Programs & Services

Jimmy C. Adamson
Art

Dr. Henry K. Akana, Jr.
Counseling

Neal Albee
Executive Dean, Nevada County Campus

Richard T. Alman
Sociology

Gerrold W. Anderson
Design Drafting

Dr. Gerald C. Angove
President & District Superintendent

Nancy Allsup
Learning Disabilities

Donna M. Archer
Nursing

David Auslam
Economics

Linda Atoms
English

Linda Banta
Biological Sciences

Barbara Battenberg
Communication Studies/English

Dr. David Beesley
History

William C. Belvel
Mathematics

Roland A. Berghold
Biological Sciences

Nancy L. Berman
Dean, Business & Technology

Pauliene Bond
Home Economics

Noreen A. Bothwell
Assistant Dean, Nursing

Kevin Bray
Dean, Planning, Research & Resource Development

Paul R. Brewer
Design Drafting/Engineering

Bright Rope
(James Thomas)
English

Bruce W. Broadwell
Computer Science

Carol J. Brookens
Nursing

Ronald K. Bryant
Director of District Planning

Dr. Donald A. Brophy
Executive Dean, Research & Planning

Dorothy M. Brown
Art

Clifford Burns
Computer Science

Sheila R. Butler
Counseling

Dr. William Carmody
Music

Craig D. Chamberlain
Construction Technology

Rex H. Chappell
Physical Education

Dr. Leo E. Chavez
Superintendent/President

Michael P. Claytor
Anthropology

Robert H. Corbett
Psychology

Donald Cosper
Sociology

John R. Creelman
Economics/History

Arthur P. Curry
Director of Economic Development

D. Charles Dailey
Biological Sciences

Paul Dawley
Construction Technology

Barbara T. Dawson
English/Skill Development

John W. DeLury
Vice President for Finance & Administration

Clare Dendinger
Nutrition & Food Science

Michelle M. DeVol
Staff Development

David D. Dickson
English/German

Eileen D. Dickson
Counseling

Ernest A. Driscoll
Administration of Justice

Robert H. Duke
Earth Science

Dr. Ralph D. Eavenson
English

Don C. Edgar
Health/Physical Education

Perry Edwards
Computer Science

Susan Eiland-Rickman
Learning Disabilities

Richard L. Elliott
Counseling

Roy T. Elliott
Business/Computer Information Systems

C. David Emerson
Counseling

Fara Eskandari
Mathematics

Lewis Fellows
Dean, Physical Education & Athletics

Charles E. Fitzpatrick
Physical Education/Special Education

Dr. James D. Furbee
English

Salvatore F. Gianna
Director of Computing & Information Services

Dr. Edward Gieszelmann
Mathematics

George Goto
Associate Dean, Physical Education & Athletics

Gary A. Guckel
Research & Planning

Betty Gudz
Spanish

Kaylene Hallberg
Dean, Student Services

Robert L. Hancock
Counseling

Dr. William T. Hardy
Psychology

Betty J. Hawkes
Counseling

Leslie D. Herrill
Chemistry

William W. Hill
Music

Dr. James R. Hirschinger
Dean, Student Development

Esther L. Hogans
Human Environmental Sciences

John P. Horrillo, Jr.
Physical Education

William H. Howarth
English

Steven L. Hunter
Computer Integrated Electronics

Garvin L. Jabusch
Construction Technology

Dr. Martin E. Jack, Jr.
Vice President for Educational Programs & Services

Dana Johnson
Nursing

Pamela Hunter Johnson
Applied Art & Design

Evan W. Jones
Physics

Gary S. Judd
Physical Education

Don M. Juergenson
Metals & Manufacturing Technology

Dr. Stephen A. Jung
Engineering Support Technology

William L. Kalina
Research & Resources

Roselene Kelley
Human Development

Steven Ledbetter
Automotive Technology

Kathleen Kolster
Nursing

Lawrence P. Lee
Mathematics

Neal Lemerise
Forestry

Karen M. Linde
Physical Education & Athletics

Marvin R. Linville
Automotive Technology

Bright Rope
(James Thomas)
Dr. Morgan Lynn  
Assistant Superintendent/  
Vice President, Educational  
Programs & Services

Leland E. Mansuetti  
Business

Richard S. Marasso  
Astronomy

Jacquelyne J. Marchi  
Extended Opportunity  
Programs & Services

Cynthia G. Mariano  
Extended Opportunity  
Programs & Services

Theresa C. Markovich  
School Nurse

Ronald M. Martinez  
Assistant Superintendent/  
Vice President, Human  
Resources

