



SINGLE SUBJECT CREDENTIAL PROGRAM

**Biological Science
Subject Matter Domain Coursework**

The Biological Science credential has four General Science domains and four domains specific to Biology. 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 Biology Domains showing depth of Biology knowledge are: From Molecules to Organisms: Structures and Processes (Domain 1), Ecosystems: Interactions, Energy, and Dynamics (Domain 2), Heredity: Inheritance and Variation of Traits (Domain 3), and Biological Evolution: Unity and Diversity (Domain 4). The General Science Domains are contained in the CSET Subtest 1 while the Biology Domains are in the CSET Subtest II.

CSET	Domain	CSULB Biological 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 Biological Science Domain Courses	Accepted Coursework
Subtest II (217)	Domain 1: From Molecules to Organisms: Structures and Processes	<u>Take all the following:</u> <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) <input type="checkbox"/> BIOL 340: Molecular Cell Bio (3) <input type="checkbox"/> BIOL 342: Human Mammalian Physiology (3)	
	1.1 Understand the structure and function of cells		
	1.2 Understand the hierarchical organization and functioning of systems in multicellular organisms		
	1.3 Understand growth and development of organisms		
	1.4 Understand matter and energy flow in organisms		
	Domain 2: Ecosystems: Interactions, Energy, and Dynamics	<u>Take all the following:</u> <input type="checkbox"/> BIOL 213: Intro to Eco and Physiology (4) <input type="checkbox"/> BIOL 212: Intro to Cell and Molecular Biology (4)	
2.1 Understand interdependent relationships in ecosystems			
2.2 Understand cycles of matter and energy transfer in ecosystems			
2.3 Understand ecosystem dynamics, functioning, and resilience	<u>Take all the following:</u> <input type="checkbox"/> BIOL 212: Intro to Cell and Molecular Biology (4) <input type="checkbox"/> BIOL 211: Intro to Evo and Diversity (5)		
Domain 3: Heredity: Inheritance and Variation of Traits			
3.1 Understand inheritance of traits	<u>Take the following:</u> <input type="checkbox"/> BIOL 211: Intro to Evo and Diversity (5)		
3.2 Understand variation of traits and genetic engineering			
Domain 4: Biological Evolution: Unity and Diversity	<u>Take the following:</u> <input type="checkbox"/> BIOL 211: Intro to Evo and Diversity (5)		
4.1 Understand evidence of common ancestry and diversity			
4.2 Understand natural selection			
4.3 Understand adaptation			