



OFFICE OF INSTRUCTION

Curriculum/Tenure Review/Faculty Evaluation & Catalog

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Catalog Update for 2008-09 College Catalog

Last Updated: November 10, 2009

The following programs were identified as "pending state approval" in the print catalog. They have since been approved. The program details are outlined below and should be considered added to the 2008-09 College Catalog. This document will continue to be updated as additional programs that were "pending state approval" are approved.

Environmental Studies and Sciences

CCSF's Environmental Studies and Science Major offers basic courses in chemistry, biology, and environmental studies with elective courses in ecology, conservation, and environmental policy. These fundamental courses will serve students with diverse goals including transfer to University of California (UC), California State University (CSU), or other four-year institutions and with interests in either scientific or social science research fields and careers. Environmental Studies and Science majors will be able to take most or all of their lower division preparation at CCSF before they transfer but should meet with a counselor to confirm their program of study.

Through the core twenty-two units of the Environmental Studies and Science Major, students will gain an understanding of the process of science, its importance in understanding human impacts on the environment, and be able to critically evaluate both the scientific evidence and sociopolitical aspects of environmental and natural resources problems, their causes, and proposed solutions. The Ecology and Conservation concentration requires a minimum of four units focusing on plant-animal interactions and hands-on laboratory and field investigations. The Environmental Studies Concentration requires a minimum of four units focusing on human interactions with the environment and its implications for human welfare and sustainability.

Option 1: Concentration in Ecology and Conservation

Option 2: Concentration in Environmental Studies

Required Coursework

Courses	Units
BIO 31 Introduction to Environmental Studies	3
CHEM 101A General College Chemistry	5
BIO 101A General Biology	5
BIO 101B General Biology	5
Subtotal.....	18

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Option 1: Concentration in Ecology and Conservation

One of the following course combinations:

BIO 20 Introduction to Ecology	4
with BIO 41L Ecology Laboratory	1
BIO 40 Plants and Animals of California.....	4
with BIO 41L Ecology Laboratory	1
BIO 40 Plants and Animals of California.....	4
with BIO 26 Habitat Restoration Field Studies	1
BIO 32 Marine Biology.....	4
with BIO 32L Marine Biology Laboratory.....	1
Grand Total Units	23

Option 2: Concentration in Environmental Studies

One of the following course combinations:

BIO 30 Ecology and Human Environment.....	3
with BIO 41L Ecology Laboratory	1
POLS 22 Environmental Politics and Policy.....	3
with BIO 25 Ecology of San Francisco.....	1
Grand Total Units	22

Biotechnology Major

In the biotechnology curriculum, a two-year course of study, the Engineering and Technology Department offers students specialized training for employment as biotechnicians engaged in research, design, manufacturing, operation, maintenance, testing, or sales related to this field. All students in this field of study complete the required core courses. Specialization is offered from the second through the fourth semester course work and will lead to a certificate of accomplishment concurrently. The program advisers work closely with each student to assure normal progress. Upon successful completion of the curriculum, students receive the Associate in Science degree with Biotechnology as the Major.

Training in the Major. Training in the first year is designed to provide students with a sound working knowledge of the applied principles of mathematics, chemistry and biology and introductory biotechnology. In the second year, students complete more advanced courses in biotechnology.

Employment. Students who complete the curriculum satisfactorily are qualified for positions as quality control, research and development, and bio-manufacturing technicians in hundreds of pharmaceutical and biotechnology companies in the Bay Area.

Major. Students who complete the curriculum with final grades of C or higher in the major technical courses receive the Associate in Science degree in Biotechnology.

Four-year Degree Preparation. Besides preparing students who complete this curriculum for careers in the biotechnology industries, the students can also transfer to universities to pursue a BS degree, most

likely in industrial technology with focus on biotechnology. The department currently has a formal articulation agreement with California State University at Fresno. Please contact the program advisor (239-3505 Science room 148) for details.

First Semester

Course.....	Units
ET 108A Practical Math I	
or an equivalent math course	3
BIO 11 Intro to the Science of Living Organisms	4
CHEM 32 Intro to Medical Chemistry	4
Technical BTEC courses	4
Additional Requirements (General Ed)	3

Subsequent Semesters

ET 108B Practical Math II.	
or an equivalent math course	3
CHEM 33 Advanced Medical Chemistry and Biotechnology	
or CHEM 40 Introduction to Chemical Principles.....	4
SPCH 12 Fundamentals of Oral Communication	
or ET 107 Communication and Language Skills	3
Additional Requirements (General Ed)	12
Technical BTEC courses or Electives listed below	20
Total Units	60

Technical Elective Courses for the Major in Biotechnology

BTEC 5 Briefings in Biotechnology	1
BTEC 10 Research Skills for Career Opportunities in Biology	2
BTEC 12A GLP and GMP Principles	1
BTEC 12B GMP Compliance	1
BTEC 14A Biotechnology Laboratory	2
BTEC 14B Biotechnology Internship	2
BTEC 21A Mammalian Cell Culture	2
BTEC 21B Fluorescent Cell Technology	2
BTEC 21C Stem Cell Technology	3
BTEC 22 Immunoassay: ELISA	1
BTEC 23 Western Blotting Techniques	1
BTEC 24 Introduction to PCR	0.5
BTEC 25 Analytical PCR Technology	1
BTEC 26EX Southern and Northern Blotting	0.5
BTEC 101 Industrial Biotechnology.....	5
BTEC 115 Recombinant DNA Biotechnology	5
BTEC 120 Molecular and Cell Biotechnology	5
BTEC 221 Biotech Process Instrumentation	2
BTEC 222 Biotech Calibration and Validation	1
Total Units	24

Up to 6 units of course work may be taken from related areas with the approval of the program advisor. These courses may include courses from related departments such as Biology.

Child Development Major

Admission. Enrollment is open to all students interested in working with children in Early Childhood Programs or in gaining knowledge needed to become employed in related professions such as K-12 teacher, recreation worker, paraprofessional, youth worker or to transfer for further study.

Associate in Arts Degree. The Child Development Program is designed so that students may satisfy the requirements for graduation from the College.

For students interested in the Associate in Arts Degree and Major (in Child Development) from City College, the requirements are as follows:

Courses Required for the Major in Child Development

Course.....	Units
CDEV 65 Orientation to Early Childhood Programs	3
CDEV 67 The Child, the Family, and the Community	3
CDEV 53 Child Growth and Development	3
CDEV 66 Intro to Early-Childhood Curriculum	3

Health Coursework:

HLTH 14 Advanced First Aid/Emergency Care or HLTH 21 CPR, Childcare Health and Safety Education or HLTH 11A Pediatric CPR and First Aid and HLTH 11B Pediatric Preventive Health Education	1-3
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Required Electives (18 units):

18 additional units of Child Development (CDEV) coursework	18
Total	31-33

The Degree curriculum requires a total of 60 semester units. After completing 30 units from the Child Development Department AND the 18-24 units of General Education Requirements, a student may enroll in any course (as elective) to total the 60 units for an A.A. Degree.