Dr. Larry Mather  
Mechatronics

Walter L. McCallum  
Chemistry

Dr. Patt McDermid  
English

Alfred J. McElroy  
Dean, Sciences &  
Mathematics

Joan C. McFarland  
History/Sociology

John F. McFarland  
History/Social Science

Diane McKnight  
Dean, Research and Planning

Joseph L. Medeiros  
Biological Sciences

Dr. Robert H. Meyer  
English/Humanities

Jack O. Moore  
Drafting Technology/  
Engineering

Barton E. Newlin  
Business

Les Olsen  
Counseling

Thomas C. Owens  
Computer Science

William C. Pannell  
Mathematics

Karen A. Parker  
Counseling

Clair R. Parsh  
Business/Mathematics

Sharon Peterson  
Assistant Dean, Community  
Education

Sara Pries  
Mathematics

Terry Prouty  
Learning Disabilities

Dr. Kevin M. Ramirez  
Superintendent/President

Roger V. Rasmussen  
Business

Ernest R. Riley  
Biological Sciences

Fernando Rodriguez  
Spanish

Valerie A. Rogers  
Counseling

F. Barton Ruud  
Counseling

Irene C. Sadler  
French

Dr. Jo Lynn Samuelson  
Political Science/Social Science

Marjorie L. Sanchez  
Director, Vocational Nursing

Lin Schiffner  
Counseling

Sandra Scott  
Director, Grant Development  
& Career Technical Education

Michael R. Sequeira  
Dean, Sciences and  
Mathematics

George S. Sessions  
Philosophy

Alan Shuttleworth  
English

Dr. Joel M. Siegel  
Mathematics

Vicki Skeels  
Counseling

Charles J. Snyder  
Marketing

Dr. Dolores E. Sorenson  
Business

Dr. Joan Spencer  
History/Social Science

John Sperry  
Engineering/Physics

Bonnie L. Stephens  
Business/Computer Informa- 
tion Systems

Joan C. Stewart  
Vocational Nursing

Burton W. Stokesbary  
Counseling

Denise J. Stone  
Learning Disabilities

Dr. Frank D. Strong  
Assistant Superintendent/  
Vice President for Finance &  
Administration

Jo A. Sumner  
Associate Dean, Curriculum &  
Instructional Support

Lenard E. Taylor  
Mathematics

Martin D. Taylor  
Computer Studies

Roger J. Tofft  
Physical Education

Tennis Tollefson  
Fire Technology

Susan Trant  
English as a Second  
Language

Bill M. Tsuji  
Dean, Liberal Arts

Jerry D. Van Rein  
Agriculture

John F. Volek  
Dean of Athletics

Sandi Lou Warren  
Physical Education

Frederick A. Weber  
Music

Keith L. Weidkamp  
Business

Margaret R. White  
Associate Dean, Nursing

Donald C. Whitehead  
Music

Elaine K. Whittlesy  
Mathematics

Edward C. Wicks  
Construction Technology

Larry C. Wight  
History/Political Science

Harriet S. Wilson  
Biological Sciences

Woodrow Wilson  
Director, District Planning

Richard F. Yoo  
Public Speaking
### Advisory Committees

#### Accounting
Dan Baker, Partner, Gallina LLP, Roseville  
Carey Buck, C.P.A., Trinity Fresh, Sacramento  
Vanessa Burke, C.P.A., Moss Adams LLP, Sacramento  
Chuck Gardner, Del Oro High School, Loomis  
Paul Hayes, Woodcreek High School, Roseville  
Sabrina Highy, C.P.A., Higby Tax, Loomis  
James Kim, SVP and CFO, Community 1st Bank, Auburn  
Jon Nexsen, Ernst & Young, Roseville  
Michelle Phillips, C.P.A., Roseville  
Steve Phillips, C.P.A., Auburn  
Dan Seiler, C.P.A., Ueltzen & Co., Sacramento  
Bruce W. Stephenson, Chairperson, C.P.A., Gallina, LLP, Roseville  
Dale Waldschmitt, Pacific Coast Companies, Inc., Rancho Cordova  
Mike Welty, C.P.A., Utomomy, Inc., Rocklin  
Peter Wiese, C.P.A., Crowe Horwath, LLP, Sacramento  
Sherri Yokomizo, Volcano Corp., Sacramento

#### Administration of Justice
Ed Bonner, Sheriff, Placer County, Auburn  
Michael Doane, Lieutenant, Roseville Police Department  
Angela Ford, District Attorney, Placer County  
John Foster, Police Chief, Grass Valley Police Department  
Suzanne Gazzaniga, Superior Court Judge, Placer County  
Missy Morris, Training Coordination, Roseville Police Department  
Greg Murphy, Lieutenant, University of California, Davis Police Department  
Forrest Richardson, Lieutenant, Rocklin Police Department  
Mario Rodriguez, Senior Consultant, POST  
Dan Ruden, Chief of Police, Lincoln Police Department  
John Ruffcorn, Chief of Police, Auburn Police Department  
Brian Vizzusi, Lieutenant, Galt Police Department  
Richard Ward (Retired), Captain, California Highway Patrol  
Jim Wickham, Police Chief, Nevada City Police Department

#### Agriculture
Cindy Fake, UCCE, Placer County  
Laura Goss, Agriculture Teacher, East Nicolaus High School  
John Inglett, Manager, Wester Tree Nursery, Oroville  
Roger Ingram, UCCE, Placer County  
Dan Kemp, Agriculture Teacher, Bear River High School, Grass Valley  
Dan Macon, Owner, Flying Mule Farms, Auburn  
John Nitta, Owner, High Ranch Nursery, Loomis  
Mike Trueblood, Agriculture Teacher, Lincoln High School  
Christine Turner, Retired Agriculture Commissioner, Placer County  
Josh Turner, Agriculture Commissioner, Placer County  
Barbara Vineyard, Former Sierra College Board Member, Rancher, Lincoln

