**PHYSICS DEGREE REQUIREMENTS**

### Basic Requirements
- Math 2A____2B____  
- 2D/H2D____2E/H2E_____  
- 2J_____3D____  
- Physics 7C____ D____ E_____  
- 7LC____7LD____  
- 50____60____  
- 61A____61B____  
- 52A____52B____52C____  

Physics 53_____ (or another programming course)

Physics 111A_____B____  
Physics 112A_____B____  
Physics 113A___  
Physics 115A___  
Physics 121____  
Physics 125A___  
Physics 194____  

Five additional coherently related four-unit courses (these are normally satisfied by tracks, concentrations, or specializations)*.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

*Note: Tracks, concentrations and specializations usually require **six or more** coherently related courses.

### Concentration in Applied Physics

In place of the five coherently related courses students must choose **six** coherently related Engineering courses. These six courses must be approved in advance by the Department of Physics and Astronomy.  
(Note: All upper-division Engineering courses require lower-division prerequisites which should be started in the Freshman and Sophomore years.):  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Specialization in Astrophysics

In place of the five coherently related courses, students take:  

Physics 139____  
and **Three** astrophysics courses from:  
Physics 137____138____  
144____145____  
and **Any two** approved upper division Physics electives  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Concentration in Biomedical Physics

In place of the five coherently related courses, students take:  

Bio Sci 97____ 98____ 99____  
Chem 1A____ B____ C____  
1LC_____LD____  
Chem 51A____51B____; or  
H52A____H52B____  

### Concentration in Computational Physics

In place of the five coherently related courses, students take:  

ICS 21____22____23____  
Math 105A____105LA____  
Math 105B____105LB____  
Math 107_____107L______  

---

### Concentration in Philosophy of Physics

In place of the five coherently related courses, students take:  

**One** course selected from:  
Philosophy or LPS 30_____  
104____105A____B____C____  
Math 150____151____152_____  

**One** course selected from:  
History 60_____135B____  
135C____or an approved alternative  

**Three** courses selected from:  
Philosophy or LPS 102____121____  
141A____141B____141C____141D____  

The following **three** courses:  
Philosophy or LPS 31____  
Philosophy or LPS 140____  
Physics 113B____  

### Concentration in Physics Education

In place of the five coherently related courses, students take:  

Physics 193____  
Educ 55____  
Phy Sci 5____105____  
(Phy Sci 106 is recommended)  

**Four** courses selected from:  
Bio Sci 1A_____or  
Bio Sci 93____94____  
Chem 1A____1B____1C____  
ESS 1_____or 25____.  
ESS 7____.  
Physics 20A____20B____  
+++

**Secondary Teaching Certification Option:**  

With additional coursework and field experience, students who complete the Concentration in Physics Education can also earn a California Preliminary Single Subject Teaching Credential in four years with careful, early planning.  

All of the following are required:  

LPS 60____ Educ 109____  
**Educ 143A____143B____148____  
Educ 158 (2 quarters)____  

**Educ 143A-B and 148 will be accepted in lieu of Physics 125A and 194.**