

PHYSICS: General Physics Option

Bachelor of Science (Upper Division Transfer 2-year Roadmap-Fall Even Year)

The purpose of the degree roadmap is to serve as a guide for planning one's academic coursework required to complete a specific major semester by semester. **The roadmap is subject to change and is NOT to be considered a replacement for advisement with an academic advisor.** Students who choose majors that require a minor should take this into consideration when customizing their own academic plan. *See reverse side for additional information.*

Upper Division Transfer Requirements:

1. Complete a minimum 60 transferable semester (or 90 quarter) units with a 2.0 GPA (nonresidents require 2.4 GPA). Within those 60 units, complete a minimum of 30 (or 45 quarter) units of General Education courses with a 2.0 GPA. A "C" grade or better is required for Oral Communication, Written Communications (English Composition), Logic or Critical Thinking and Mathematics/Quantitative Reasoning.
2. Complete and submit a CSU Application for Admission by the posted deadline through CSU Mentor at www.csumentor.edu.
3. Submit official transcripts from all colleges attended.
4. Students applying to an impacted program may have to meet supplementary requirements.
5. The following degree roadmap assumes you have junior standing (60 units) and have completed all lower division General Education courses.
6. Minimum of 120 units are required for completion of degree, 30 of which must be taken in residence at CSUDH.

<u>Course</u>	<u>Title</u>	<u>Units</u>	<u>Course</u>	<u>Title</u>	<u>Units</u>
<u>Fall Semester - Even Year:</u>			<u>Spring Semester - Odd Year:</u>		
GE F1*	Studies in the Humanities area	3	PHY 310	Theoretical Mechanics I	3
PHY 306	Mathematical Methods in Physics	3	PHY 341	Advanced Laboratory	2
PHY 460	Quantum Mechanics I	3	elective	select TWO upper division PHY courses	6
elective	select ONE upper division course in CHE, CSC, MAT or PHY	3			
GWAR	ENG 350 or GWE	0-3			
<u>Fall Semester - Odd Year:</u>			<u>Spring Semester - Even Year:</u>		
PHY 333	Analog Electronics	3	GE F3/G*	Studies in Social Sciences area/ Cultural Pluralism area	3
PHY 350	Electromagnetic Theory I	3	PHY 320	Physical Optics	3
GE F2*	Studies in the Natural Sciences area	3	PHY 346	Thermal Physics	3
Elective	select ONE upper division PHY course	3	Elective	select ONE upper division PHY course	3
Elective	select ONE upper division course in CHE, CSC, MAT or PHY	3			
					Total Units: 50-53

** A minimum of 120 units are required for completion of degree.

* See reverse side for General Education (GE) course requirements.

NOTE: Please review 4-year roadmap to verify completion of lower-division courses.

See University Catalog for information on the Graduate Writing Assessment Requirement (GWAR)

Physics Department

NSM B-202

(310) 243-3591

Faculty

John Price, Department Chair, Professor of Physics
Ph.D., University of California, Los Angeles

James Hill, Professor of Physics
Ph.D., University of Pennsylvania

Kenneth Ganezer, Professor of Physics
Ph.D., University of California, Los Angeles

Alice Newman, Professor of Physics
Ph.D., University of Alberta, Edmonton

Career Options

Students can find technical positions in industry, government or teaching; or pursue advanced degrees for research, design, or analysis in physics, engineering or related fields. The campus is surrounded with electronics, aerospace, and semiconductor companies, among others, who hire physicists to work in applications of optics, electrical engineering, biophysics, computer science, geophysics, aerospace, and astronomy.

NOTE: This is a single field major. No minor required. Please contact the Physics Department for further information: (310) 243-3591.

Occasionally, courses listed on the roadmaps may be offered in only specific semesters or on an as needed basis. Students are strongly urged to refer to the University Catalog, Class Schedule, or consult with an academic advisor each semester to ensure that they are progressing toward graduation in as timely a manner as possible. Please contact the Physics Department for further information: (310) 243-3591.

General Education (GE) Requirements*A. Basic Skills:**

Courses must be passed with a grade of "C" or higher.
GE A1: ENG 110, ENG 111 (both required)
GE A2: PHI 120 or PSY 110
GE A3: THE 120
GE A4: CSC 101 or LIB 150 (optional category)

B. Area of the Natural Sciences and Quantitative Reasoning:

Select one course from each category below.
GE B1: CHE 102, EAR 100, GEO 200, PHY 100
GE B2: ANT 101 or BIO 102
GE B3: BIO 103 or EAR 101
GE B4: MAT 105, 131, 153, 171, 191

C. Area of the Humanities:

Select one course from each category below.
In categories 2 and 3, select courses from different departments.
GE C1: HUM 200
GE C2: ART 100, ART 101, COM 130, DAN 130, MUS 101, MUS 110, THE 100, THE 160
GE C3: AFS 200, AFS 231, APP 101, CHS 100, ENG 230, FRE 220, HUM 212, PHI 101, PHI 102, SPA 151, SPA 221

D. Area of the Social Sciences:

Select one course from each category below.
In categories 1 and 2, select courses from different departments.
GE D1: AFS 212, ANT 100, PSY 101, SOC 101, SOC 102
GE D2: ANT 102, GEO 100, HIS 120, HIS 121, POL 100
GE D3: HIS 101
GE D4: POL 101

E. Objectives for Lifelong Learning and Self-Development

Select one course from the following.
GE E: HEA 100, HSC 201, KIN 235, REC 100, UNV 101

F. Upper Division Integrative Studies:

Select one course from each category. Courses in this category are to be taken after 60 semester units and ALL lower division General Education courses have been completed.
GE F1: HUM 310, 312, 314
GE F2: SMT 310, 312, 314, 416
GE F3: SBS 316, 318**
GE F4: Students may select a course from this category to satisfy one or more of the upper division G.E. requirements from F1-F3 courses above.

G. Cultural Pluralism Requirement:

Within their General Education selections or within other requirements, all students must take one course which addresses cultural pluralism (i.e. the impact of the integration of cultures).
GE G: ANT 312, 336, 337, 338, 339, 340, 342, 389, CHS 300, HIS 305, MUS 401, PHI 383, SBS 318, SOC 322, SOC 331, SOC 383

**SBS 318 satisfies both F3 and G areas. Students will receive only three units credit, but will have met both requirements.

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PHY 306	Mathematical Methods in Physics	3	PHY 346	Thermal Physics	3
PHY 333	Analog Electronics	3	Elective	select ONE upper division PHY course	3
PHY 350	Electromagnetic Theory I	3	Elective	select ONE upper division course in CHE, CSC, MAT or PHY	3
GWAR	ENG 350 or GWE	0-3			
<u>Fall Semester - Even Year:</u>			<u>Spring Semester - Odd Year:</u>		
GE F2*	Studies in the Natural Sciences area	3	GE F3/G*	Studies in Social Sciences area/ Cultural Pluralism area	3
PHY 460	Quantum Mechanics I	3	PHY 310	Theoretical Mechanics I	3
Elective	select TWO upper division PHY courses	6	PHY 341	Advanced Laboratory	2
Elective	select ONE upper division course in CHE, CSC, MAT or PHY	3	Elective	Select ONE upper division PHY course	3
					Total Units: 50-53

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GE D2: ANT 102, GEO 100, HIS 120, HIS 121, POL 100
GE D3: HIS 101
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