#### Automotive Technology
Dave Burkhard, Instructor, San Juan High School  
Robert Butler, Owner, Pacific Auto, Auburn  
Bill Cardwell, Car Care Center, Sacramento  
Lynn Cardwell, Car Care Center, Sacramento  
Art Coppock (Retired), Snap-on Tools, Sacramento  
Vic Delius, Service Manager, Weaver Chevrolet, Alta  
Bill Foster (Retired), California Highway Patrol  
Ben French, American River College, Sacramento  
Bill Happ, Woodcreek High School, Roseville  
Steve Ledbetter, Emeritus Professor, Sierra College  
David Lewis, Engineer, Department of Consumer Affairs, Engineering and Technology Research, Sacramento  
Tom Ley, Service Manager, Future Nissan, Roseville  
Michelle Oberg, Bureau of Automotive Repair, Citrus Heights  
Dick Panciera, Service Manager (Retired), Reliable Pontiac and Cadillac, Roseville  
John Panelli (Retired), Sierra College Automotive, Colfax  
Alan Rowley, Technician, Monroe Transmission  
Scott Rustkauff, Owner, Back to Life Auto, Lincoln  
Greg Sahr, Technician, Duncan’s Auto Service  
John Scalaro, Snap-on Equipment  
Thomas Serpico, Service Manager, Future Nissan  
Vince Wisniewski, Snap-on Tools
Computer Information Systems
Jeff Green, Technical Operations Manager, Intuitive Networks, Inc., Rocklin
Walter Helm, Owner, Sperry Van Ness, Sacramento
Allen Liao, Account Manager, Cornerstone Technologies, San Jose
Srinivas Satyavarpu, Principal System Engineer, WhipTail Tech, Whippany, NJ
Michelle Ulrich, Owner, The Virtual Nation, Citrus Heights
Jacob Webb, Western Region Sales, WhipTail Tech, Whippany, NJ

Construction Technology
Mike Brown, Contractors State License Board
Joe Bean, Teichert Construction, Sacramento
Tim Ferris, Interior Wood Design, Inc., Auburn
Ed Jenkins, Placer County Building Department
David Martin, General Contractor, Folsom
Stuart Nemy, Owner, Nemy Quality Cabinets, Inc., Rancho Cordova
Marc Pohley, General Contractor, Auburn
Eric Reitzell, Reitzell Engineering, Rocklin
Ron Ridenoure, Homewood Lumber, Loomis
Steven Savage, Savage Millwork, Roseville

Disabled Students Programs and Services
Sharon Adams, Dean, Student Services, Sierra College
Scott Bramlett, DSPS Counselor, Sierra College
Elena Dal Favero, Placer Union High School District
Arleta Ham, Department of Rehabilitation
Gwen Joy, Assistant Professor, Learning Disabilities, Sierra College
Mark Kwoka, DSPS Counselor, Sierra College
Terry Lipper, Alta California Regional Center
Sharon Ludden, Student Services Technician, Sierra College
Terry Prouty, Emeritus Professor, Learning Disabilities, Sierra College
Cydney Rochford, Rocklin High School
Alan Shuttleworth, Emeritus Professor, English, Sierra College
Denise Stone, Emeritus Professor, Learning Disabilities, Sierra College
Barbara Watts, Roseville Joint Union High School District

Drafting and Engineering Support
J.T. Doupnik, Architect, Gary Doupnik Manufacturing, Loomis
Eric Driever, Architect, William Paddon Associates, Roseville
Pam Emrick, Designer, Pasco Scientific, Roseville
Terence J. Green, Architect, William Paddon Associates, Roseville
Philip Hawkins, Architect, PHA & Associates, Auburn
Anatole Hulewsky, Designer, ALH & Associates, Fair Oaks
Stephen M. Jung, Architect, Gordon Rogers & Company, Rocklin
Eric Kim, CAD Designer, Visual Enterprises, Citrus Heights
Michael Manasco, Designer, Stantec, Sacramento
John Masha, P.E., Civil Engineer, MJM Engineering Consultant, Folsom
Earl McGuire, Engineer, McGuire Engineering, Placerville
Michael Kent Murphy, AIA, Michael Kent Murphy Architect, Auburn
Floyd Riffey, Senior Designer, Aerojet—Tech Systems, Sacramento
Gordon Rogers, Architect, Gordon Rogers & Company, Rocklin
Christine Thompson, Designer, Lionakis Beaumont, Sacramento
Phil Titus, AIA, Rauschenbach Marveli Becker Architects, Sacramento
Marni Vincent, Design & Build Assistance, Colfax
Butch Webb, Centex Homes, Roseville

Early Childhood Education
Wendy Axford, Little Friends Preschool
Karen Davis-O’Hara, Professor, Child Development Department, California State University, Sacramento
Joy Geck, Sierra College State Preschool, Rocklin Campus
Catherine Goins, Administrator, Placer County Office of Education, Child Care Services
Tanya Hanrihan, Tech Prep Consultant
Susie Piette, Little Orchard Preschool, Rocklin
Josie Shrieve, Family Child Care Provider
Regina Swaney, Instructor, 49er ROP Careers with Children, Placer County
Vicky Treadway, Preschool Manager, KidzKount (Placer County Action Council)
**Engineering**
Roya Borman, SMUD, Sacramento
Don Carroll, Western Engineering Contractors, Loomis
Ronald Chiarami, Norris Electric, Auburn
Steve Culley, CalTrans, Auburn
Jeffrey Hahn, Covanta Energy, Lafayette
John Haskell, Western Engineering Contractors, Loomis
Tom Holdredge, Holdredge & Kull, Nevada City
B. George Kniazewycz, Renovare International, Inc., Alameda
Steve Leach, R.C.D. Engineering, North San Juan
Patrick Leonhardt, Energy Absorption Systems, Rocklin
Leo R. Martinez, Contractual Engineer, Grass Valley
Arthur Perkins, P.E., Consultant, Moraga
Steve Sarantopoulos, Cranmer Engineering, Grass Valley
Tom Tinucci, Wellhead Electric Company, Inc., Sacramento
Terence Vollrath, Consultant, Placerville
Brian Yeh, General Electric Company, Walnut Creek

