

BACHELOR OF SCIENCE IN PHYSICS
Single Subject Preliminary Credential in Physics (180 units)
Major Requirements Worksheet
2012-2013 Catalog

Name: _____

Student ID: _____

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. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification.

Grade	Course #	Course Title	Need to take	Prerequisites
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Take ALL of the following courses

	PHYS 151	Mechanics and Heat (4)		MATH 122 Pre/Corequisite
	PHYS 152	Electricity and Magnetism (4)		PHYS 151; Pre/Corequisite: MATH 123
	PHYS 254	Modern Physics and Light (3)		PHYS 152 <i>or</i> EE 210; Pre/Corequisite: MATH 224
	PHYS 255	Laboratory on Light and Modern Physics (1)		Pre/Corequisite: PHYS 254
	MATH 122	Calculus I (4)		MDPT placement** <i>or</i> MATH 111* <i>and</i> 113*, <i>or</i> MATH 117*
	MATH 123	Calculus II (4)		MATH 122*
	MATH 224	Calculus III (4)		MATH 123* <i>or</i> 222*
	ASTR 100	Astronomy (3)		Corequisite: One course from GE Category B.2 <i>and</i> ASTR 100L
	CHEM 111A	General Chemistry I (5)		A passing score on the CPT**, <i>and</i> either MATH 113*, <i>or</i> 117*, <i>or</i> 119A*, <i>or</i> 122*. Also 1 year of HS chemistry**
	CHEM 111B	General Chemistry II (5)		CHEM 111A*
	GEOL 102	General Geology (3)		Pre/Corequisite: A course that fulfills the A.1. GE requirement and 3 years of HS mathematics**
	GEOL 104	Geology Laboratory (1)		Pre/Corequisite: A course that fulfills the A.1. GE requirement and 3 years of HS mathematics** and concurrent or prior enrollment in GEOL 102
	GEOL 160	Introduction to Oceanography (3)		Pre/Corequisite: A course that fulfills the A.1. GE requirement and 3 years of HS mathematics**
	BIOL 211	Evolution and Diversity (4)		CHEM 111A Pre/Corequisite
	BIOL 212	Introduction to Cell and Molecular Biology (4)		BIOL 211* <i>and</i> CHEM 111A*
	BIOL 213	Introduction to Ecology and Physiology (4)		BIOL 212* <i>and</i> CHEM 111b*

Upper Division

For upper division advising, see your Faculty Advisor and Education Advisor. **Take All of the courses below:**

	PHYS 310	Analytic Mechanics (3)		PHYS 151. Corequisite: MATH 364A <i>or</i> 370A
	PHYS 340A	Electricity and Magnetism I (3)		PHYS 152, 310. Pre/Corequisite MATH 370A <i>or</i> 363A
	PHYS 476	Modern Optics with Laboratory (3)		PHYS 340A
	SCED 403	Integrated Science (3)		Completion of all credential breadth requirements for the Single Subject Teaching Credential Program in Science, 3/4s of the credential specializations courses, and consent of the instructor.

*Must receive a "C" or better ** See the catalog for more detail

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	SCED 404	The Nature of Science and Scientific Reasoning for Teachers (3)		Completion of at least 3/4s of the credential specialization courses for Single Subject Teaching Credential Program in Science, and 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, C, D, F, G, H, M, N, P, or 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, C, D, F, G, H, M, N, P, or 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, C, D, F, G, H, M, N, P, or S); or admission in the Single Subject Credential Program; or consent of University Coordinator of the Single Subject Credential Program

Select **ONE** course from **EACH** of the following pair:

Choose ONE

	MATH 364A	Ordinary Differential Equations I (3)		MATH 222 or 224, and pre/Corequisite MATH 247
	MATH 370A	Applied Mathematics I (3)		MATH 123. Not open to Freshman

Choose ONE

	PHYS 320	Thermodynamics (3)		PHYS 152. Pre/Corequisite, PHYS 254
	PHYS 422	Statistical Physics (3)		PHYS 310, 320, 350

Choose ONE

	PHYS 380	Electronics (4)		PHYS 152
	PHYS 496	Special Problems in Physics (1-3)		Consent of the instructor and senior standing