

# SUBJECT MATTER PROGRAM (CHEMISTRY)

Units required for the Subject Matter Program: 47-57

## Program Description

The Science Subject Matter Program (in biology, chemistry, physics, or foundational level general science) is designed to meet the California Commission on Teacher Credentialing (CTC) subject matter requirement for students to enter a California Single Subject teaching credential program. Meeting the subject matter requirement is a credential program admission requirement, and can be met either through a subject matter program (such as those described below) or by taking a state approved content exam (currently the California Subject Exam for Teachers, the CSET). In order to meet the subject matter obtain a California K-12 Teaching Credential, a program requirement, all courses must be completed with a grade of "C-" or better. In order to teach public school in California, you must also complete a teaching credential program.

Subject matter programs are not degrees or concentrations; instead they are a series of courses that allow a student to meet the requirements for admission to a teaching credential program. Students must also complete a BA or BS degree (with any major) to fulfill the credential requirements.

Science majors who intend to pursue a teaching credential should see a faculty advisor or the department chair in the department of their academic major. It is recommended that they do so early as it is critical that their science coursework be carefully planned and coordinated to include the required subject matter program courses. In addition, students are encouraged to become involved with education related activities like grading, assisting in labs, tutoring K-12 students, and visiting schools; please speak with the subject matter advisors in your area for more information.

## Program Requirements

Code	Title	Units
<b>Required Courses (47-57 Units)</b>		
ASTR 4A	Introduction to the Solar System	3
ASTR 4B	Introduction to Stars, Galaxies, and Cosmology	3
Choose one of the following:		4 - 10
BIO 1 & BIO 2	Biodiversity, Evolution and Ecology Cells, Molecules and Genes <sup>1</sup>	
BIO 10 & BIO 15L	Basic Biological Concepts Laboratory Investigations in Biology	
CHEM 1A	General Chemistry I <sup>1</sup>	5
CHEM 1B	General Chemistry II	5
CHEM 24	Organic Chemistry Lecture I	3
CHEM 31	Quantitative Analysis	4
ENVS 10	Introduction to Environmental Science <sup>1</sup>	3
GEOL 10	Physical Geology <sup>1</sup>	3
Choose one of the following		8 - 12
PHYS 5A & PHYS 5B	General Physics: Mechanics, Heat, Sound General Physics: Light, Electricity and Magnetism, Modern Physics <sup>1</sup>	

PHYS 11A & PHYS 11B & PHYS 11C	General Physics: Mechanics General Physics: Heat, Light, Sound, Modern Physics General Physics: Electricity and Magnetism	
CHEM 140A	Physical Chemistry Lecture I	3
CHEM 160A or CHEM 161	Structure and Function of Biological Molecules General Biochemistry	3
<b>Total Units</b>		<b>47-57</b>

<sup>1</sup> Course also satisfies General Education (GE)/Graduation Requirement.