**Extended Opportunity Programs and Services/Cooperative Agencies Resources for Education—EOPS/CARE**
Crystal Arnold, Employment Services Supervisor, Nevada County Department of Social Services
Lynn Davis, CalWORKs Counselor, Sierra College
Vivian Orcasitas Dillon, Summer Bridge Program Coordinator, California State University, Sacramento
Pat Eseaff, Dean, Student Services, Sierra College
Carla Epton-Davis, Counselor, Sierra College
Ruth Flores, EOPS Counselor, Sierra College
Kristina Gonzales, Student, Sierra College
Pat Hill, Financial Aid Technician, Sierra College
Susie Le, EOPS Counselor, Sierra College
Melissa Marcum, Programs Coordinator, Nevada County Foster Youth Services, Independent Living Program and Indian Education
Denise Nichols, Student Services Technician, Sierra College
David Ortega, EOPS Coordinator, California State University, Sacramento
Hector Pinion, Part-time Professor, Spanish, Sierra College
Nidia Russi-Gorozpe, Senior Counselor, Placer County Employment Services
Alistair Turner, Program Manager, Outreach & International Students, Sierra College

**Fashion**
Joseph Green, Regional Manager, bebe
Diana Higashi, Part-time Professor, Fashion, Sierra College
Julie Hirota, Fabric Artist
Michael Sommerfield, Owner, Miosa Couture

**Fire Technology**
Sean Bailey, Captain, Northstar Fire Department
Mark Buttron, Battalion Chief, Grass Valley Fire Department
Mark D’Ambrogi, Chief, Auburn City Fire Department
Ed Horton, Loomis
Mike Papera, Placer County Office of Education, 49er ROP
Jeanne Pincha-Tully, U.S. Forest Service
Bryan Ransdell, Assistant Chief, Diamond Springs Fire Department
David Ray, Division Chief, Nevada County Consolidated Fire District, Retired
Barton Ruud, Emeritus Professor, Sierra College
Randy Smith, Deputy Chief, NYP Unit, CAL FIRE, Auburn

**Health Sciences/Emergency Medical Technician**
Bill Bohmer, EMT-1, Placer County Sheriff’s Department
Greg Cavolt, Captain, Roseville City Fire Department
Shani Cornell, Captain, Sacramento Metropolitan Fire Department
Bill Daniels, Assistant Chief, Sacramento Metropolitan Fire Department
Bridget Farren, Vice Principal, Del Oro High School
Kathy Finney, Battalion Chief, Roseville City Fire Department
Brian Gonsalves, Firefighter EMT-P, Sacramento Metropolitan Fire Department
Chris Greene, Captain, Sacramento Metropolitan Fire Department
Sigismund Pikul, Professor, Biological Sciences, Sierra College
Rob Riley, Operations Supervisor, Sierra Nevada Ambulance
James Summers, Fire Chief, Rocklin City Fire Department
Heath Taylor, EMT-P, American Medical Response
**Mechatronics Industry**
Nick Bruno, Harris & Bruno International, Roseville
Bryan Buchanan, Wastewater Operations Manager, City of Roseville
Rob Burgard, Representative, SMC Corporation, Auburn
Howard Carte, Operations Manager, Huntington Labs, Grass Valley
Nathanael Griesert, Design Engineer, NSC Portable Power Systems, Grass Valley
Roy Ingram, Technician, Telefunken Semiconductor, Roseville
Chris Kemp, Factory Manager, Nestle Waters, Sacramento
David Kennedy, Engineer, Michrom Bioresources, Auburn
David Long, Engineer, Aerojet, Rancho Cordova
Denis Longnecker, Engineer, Cox & Sons, Colfax
Harry Lum, Senior Engineer, AIA Video Systems, Grass Valley
Mitchell Patrick, Maintenance Manager, Vanelli Foods, Rocklin
Jim Purcell, Engineer, Line 6, Rocklin
Dan Quarton, Manager, Sierra Pacific Industries, Lincoln
Mike Robinson, Private Consultant, Grass Valley
Steve Sanders, Engineer, PACE-Americas, Grass Valley
Tim Stockwell, Engineer, Hewlett-Packard, Roseville
David Stroud, Training Manager, Anheuser-Busch, Fairfield
Carrie Wetter, Recruiting Manager, Union Pacific Railroad, Roseville
Kay Whitaker, Manager, Ceronix, Inc., Auburn

