CNSM Academic Advising Center
College of Natural Sciences and Mathematics
California State University Long Beach
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BACHELOR OF SCIENCE IN PHYSICS
OPTION IN MATERIALS SCIENCE
FOUR YEAR DEGREE WORKSHEET
2017-2018 Catalog

This degree worksheet is intended to help you develop a balanced course schedule while completing your degree within 4 years. The same sequence of courses (with fewer courses each semester) is also recommended for students completing their degree in 5 or 6 years. This worksheet is not intended to replace academic advising with your assigned advisor. Students should consult with their assigned advisor to determine the appropriate sequence of required courses and electives based on their academic goals.

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

Year 1

Semester	Course #	Course Title (Units)	Prerequisites	Notes
1	MATH 122	Calculus I (4)	MATH 111, 113	
	PHYS 151	Mechanics and Heat (4)	*Corequisite:* MATH 122	
	GE (area A1)	Written Communication (3)		
	GE (area C,D,E)	Other Exploration (3)		
	NSCI 190A	Experience Success Program 1 (1)		Fall only
2	MATH 123	Calculus II (4)	MATH 122	
	PHYS 152	Electricity and Magnetism (4)	PHYS 151. *Corequisite:* MATH 123	
	GE (area A2)	Oral Communication (3)		
	GE (area A3)	Critical Thinking (3)		
	Elective	Elective (1)		

Year 2

Semester	Course #	Course Title (Units)	Prerequisites	Notes
3	MATH 224	Calculus III (4)	MATH 123	
	PHYS 254	Applied Modern Physics (3)	PHYS 152 and MATH 123. *Corequisite:* MATH 224 and PHYS 255	
	PHYS 255	Laboratory on Light & Modern Physics (1)	PHYS 152 and Math 123. *Corequisite:* MATH 224 and PHYS 254	
	GE (area C,D,E)	Other Exploration (3)		
	GE (area C,D,E)	Other Exploration (3)		
	Elective	Elective (1)		
4	MATH 247	Introduction to Linear Algebra (3)	MATH 123	
	PHYS 360	Physics with Symbolic Algebra Software (3)	PHYS 254. *Corequisite:* MATH 247	
	PHYS 380	Electronics (4)	PHYS 152	Spring only
	GE (area C,D,E)	Other Exploration (3)		
	Elective	Elective (1)		

Year 3

Semester	Course #	Course Title (Units)	Prerequisites	Notes
5	MATH 364A	Ordinary Differential Equations I (3)	MATH 224 and *Pre/Corequisite:* 247	
	PHYS 310	Analytic Mechanics (3)	PHYS 151. *Corequisite:* MATH 364A or 370A	Fall only
	PHYS 320	Thermodynamics (3)	PHYS 152, *Pre/Corequisite:* PHYS 254	Fall only
	GE (area C,D,E)	Other Exploration (3)		
	Elective	Elective (3)		

Semester	Course #	Course Title (Units)	Prerequisites	Notes
6	PHYS 340A	Electricity and Magnetism I (3)	PHYS 152 and 310; *Pre/Corequisite:* MATH 364A or 370A	Spring only
	PHYS 350	Modern Physics (3)	PHYS 310; MATH 370A or MATH 364A	Spring only
	CHEM 111A	General Chemistry (5)	passing score on CPT. *Corequisite:* MATH 109 or higher	
	GE (area C,D,E)	Other Exploration (3)		
	Upper Division Elective	Math (3)		

Year 4

Semester	Course #	Course Title (Units)	Prerequisites	Notes
7	PHYS 340B	Electricity and Magnetism II (3)	PHYS 340A	Fall only
	PHYS 450	Quantum Physics (3)	PHYS 310, 340A, and 350	Fall only
	GE (area B1a)	Life Science (3-4)		BIaNL is okay
	PHYS 385	Materials Science (3)	CHEM 111A and PHYS 152 and either CHEM 111B or PHYS 320	Recommend CHEM 111B
	GE Capstone (area F)	General Education & Foundation (3)	GE Written Communication (A1), GE Critical Thinking (A3), and GE Oral Communication (A2) and MATH 122 (B2)	
8	Upper Division Elective	Physics (3)		
	GE (area C,D,E)	Other Exploration (3)		
	PHYS 385L	Materials Science Lab (2)	CHEM 111A and PHYS 152 and either CHEM 111B or PHYS 320	
	GE Capstone (area F)	General Education & Foundation (3)	GE Written Communication (A1), GE Critical Thinking (A3), and GE Oral Communication (A2) and MATH 122 (B2)	
	GE Capstone (area F)	General Education & Foundation (3)	GE Written Communication (A1), GE Critical Thinking (A3), and GE Oral Communication (A2) and MATH 122 (B2)	
	PHYS 385C	Materials Science Colloquium (1)	CHEM 111A and PHYS 152 and either CHEM 111B or PHYS 320	