

2009-11 Cal Poly Catalog

Physics Department**BS PHYSICS**Flowchart

☐ 60 units upper division

☐ GWR

☐ 2.0 GPA

☐ USCP

* = Required in Major; also satisfies GE

Course sequencing: See flowcharts at

www.csmadvising.calpoly.edu

Note: No major, support or concentration courses may be taken as credit/no credit.

MAJOR COURSES

PHYS 141 General Physics IA.....	4
PHYS 132 General Physics II (B3 & B4)*	4
PHYS 133 General Physics III.....	4
PHYS 202 Physics on the Computer.....	4
PHYS 206 Instrumentation in Experimental Phys.	3
PHYS 211 Modern Physics I	4
PHYS 212 Modern Physics II.....	4
PHYS 256 Electrical Measurements Laboratory	1
PHYS 301 Thermal Physics I.....	4
PHYS 302 Classical Mechanics I	4
¹ PHYS 322 Vibrations and Waves	3
PHYS 340 Quantum Physics Laboratory I.....	2
PHYS 341 Quantum Physics Laboratory II	2
PHYS 405 Quantum Mechanics I	4
PHYS 408 Electromagnetic Fields and Waves I	4
PHYS 461 Senior Project I or PHYS 463 Senior Project – Lab Research I.....	2
PHYS 462 Senior Project II or PHYS 464 Senior Project – Lab Research II.....	2
CHEM 127 General Chemistry	4
CHEM 128 General Chemistry	4
MATH 141 Calculus I (B1)*	4
MATH 142 Calculus II (B1)*	4
MATH 143 Calculus III	4
MATH 241 Calculus IV	4
MATH 244 Linear Analysis I	4
MATH 304 Vector Analysis	4
MATH 344 Linear Analysis II.....	4
Advanced Physics electives or Concentration courses (see below)	21
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GENERAL EDUCATION (GE)

72 units required, 12 of which are specified in Major.

→See page 50 for complete GE course listing.

→Minimum of 12 units required at the 300 level.

Area A Communication (12 units)

A1 Expository Writing	4
A2 Oral Communication	4
A3 Reasoning, Argumentation, and Writing.....	4

Area B Science and Mathematics (4 units)

B1 Mathematics/Statistics * 8 units in Major.....	0
B2 Life Science	4

B3 Physical Science * 4 units in Major

B4 One lab taken with either a B2 or B3 course

Area C Arts and Humanities (20 units)

C1 Literature	4
C2 Philosophy	4
C3 Fine/Performing Arts	4
C4 Upper-division elective	4
Area C elective (Choose one course from C1-C4)	4

Area D/E Society and the Individual (20 units)

D1 The American Experience (40404)	4
D2 Political Economy	4
D3 Comparative Social Institutions	4
D4 Self Development (CSU Area E)	4
D5 Upper-division elective	4

Area F Technology Elective (upper division) (4 units)

	60
FREE ELECTIVES	8
	180

ADVANCED PHYSICS ELECTIVES OR CONCENTRATION

Select *either* the advanced physics electives *or* one of the concentrations.

Advanced Physics Electives

Select two from: PHYS 323, 342, 357, 417, 422, 423, 452, **ASTR 444. (12/15/10)**

Select one from: PHYS 424 or MATH 418.

Select courses at the 300 or 400 level with the prefixes PHYS, ASTR (but not ASTR 324), GEOL, MATH, STAT, CSC (but not CSC 302 nor CSC 310). One of the following may also be chosen: CSC 101, 231, 234, **235**. At least 9 of these elective units must have the PHYS prefix. All courses must be taken for a letter grade. **(11/22/11)**

For students anticipating an industrial career, PHYS 323, 357, 412, 413, 423, and 452 are suggested.

For students anticipating graduate work in physics PHYS 303, 401, 406, 409, 424, and MATH 408 are suggested. PHYS 357 is suggested for students who anticipate becoming experimental physicists.

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¹ Students in Electro-optics Concentration should take PHYS 323 instead of PHYS 322.

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Electronics Concentration

Students are not be allowed to enroll in EE 228 until they have a) completed PHYS 357 and MATH 344, and b) received the approval of advisors in both Physics and Electrical Engineering. Students are then allowed to enroll in EE courses with physics courses substituting for EE prerequisites.

PHYS 357 Advanced Instrumentation in

Experimental Physics.....	3
EE 228 Continuous-Time Signals and Systems.....	4
EE 302 Classical Control Systems.....	3
EE 328 Discrete Time Signals and Systems.....	3
EE 342 Control Systems Laboratory	1
EE 368 Signals and Systems Laboratory.....	1
EE 336 Microprocessor System Design <i>or</i> EE 306 <i>and</i> EE 346 Semiconductor Device Electronics and Laboratory.....	4
Elective chosen from Advanced Physics Electives	2
(see above)	
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Electro-optics Concentration

Students following this concentration should take PHYS 323 instead of PHYS 322 as a major requirement.

Students are not allowed to enroll in EE 228 until they have a) completed PHYS 357 and MATH 344, and b) received approval of advisors in both Physics and Electrical Engineering. Students are then allowed to enroll in EE courses with physics courses substituting for EE prerequisites.

PHYS 357 Advanced Instrumentation in Exp Physics	3
PHYS 423 Advanced Optics	4
EE 228 Continuous-Time Signals and Systems.....	4
EE 403 Fiber Optics Communication.....	3
EE 418 Photonic Engineering.....	3
EE 443 Fiber Optics Laboratory.....	1
EE 458 Photonic Engineering Laboratory.....	1
Elective chosen from Advanced Physics Electives	2
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