**Nursing**
Noreen Bothwell, R.N., M.S.N., Public Member, Fair Oaks
C. Brownlee, Education Department, Auburn Faith Hospital, Auburn
Aida Calpo, R.N., University of California, Davis Medical Center
Denise Collings, R.N., Sutter Center for Psychiatry
Kay Courter, Education Coordinator, Marshall Hospital, Placerville
Nancy Dekker, Educational Services, Sierra Nevada Memorial Hospital, Grass Valley
Sue Ann DiGiusto, Kaiser Hospital, Roseville
Gail Fisher, Sutter-Roseville Medical Center
Dee Ford, R.N., Sutter-Auburn Faith Hospital, Auburn
Mary Gish, R.N., M.S.N., Sierra Nevada Memorial Hospital, Grass Valley
Kathy Green, R.N., University of California, Davis Medical Center
Kay Jelten, R.N., Sutter General Hospital
Judy Lange, Assistant Administrator, Vencor Hospital, Sacramento
Pam Lippert, Director Patient Care Services, CPC Heritage Oaks Hospital, Sacramento
Kathy Morris, R.N., Administrator, Golden Empire Convalescent Hospital
Susan Rutledge, R.N., Education Department, Sutter-Roseville Medical Center
Mary Ruvalcaba, Mission Oaks, Carmichael

**Nutrition, Food Science and Fitness Training**
Mary Conway, Professor, Physical Education, Sierra College
Clare Dendinger, Emeritus Professor, Nutrition and Food Science, Sierra College
Kevin Fong, Head Trainer, Spare Time, Inc., Elk Grove
Sara Heard, Part-time Professor, Physical Education, Sierra College
Judith Kreft, Part-time Professor, Physical Education, Sierra College
Dr. Mithia Mukutmoni, Professor, Nutrition and Food Science, Sierra College
Mike Putnam, Regional Fitness Manager, California Family Fitness, Orangevale

**Photovoltaic**
Jim Bayless, Treasure Homes
Jon Bertolino, SMUD
Michelle Bertolino, Roseville Electric
Jedediah Biagi, Plan It Solar
Anna Bousouris, Sierra Solar
Julia Burrows, Valley Vision
Peter Davis, ATTEI
Michael Dela Pena, Greentern
Brett Dotson, SMA-America
Steve Geiger, Part-Time Professor, Sierra College
Kristine Gilbert, Professor, Environmental Studies and Sustainability, Sierra College
John Gildea, Part-Time Professor, Sierra College
Jim Gragg, SOLARcITY Electric
John Hill, Sierra Solar
Brian Hurd, Hands On Solar
Darrell Johnson, Pacific Gas & Electric
Devan Johnson, KW Engineering
Sue Kateley, CalSEIA
Rob Katzenstein, Part-Time Professor, Sierra College
Rick Larkey, North State BIA
Richard Lindstadt, Foresthill High School
Sue Lunsford, Foresthill High School
Gil Mathew, Sierra Solar
Derek Ogden, City of Roseville
Carol Pepper-Kittredge, Director, Center for Applied Competitive Technologies, Sierra College
Mike Robinson, Part-Time Professor, Sierra College
David Schweikert, SOLARcITY Electric
Terri Shirhall, City of Roseville
Rachela Smith, Tech Prep Consultant
Sam Vanderhoof, Pacific Renewables Group
Martin Webb, Plan It Solar
Dan Zeisler, Principal, Chicago Park

