

BACHELOR OF SCIENCE IN PHYSICS

Single Subject Preliminary Credential in Physics

Credential Requirements Worksheet

2018-2019 Catalog

NOTE: This checklist is not intended to replace advising from the major department. Students should consult with the major advisor to determine the appropriate sequence of courses. This checklist is to inform students of major requirements and course prerequisites only; the [CSULB Course Catalog](#) takes precedence in any conflict. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification.

The Physics Concentration meets the subject matter competence requirement for the Single Subject Teaching Credential in Physics. Prospective students should consult the Single Subject Science Education Advisor in the Department of Science Education early to plan their program.

Many prerequisites require a "C" or better, please check the catalog for grade requirements.

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 151	Mechanics and Heat (4)	<i>Pre/Corequisite:</i> MATH 122 or 123 or 224
		PHYS 152	Electricity and Magnetism (4)	PHYS 151. <i>Pre/Corequisite:</i> MATH 123
		PHYS 254	Modern Physics and Light (3)	PHYS 152 or EE 210. <i>Pre/Corequisite:</i> MATH 224
		PHYS 255	Laboratory on Light and Modern Physics (1)	<i>Pre/Corequisite:</i> PHYS 254
		MATH 122	Calculus I (4)	Appropriate algebra/calculus placement, or MATH 111 and either MATH 112B or 113
		MATH 123	Calculus II (4)	MATH 122
		MATH 224	Calculus III (4)	MATH 123
		ASTR 100	Astronomy (3)	<i>Corequisites:</i> One course from GE Category B2 and ASTR 100L
		CHEM 111A	General Chemistry I (5)	Passing score on CPT or other measures. <i>Pre/Corequisite:</i> MATH 112A or higher;
		CHEM 111B	General Chemistry II (5)	CHEM 111A, and MATH 112B or higher
		GEOL 102	General Geology (3)	<i>Pre/Corequisite:</i> GE A1 requirement, H.S. math
		GEOL 104	Geology Laboratory (1)	<i>Pre/Corequisite:</i> GE A1 requirement, H.S. math, GEOL 102
		GEOL 160	Introduction to Oceanography (3)	
		BIOL 211	Introduction to Evolution and Diversity (4)	<i>Pre/Corequisite:</i> CHEM 111A
		BIOL 212	Introduction to Cell and Molecular Biology (4)	BIOL 211 and CHEM 111A. <i>Pre/Corequisite:</i> CHEM 111B
		BIOL 213	Introduction to Ecology and Physiology (4)	BIOL 211 and 212 and CHEM 111B

UPPER DIVISION COURSES (See major faculty advisor and education advisor)Take **ALL** of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 310	Analytic Mechanics (3)	PHYS 151. <i>Corequisite:</i> MATH 247 or 364A or 370A
		PHYS 340A	Electricity and Magnetism I (3)	PHYS 152 and 310. <i>Pre/Corequisite:</i> MATH 370A or 364A
		PHYS 476	Modern Optics Laboratory (1)	PHYS 340A
		SCED 403	Integrated Science (3)	Completion of all credential breadth requirements for the Single Subject Teaching Credential in Science, three-fourths of the credential specializations courses, and consent of the instructor.
		SCED 404	Nature of Science and Scientific Reasoning for Teachers (3)	Minimum of 9 units of science (introductory level or higher) or consent of the instructor.
		EDSS 300C	Introduction to Teaching-Science (3)	Advanced sophomore or junior standing.
		EDSS 450C	Curriculum and Methods in Teaching Science (3)	EDSS 300C; admission to the Single Subject Credential Program or permission of the Single Subject Credential Program University Coordinator. Required prior to student teaching
		EDSE 435	U.S. Secondary Schools: Intercultural Education (3)	EDSS 300 (A-S); or admission in the Single Subject Credential Program; or consent of University Coordinator of the Single Subject Credential Program
		EDSE 436	Curriculum, Instruction, Assessment and Classroom Management (3)	EDSS 300 (A-S); or admission in the Single Subject Credential Program; or consent of University Coordinator of the Single Subject Credential Program
		EDSE 457	Reading and Writing in Secondary School (3)	EDSS 300 (A-S); or admission in the Single Subject Credential Program; or consent of University Coordinator of the Single Subject Credential Program

Choose **ONE** of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 364A	Ordinary Differential Equations I (3)	MATH 224. <i>Pre/Corequisite:</i> MATH 247
		MATH 370A	Applied Mathematics I (3)	MATH 123. Not open to Freshman

Choose **ONE** of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 320	Thermodynamics (3)	PHYS 152. <i>Pre/Corequisite:</i> PHYS 254
		PHYS 422	Statistical Physics (3)	PHYS 310 and 320 and 350

Choose **ONE** of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 380	Electronics (3)	PHYS 152
		PHYS 496	Special Problems in Physics (3)	Instructor consent and senior standing