BACHELOR OF SCIENCE IN PHYSICS
Single Subject Preliminary Credential in Physics (180 units)
Major Requirements Worksheet
2014-2015 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.

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.

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 151	Mechanics and Heat (4)	*Pre/Corequisite:* MATH 122
		PHYS 152	Electricity and Magnetism (4)	PHYS 151; *Pre/Corequisite:* MATH 123
		PHYS 254	Modern Physics and Light (3)	PHYS 152 *or* 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 *or* MATH 111* *and* 113*
		MATH 123	Calculus II (4)	MATH 122*
		MATH 224	Calculus III (4)	MATH 123* *or* 222*
		ASTR 100	Astronomy (3)	*Corequisites:* One course from GE Category B.2 *and* ASTR 100L
		CHEM 111A	General Chemistry I (5)	A passing score on the CPT *Corequisite:* MATH 109 or higher
		CHEM 111B	General Chemistry II (5)	CHEM 111A and MATH 113* or 115* or 117* or 119A* or 122*
		GEOL 102	General Geology (3)	A course that fulfills the A.1. GE requirement and 3 years of HS mathematics**
		GEOL 104	Geology Laboratory (1)	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)	*Pre/Corequisite:* CHEM 111A*
		BIOL 212	Introduction to Cell and Molecular Biology (4)	BIOL 211* *and* CHEM 111A*
		BIOL 213	Introduction to Ecology and Physiology (4)	BIOL 212* *and* CHEM 111B*

UPPER DIVISION COURSES (See major Faculty Advisor and Education Advisor.)

Take ALL of the following:

		PHYS 310	Analytic Mechanics (3)	PHYS 151. *Corequisite:* MATH 364A *or* 370A
		PHYS 340A	Electricity and Magnetism I (3)	PHYS 152, 310. *Pre/Corequisite*: MATH 370A *or* 363A
		PHYS 476	Modern Optics Laboratory (1)	PHYS 340A

*Grade of "C" or better
**See catalog for more detail(s)

Updated 5/23/14 LB

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Take ALL of the following:

		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)	Completion of at least three-fourths 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:

		MATH 364A MATH 370A	Ordinary Differential Equations I (3) ***OR*** Applied Mathematics I (3)	MATH 222 or 224; and *Pre/Corequisite:* MATH 247 MATH 123* Not open to Freshman

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

		PHYS 380 PHYS 496	Electronics (3) ***OR*** Special Problems in Physics (3)	PHYS 152 Consent of the instructor and senior standing.