**Small Business Development Center**
David Castaneda, SBA, Sacramento
Kim Neri, SACTO
Veterans
Daniel Avegalio, Veterans Services Certifying Official, American River College
Sue Cooper, Veterans Justice Outreach Specialist, Veterans Administration Northern California Health Care System
Kimmie Ezeike, Northern California Rural Health Coordinator, U.S. Department of Veterans Affairs
Valaine Hoffman, CEL/STEM Consultant, Sierra College
Michelle Johnson, Professor, English, Sierra College
John Melrose, Veteran Service Officer, Placer County
Catherine Morris, Veterans Counselor, Sierra College
BG (ret) Dan Nelan, Director, National Guard and Veterans Programs
Bobbi Park, Sacramento Valley Local Interagency Network Coordinator, Veterans Services Division, California Department of Veterans Affairs
Blake Rood, DSPS & Veterans Technician, Sierra College
David Sachs, Director/Principal of Learning 4 Life Education Services, Board Member Veterans Cadre
Sarah Sanders, Student Employee, Sierra College
Eric Theer, Veteran Student, Sierra College, Member, Veterans Cadre
Nick Zoffel, Assistant Professor, Communication Studies, Sierra College
<table>
<thead>
<tr>
<th>Index Entry</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absence, Illness</td>
<td>21</td>
</tr>
<tr>
<td>Academic Accommodation Policy</td>
<td>268</td>
</tr>
<tr>
<td>Academic Calendar</td>
<td>6</td>
</tr>
<tr>
<td>Academic Dishonesty</td>
<td>260</td>
</tr>
<tr>
<td>Academic Enrichment</td>
<td>13</td>
</tr>
<tr>
<td>Academic Foundations Program</td>
<td>31</td>
</tr>
<tr>
<td>Academic Freedom Policy</td>
<td>273</td>
</tr>
<tr>
<td>Academic Probation</td>
<td>22</td>
</tr>
<tr>
<td>Academic Record Symbols</td>
<td>25</td>
</tr>
<tr>
<td>Academic Regulations</td>
<td>22</td>
</tr>
<tr>
<td>Academic Renewal</td>
<td>22</td>
</tr>
<tr>
<td>Academic Senate</td>
<td>11</td>
</tr>
<tr>
<td>Academic Standing</td>
<td>22</td>
</tr>
<tr>
<td>Accounting Offerings (See Business)</td>
<td>104</td>
</tr>
<tr>
<td>Accreditation</td>
<td>10</td>
</tr>
<tr>
<td>Activities, Student</td>
<td>41</td>
</tr>
<tr>
<td>Activity Sticker</td>
<td>17</td>
</tr>
<tr>
<td>Add/Drop Period</td>
<td>15</td>
</tr>
<tr>
<td>Administration of Justice Offerings</td>
<td>60</td>
</tr>
<tr>
<td>Administrative Procedures</td>
<td>274</td>
</tr>
<tr>
<td>Administrative Procedures</td>
<td>11</td>
</tr>
<tr>
<td>Admission</td>
<td>12</td>
</tr>
<tr>
<td>Advanced Placement Exam Credit (AP)</td>
<td>18</td>
</tr>
<tr>
<td>Advisory Committees</td>
<td>11, 287</td>
</tr>
<tr>
<td>Advisory Policy</td>
<td>26, 58</td>
</tr>
<tr>
<td>Agriculture Offerings</td>
<td>67</td>
</tr>
<tr>
<td>Air Force ROTC</td>
<td>18</td>
</tr>
<tr>
<td>American Opportunity Tax Credit</td>
<td>17</td>
</tr>
<tr>
<td>Anatomy Offerings</td>
<td>95</td>
</tr>
<tr>
<td>Animal Science Offerings</td>
<td>67</td>
</tr>
<tr>
<td>Anthropology Offerings</td>
<td>70</td>
</tr>
<tr>
<td>Applied Art and Design Offerings</td>
<td>72</td>
</tr>
<tr>
<td>Art Offerings</td>
<td>79</td>
</tr>
<tr>
<td>Articulation Agreements</td>
<td>20</td>
</tr>
<tr>
<td>Arts and Cultures A.A. Degree</td>
<td>199</td>
</tr>
<tr>
<td>Assessment</td>
<td>14, 32</td>
</tr>
<tr>
<td>Associated Students of Sierra College (ASSC)</td>
<td>41</td>
</tr>
<tr>
<td>Associate Degree Requirements</td>
<td>44</td>
</tr>
<tr>
<td>Associate Degrees for Transfer</td>
<td>42, 43</td>
</tr>
<tr>
<td>Associate in Arts/Associate in Science Degrees</td>
<td>42, 46</td>
</tr>
<tr>
<td>Associate in Arts for Transfer/Associate in Science for Transfer Degrees (AA-T/AS-T)</td>
<td>42, 47</td>
</tr>
<tr>
<td>Astronomy Offerings</td>
<td>86</td>
</tr>
<tr>
<td>Athletics Offerings</td>
<td>87</td>
</tr>
<tr>
<td>Athletics Program</td>
<td>41</td>
</tr>
<tr>
<td>Attendance</td>
<td>21</td>
</tr>
<tr>
<td>Auditing Courses</td>
<td>23</td>
</tr>
<tr>
<td>Automotive Technology Offerings</td>
<td>90</td>
</tr>
<tr>
<td>Avalanche Safety (See Recreation Management)</td>
<td>245</td>
</tr>
<tr>
<td>Basic Skills</td>
<td>10, 27</td>
</tr>
<tr>
<td>Biological Sciences Offerings</td>
<td>95</td>
</tr>
<tr>
<td>Board of Trustees</td>
<td>11, 274</td>
</tr>
<tr>
<td>Board Policies</td>
<td>11</td>
</tr>
<tr>
<td>Bookstores</td>
<td>32</td>
</tr>
<tr>
<td>Botany Offerings</td>
<td>95</td>
</tr>
<tr>
<td>Business Offerings</td>
<td>104</td>
</tr>
<tr>
<td>Cafeteria</td>
<td>32</td>
</tr>
<tr>
<td>Catalog, Sierra College 2013-2014</td>
<td>6</td>
</tr>
<tr>
<td>Cal Grants</td>
<td>39</td>
</tr>
<tr>
<td>California State University General Education Breadth</td>
<td>50</td>
</tr>
<tr>
<td>CalWORKs</td>
<td>32</td>
</tr>
<tr>
<td>Campus Maps</td>
<td>292</td>
</tr>
<tr>
<td>Career and Technical Education</td>
<td>10</td>
</tr>
<tr>
<td>Career and Transfer Connections</td>
<td>33, 36</td>
</tr>
<tr>
<td>Career Connections</td>
<td>33</td>
</tr>
<tr>
<td>Carpool Information</td>
<td>17</td>
</tr>
<tr>
<td>Catalog Rights</td>
<td>42</td>
</tr>
<tr>
<td>Center for Applied Competitive Technologies (CACT)</td>
<td>10</td>
</tr>
<tr>
<td>Certificates of Achievement</td>
<td>42, 48</td>
</tr>
<tr>
<td>Certificate Petitions</td>
<td>43</td>
</tr>
<tr>
<td>Challenging Courses</td>
<td>23</td>
</tr>
<tr>
<td>Chemistry Offerings</td>
<td>112</td>
</tr>
<tr>
<td>Child Care</td>
<td>33</td>
</tr>
<tr>
<td>Child Development Offerings</td>
<td>186</td>
</tr>
<tr>
<td>Class Registration</td>
<td>15</td>
</tr>
<tr>
<td>Classified Senate</td>
<td>11</td>
</tr>
<tr>
<td>Classified Staff</td>
<td>282</td>
</tr>
<tr>
<td>Clery Act</td>
<td>270</td>
</tr>
<tr>
<td>College Level Exam Program (CLEP) Credit</td>
<td>18</td>
</tr>
<tr>
<td>Commencement</td>
<td>6</td>
</tr>
<tr>
<td>Communication Studies Offerings</td>
<td>116</td>
</tr>
<tr>
<td>Community Education</td>
<td>10</td>
</tr>
<tr>
<td>Computer and Network Use</td>
<td>269</td>
</tr>
<tr>
<td>Computer Information Systems Offerings</td>
<td>120</td>
</tr>
<tr>
<td>Computer Integrated Electronics Offerings</td>
<td>207</td>
</tr>
<tr>
<td>Computer Science Offerings</td>
<td>128</td>
</tr>
<tr>
<td>Conduct, Student</td>
<td>261</td>
</tr>
<tr>
<td>G</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Gainful Employment Disclosure Information ........................................ 42</td>
<td></td>
</tr>
<tr>
<td>General Education ........................................ 10</td>
<td></td>
</tr>
<tr>
<td>General Education Certification ........................................ 19</td>
<td></td>
</tr>
<tr>
<td>General Education Reciprocity ........................................ 43</td>
<td></td>
</tr>
<tr>
<td>General Education Requirements ........................................ 44</td>
<td></td>
</tr>
<tr>
<td>California State University General Education Breadth ................................ 50</td>
<td></td>
</tr>
<tr>
<td>Intersegmental General Education Transfer Curriculum .............................. 52</td>
<td></td>
</tr>
<tr>
<td>Associate Degree Requirements ........................................ 44</td>
<td></td>
</tr>
<tr>
<td>General Information ........................................ 10</td>
<td></td>
</tr>
<tr>
<td>Geographic Information Systems (GIS) ........................................ 177</td>
<td></td>
</tr>
<tr>
