

PHYSICS: Physical Science Option

Bachelor of Science (First-Time Freshman 4-year Roadmap - 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.*

Entry Level Skills Tests:

ENGLISH

EPT Waiver: SAT I 550, ACT 24, AP 3 or EAP
 000-140 ENG 88
 141-146 ENG 99
 147 ENG 110

MATH

ELM Waiver: SAT I & II 550, ACT 23, AP 3 or EAP
 00-40 MAT 3
 42-48 MAT 9
 50 G.E. Math

<u>Course</u>	<u>Title</u>	<u>Units</u>	<u>Course</u>	<u>Title</u>	<u>Units</u>
<u>First Semester:</u>			<u>Second Semester:</u>		
GE A1*	Freshman Composition I	3	GE A1*	Freshman Composition II	3
GE E*	The Whole Person area	3	GE A3*	Oral Communication area	3
PHY 130	General Physics I	5	PHY 132	General Physics II	5
MAT 191	Calculus I (meets GE B4*)	5	MAT 193	Calculus II	5
<u>Third Semester:</u>			<u>Fourth Semester:</u>		
GE C2*	Humanities - Art Courses area	3	GE A2*	Logic/Critical Reasoning area	3
GE D1*	Perspectives on Individuals, Groups, & Society area	3	GE C3*	Humanities - Letters Courses area	3
PHY 134	General Physics	4	EAR 100	Physical Geology (meets GE B1*)	3
MAT 211	Calculus III	5	& EAR 101	Physical Geology Lab (meets GE B3*)	1
PHY 333	Analog Electronics	3	PHY 320	Physical Optics	3
			elective	select ONE from upper division PHY, MAT, EAR and/or CSC course	3
<u>Fifth Semester:</u>			<u>Sixth Semester:</u>		
GE D2*	Global & Historical Perspectives area	3	GE B2*	Life Science area	3
GE D3*	Perspectives on U.S. History area	3	GE D4*	Perspectives on U.S. and California Government area	3
CHE 110	General Chemistry I	5	CHE 112	General Chemistry II	5
EAR 200	Earth History and Evolution	3	PHY 346	Thermal Physics	3
& EAR 201	Earth History Laboratory	1			
GWAR	ENG 350 or GWE	0-3			
<u>Seventh Semester:</u>			<u>Eighth Semester:</u>		
GE C1*	Humanities area	3	GE F2*	Studies in the Natural Sciences area	3
GE F1*	Studies in the Humanities area	3	GE F3/G*	Studies in Social Sciences area/ Cultural Pluralism area	3
CSC 101, 111 or 121	select ONE course	3-4	PHY 341	Advanced Laboratory	2
elective	select TWO from upper division PHY, MAT, EAR and/or CSC courses	6	elective	select ONE from upper division PHY, MAT, EAR and/or CSC course	5

Total Units: 123-127

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

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

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.

PHYSICS: Physical Science Option

Bachelor of Science (First-Time Freshman 4-year Roadmap - Odd 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.*

Entry Level Skills Tests:

ENGLISH

EPT Waiver: SAT I 550, ACT 24, AP 3 or EAP
 000-140 ENG 88
 141-146 ENG 99
 147 ENG 110

MATH

ELM Waiver: SAT I & II 550, ACT 23, AP 3 or EAP
 00-40 MAT 3
 42-48 MAT 9
 50 G.E. Math

<u>Course</u>	<u>Title</u>	<u>Units</u>	<u>Course</u>	<u>Title</u>	<u>Units</u>
<u>First Semester:</u>			<u>Second Semester:</u>		
GE A1*	Freshman Composition I	3	GE A1*	Freshman Composition II	3
GE E*	The Whole Person area	3	GE A3*	Oral Communication area	3
PHY 130	General Physics I	5	PHY 132	General Physics II	5
MAT 191	Calculus I (meets GE B4*)	5	MAT 193	Calculus II	5
<u>Third Semester:</u>			<u>Fourth Semester:</u>		
GE C2*	Humanities - Art Courses area	3	GE A2*	Logic/Critical Reasoning area	3
GE D1*	Perspectives on Individuals, Groups, & Society area	3	GE C3*	Humanities - Letters Courses area	3
PHY 134	General Physics	4	EAR 100	Physical Geology	3
MAT 211	Calculus III	5	& EAR 101	Physical Geology Lab	1
CSC 101, 111 or 121	select ONE course	3-4	PHY 346	Thermal Physics	3
			elective	select ONE from upper division PHY, MAT, EAR and/or CSC course	3
<u>Fifth Semester:</u>			<u>Sixth Semester:</u>		
GE D2*	Global & Historical Perspectives area	3	GE B2*	Life Science area	3
PHY 333	Analog Electronics	3	PHY 320	Physical Optics	3
CHE 110	General Chemistry I	5	CHE 112	General Chemistry II	5
EAR 200 & EAR 201	Earth History and Evolution Earth History Laboratory	3 1	PHY 341	Advanced Laboratory	2
GWAR	ENG 350 or GWE	0-3			
<u>Seventh Semester:</u>			<u>Eighth Semester:</u>		
GE C1*	Humanities area	3	GE F2*	Studies in the Natural Sciences area	3
GE F1*	Studies in the Humanities area	3	GE F3/G*	Studies in Social Sciences area/ Cultural Pluralism area	3
GE D3*	Perspectives on U.S. History area	3	GE D4*	Perspectives on U.S. and California Government area	3
elective	select TWO from upper division PHY, MAT, EAR and/or CSC courses	6	elective	select ONE from upper division PHY, MAT, EAR and/or CSC course	5

Total Units: 126-127

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

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

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.