

SINGLE SUBJECT CREDENTIAL PROGRAM

**Chemistry
Subject Matter Domain Coursework**

The Chemistry Science credential has four General Science domains and three domains specific to Chemistry. The General Science Domains showing breadth of science knowledge are: Scientific Practices, Engineering Design and Applications, and Crosscutting Concepts (Domain 1), Physical Sciences (Domain 2), Life Sciences (Domain 3), and Earth and Space Sciences (Domain 4). The Chemistry Domains showing depth of Chemistry knowledge are: Structure and Properties of Matter (Domain 1), Chemical Reactions and Chemical Bonding (Domain 2), and Energy (Domain 3). The General Science Domains are contained in the CSET Subtest 1 while the Chemistry Domains are in the CSET Subtest II. This table will be used to determine domains where candidates meet subject matter via coursework.

CSET	Domain	CSULB Foundational Science Domain Courses	Accepted Coursework
Subtest I (215)	Domain 1: Scientific Practices, Engineering Design and Applications, and Crosscutting Concepts	Take all the following: <input type="checkbox"/> CHEM 111A: General Chemistry (5) <input type="checkbox"/> CHEM 111B: General Chemistry (5) <input type="checkbox"/> GEOL 106: Earth Science for Teachers (4) <input type="checkbox"/> PHYS 100A: General Physics (4) <input type="checkbox"/> SCED 403: Integrated Science (3) <input type="checkbox"/> SCED 404: Nature of Science (3)	
	1.1 Understand scientific practices		
	1.2 Understand engineering practices, design, and applications		
	1.3 Understand crosscutting concepts among the sciences and engineering		
	Domain 2: Physical Sciences	Take all the following: <input type="checkbox"/> BIOL 212: Intro to Cell and Molecular Biology (4) <input type="checkbox"/> CHEM 111A: General Chemistry (5) <input type="checkbox"/> CHEM 111B: General Chemistry (5) <input type="checkbox"/> PHYS 100A: General Physics (4) <input type="checkbox"/> PHYS 100B: General Physics (4)	
2.1 Understand structure and properties of matter			
2.2 Understand chemical reactions and biochemistry			
2.3 Understand motion and stability: forces and interactions			
2.4 Understand waves and their applications in technologies for information transfer			
2.5 Understand energy			
2.6 Understand electricity and magnetism			
Domain 3: Life Sciences	Take all the following: <input type="checkbox"/> CHEM 111A: General Chemistry (5) <input type="checkbox"/> BIOL 211: Intro to Evo and Diversity (5) <input type="checkbox"/> BIOL 212: Intro to Cell and Molecular Biology (4) <input type="checkbox"/> BIOL 213 Intro to Eco and Physiology (4)		
3.1 Understand the structure and function of cells			
3.2 Understand growth, development, and energy flow in organisms			
3.3 Understand ecosystems: interactions, energy, and dynamics			
3.4 Understand heredity: inheritance and variation of traits			
3.5 Understand biological evolution: unity and diversity			
Domain 4: Earth and Space Sciences	Take all the following: <input type="checkbox"/> ASTR 100: Astronomy (3) <input type="checkbox"/> CHEM 111A: General Chemistry (5) <input type="checkbox"/> CHEM 111B: General Chemistry (5) <input type="checkbox"/> GEOL 106: Earth Science for Teachers (4) <input type="checkbox"/> GEOL 300: Earth Systems (3)		
4.1 Understand Earth's place in the universe			
4.2 Understand Earth's materials and systems and surface processes			
4.3 Understand plate tectonics and large-scale system interactions			
4.4 Understand weather and climate			
4.5 Understand natural resources and natural hazards			

*Students must receive a "C" or better to receive subject matter credit; in EDSS 300C, students must receive a "B" or better.

CSET	Domain	CSULB Chemistry Waiver Domain Alignment	Accepted Coursework
Subtest II (218)	Domain 1: Structure and Properties of Matter	Take all the following: <input type="checkbox"/> CHEM 111A General Chemistry (5) <input type="checkbox"/> CHEM 111B General Chemistry (5) <input type="checkbox"/> CHEM 220A Organic Chemistry (3)	
	1.1 Understand the structure of matter		
	1.2 Understand the properties of matter		
	1.3 Understand behavior and properties of solutions 1.4 Understand nuclear processes		
	Domain 2: Chemical Reactions and Chemical Bonding	Take all the following: <input type="checkbox"/> CHEM 111A General Chemistry (5) <input type="checkbox"/> CHEM 111B General Chemistry (5) <input type="checkbox"/> CHEM 220A Organic Chemistry I (3) <input type="checkbox"/> CHEM 220B Organic Chemistry II (3)	
	2.1 Understand chemical reactions		
2.2 Understand chemical bonding			
2.3 Understand conservation of matter and stoichiometry 2.4 Understand organic chemistry and biochemistry			
Domain 3: Energy	Take all the following: <input type="checkbox"/> BIOL 212 Intro to Cell and Molecular Biology (4) <input type="checkbox"/> CHEM 111A General Chemistry (5) <input type="checkbox"/> CHEM 111B General Chemistry (5) <input type="checkbox"/> GEOL 106 Earth Science for Teachers (4)		
3.1 Understand the definitions of energy, conservation of energy, and energy transfer 3.2 Understand energy in chemical processes and everyday life			