<td>Geography Offerings ........................................ 177</td>
<td></td>
</tr>
<tr>
<td>Geology Offerings (See Earth Science) ........................................ 144</td>
<td></td>
</tr>
<tr>
<td>German Offerings ........................................ 180</td>
<td></td>
</tr>
<tr>
<td>Governance ........................................ 11</td>
<td></td>
</tr>
<tr>
<td>Grade Changes ........................................ 24</td>
<td></td>
</tr>
<tr>
<td>Grade Point Average ........................................ 25</td>
<td></td>
</tr>
<tr>
<td>Grading Practices ........................................ 25, 59</td>
<td></td>
</tr>
<tr>
<td>Graduation Requirements ........................................ 42</td>
<td></td>
</tr>
<tr>
<td>Graphic Design Offerings ........................................ 72</td>
<td></td>
</tr>
<tr>
<td>Grievance (Complaint) Process ........................................ 267</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harassment Prohibition Policy ........................................ 271</td>
</tr>
<tr>
<td>Health Education Offerings ........................................ 180</td>
</tr>
<tr>
<td>Health Fee ........................................ 16</td>
</tr>
<tr>
<td>Health Services, College ........................................ 35</td>
</tr>
<tr>
<td>Health Sciences Offerings ........................................ 181</td>
</tr>
<tr>
<td>History Offerings ........................................ 182</td>
</tr>
<tr>
<td>History of Sierra College ........................................ 8</td>
</tr>
<tr>
<td>Honesty in Academic Work ........................................ 260</td>
</tr>
<tr>
<td>Honor Graduates ........................................ 43</td>
</tr>
<tr>
<td>Honor Society ........................................ 41</td>
</tr>
<tr>
<td>Honor Students ........................................ 22</td>
</tr>
<tr>
<td>Honors Courses ........................................ 19</td>
</tr>
<tr>
<td>Hope Scholarship Tax Credit (See American Opportunity) ................................ 17</td>
</tr>
<tr>
<td>Housing ........................................ 35</td>
</tr>
<tr>
<td>Human Development and Family Offerings ........................................ 186</td>
</tr>
<tr>
<td>Humanities Offerings ........................................ 193</td>
</tr>
<tr>
<td>Hybrid Courses ........................................ 34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illustration Offerings ........................................ 72</td>
</tr>
<tr>
<td>Incomplete Academic Work ........................................ 25, 26</td>
</tr>
<tr>
<td>Independent Study ........................................ 59</td>
</tr>
<tr>
<td>Information, General ........................................ 10</td>
</tr>
<tr>
<td>Institutional Outcomes ........................................ 5</td>
</tr>
<tr>
<td>Instructional Materials Fee ........................................ 16</td>
</tr>
<tr>
<td>Instructional Programs ........................................ 10</td>
</tr>
<tr>
<td>Interdisciplinary Offerings ........................................ 197</td>
</tr>
<tr>
<td>International Baccalaureate Exam (IB) ........................................ 19</td>
</tr>
<tr>
<td>International Students ........................................ 13</td>
</tr>
<tr>
<td>International Studies ........................................ 20</td>
</tr>
<tr>
<td>International Transcripts ........................................ 19</td>
</tr>
<tr>
<td>Internship Program ........................................ 10, 59</td>
</tr>
<tr>
<td>Intersegmental General Education Transfer Curriculum (IGETC) ........................... 19, 52</td>
</tr>
<tr>
<td>Italian Offerings ........................................ 197</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japanese Offerings ........................................ 198</td>
</tr>
<tr>
<td>Job Center ........................................ 35</td>
</tr>
<tr>
<td>Journalism Offerings ........................................ 198</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law Enforcement Offerings ........................................ 60</td>
</tr>
<tr>
<td>Learning Center (See Tutorial Services) ........................................ 36</td>
</tr>
<tr>
<td>Learning Disabilities Program ........................................ 35</td>
</tr>
<tr>
<td>Learning Disabilities Offerings ........................................ 199</td>
</tr>
<tr>
<td>Learning Opportunities Center ........................................ 35</td>
</tr>
<tr>
<td>Leave of Absence ........................................ 21</td>
</tr>
<tr>
<td>Liberal Arts, Arts and Cultures A.A. Degree ........................................ 199</td>
</tr>
<tr>
<td>Liberal Studies (See Education) ........................................ 148</td>
</tr>
<tr>
<td>Library/Learning Resource Center ........................................ 35</td>
</tr>
<tr>
<td>Library Science Offerings ........................................ 200</td>
</tr>
<tr>
<td>Lifetime Learning Tax Credit ........................................ 17</td>
</tr>
<tr>
<td>Literature Offerings ........................................ 152</td>
</tr>
<tr>
<td>Loans ........................................ 39</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majors ........................................ 46</td>
</tr>
<tr>
<td>Management Offerings (See Business) ........................................ 104</td>
</tr>
<tr>
<td>Management Senate ........................................ 11</td>
</tr>
<tr>
<td>Maps ........................................ 292</td>
</tr>
<tr>
<td>Marketing Offerings (See Business) ........................................ 104</td>
</tr>
<tr>
<td>Mathematics Offerings ........................................ 201</td>
</tr>
<tr>
<td>Matriculation ........................................ 14</td>
</tr>
<tr>
<td>Mechatronics Offerings ........................................ 207</td>
</tr>
<tr>
<td>Military Service Credit ........................................ 19</td>
</tr>
<tr>
<td>Military Withdrawal ........................................ 25</td>
</tr>
<tr>
<td>Mission Statement ........................................ 4</td>
</tr>
<tr>
<td>Music Offerings ........................................ 209</td>
</tr>
<tr>
<td>Multimedia Offerings ........................................ 72</td>
</tr>
<tr>
<td>Multiple Course Enrollment ........................................ 21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Science, A.A./A.S. Degree ........................................ 213</td>
</tr>
<tr>
<td>Noncredit Basic Skills Courses ........................................ 10</td>
</tr>
<tr>
<td>Non-Discrimination Policy ........................................ 270</td>
</tr>
<tr>
<td>Nonresident Student Capital Outlay Fee ........................................ 16</td>
</tr>
<tr>
<td>Nonresident Student Tuition ........................................ 16</td>
</tr>
<tr>
<td>Nursing Offerings ........................................ 214</td>
</tr>
<tr>
<td>Nutrition and Food Science Offerings ........................................ 218</td>
</tr>
</tbody>
</table>
INDEX

