CALIFORNIA STATE UNIVERSITY
LONG BEACH
College of Education

SINGLE SUBJECT CREDENTIAL PROGRAM

Physics
Subject Matter Domain Coursework

The Physics Science credential has four General Science domains and four domains specific to Physics. 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 Physics Domains showing depth of physics content are: Motion and Stability: Forces and Interactions (Domain 1), Energy (Domain 2), Waves and their Application (Domain 3), and Mode rn Physics (Domain 4). The General Science Domains are contained in the CSET Subtest 1 while the Physics 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** **1.1 Understand scientific practices** **1.2 Understand engineering practices, design, and applications** **1.3 Understand crosscutting concepts among the sciences and engineering**	**Take all the following:** ☐ CHEM 111A: General Chemistry (5) ☐ CHEM 111B: General Chemistry (5) ☐ GEOL 106: Earth Science for Teachers (4) ☐ PHYS 100A: General Physics (4) ☐ SCED 403: Integrated Science (3) ☐ SCED 404: Nature of Science (3)	
	Domain 2: Physical Sciences **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**	**Take all the following:** ☐ BIOL 212: Intro to Cell and Molecular Biology (4) ☐ CHEM 111A: General Chemistry (5) ☐ CHEM 111B: General Chemistry (5) ☐ PHYS 100A: General Physics (4) ☐ PHYS 100B: General Physics (4)	
	Domain 3: Life Sciences **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**	**Take all the following:** ☐ CHEM 111A: General Chemistry (5) ☐ BIOL 211: Intro to Evo and Diversity (5) ☐ BIOL 212: Intro to Cell and Molecular Biology (4) ☐ BIOL 213 Intro to Eco and Physiology (4)	
	Domain 4: Earth and Space Sciences **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**	**Take all the following:** ☐ ASTR 100: Astronomy (3) ☐ CHEM 111A: General Chemistry (5) ☐ CHEM 111B: General Chemistry (5) ☐ GEOL 106: Earth Science for Teachers (4) ☐ GEOL 300: Earth Systems (3)	

*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 Physics Domain Courses	Accepted Coursework
Subtest II (220)	**Domain 1: Motion and Stability: Forces and Interactions** **1.1 Understand forces and motion** **1.2 Understand conservation of energy and momentum**	☐ PHYS 151 (this course is specific to physics majors, this is in lieu of PHYS 100A which is for non-majors) (4)	
	Domain 2: Energy **2.1 Understand definitions of energy and energy in everyday life** **2.2 Understand thermal energy and kinetic molecular energy** **2.3 Understand electricity and magnetism**	**Take all the following:** ☐ PHYS 151: Mechanics and Heat (4) ☐ PHYS 152: (this course is specific to physics majors, this is in lieu of PHYS 100B which is for non-majors) (4) ☐ PHYS 254: Applied Modern Physics (3) ☐ PHYS 255: Applied Modern physics Lab (1) ☐ PHYS 320: Thermodynamics (3)	
	Domain 3: Waves and their Application **3.1 Understand wave properties** **3.2 Understand electromagnetic radiation and applications of waves in information and instrumentation**	**Take all the following:** ☐ PHYS 152: Electricity and Magnetism (4) ☐ PHYS 254: Applied Modern Physics (3) ☐ PHYS 255: Applied Modern physics Lab (1)	
	Domain 4: Modern Physics **4.1 Understand quantum mechanics, the standard model of particles, and special relativity** **4.2 Understand nuclear processes**	**Take all the following:** ☐ PHYS 151: Mechanics and Heat (4) ☐ PHYS 254: Applied Modern Physics (3) ☐ PHYS 255: Applied Modern physics Lab (1)	

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