O
Online Courses ................................. 34
Open Courses .................................. 21
Orientation .................................... 14
Osher Lifelong Learning Institute (OLL) .... 11
Overlapping and Multiple Course Enrollment 21
Overload Request ............................. 30

P
Parking and Security Services ............... 36
Parking Fee .................................... 17
Pass/No Pass Grading ......................... 25, 26
Payment Information ......................... 16
Perceptual Training Offerings ............... 219
Personal Development Offerings ............ 220
Philosophy Offerings ........................ 221
Photography Offerings ...................... 223
Physical Education Offerings ............... 229
Physics Offerings ............................ 236
Physiology Offerings ......................... 95
Police Science Offerings .................... 60
Political Science Offerings ................ 239
Posting of Materials ........................ 270
Prerequisite Policy ........................... 26, 58
Prerequisites, Corequisites and Advisories 26
President’s Honor Roll ....................... 22
Probation, Academic and Progress ........ 22
Project Management Offerings (See CIS) 120
Progress Probation ........................... 22
Psychology Offerings ....................... 241

R
Reading Offerings (see English) .......... 152
Readmission after Dismissal ............... 23
Real Estate Offerings (see Business) ..... 104
Reciprocity .................................... 43
Records, Student ............................. 29
Recreation Management Offerings ......... 245
Refunds ........................................ 17
Registered Nursing Offerings .............. 214
Registration .................................... 14
Remedial Coursework Limit ................. 27
Renewal, Academic .......................... 22
Repeating Courses ........................... 27, 59
Residency Requirements .................... 12
Responsibility, Student ..................... 260
Right-to-Know ................................. 271
ROTC .......................................... 18

S
Scholarships ................................... 39
Security Report ............................... 270
Security Services ............................. 36
Selective Service ............................. 40
Sexual Harassment Prohibition Policy .... 271
Short Term Classes ......................... 11
Sierra College Mission Statement ......... 4
Skill Development Offerings ............... 247
Skills Certificates ........................... 42, 49
Smoking Policy ............................... 272
Social Science Offerings ................... 248

PHOTO BY DARYL STINCHFIELD