

# CHEMICAL PHYSICS

## Requirements for the **CHEMICAL PHYSICS B.S.** Degree

The Chemical Physics major applies the concepts and quantitative methods of physics to the descriptions of atoms and molecules, analyzes matter as a statistical assembly of molecular building blocks, and develops and exploits physical (largely spectroscopic) experimental tools with which to test and refine such theories.

The chemical physics major is designed as a preparation for graduate work in chemistry, physics, or other interdisciplinary areas.

**The following courses must be taken for a letter grade:**

### ***Lower-Division Requirements***

1. General chemistry including laboratory (Chem. 6A-6C or 6AH-6CH, and 6BL, or equivalent).
2. Calculus and linear algebra (Math. 20A-20F, or equivalent).
3. Calculus-based physics including laboratory (Phys. 2A-2D or equivalent, and either 2BL, 2CL or 2DL. Phys. 2CL is recommended).

It is recommended that the above requirements be completed by the end of the sophomore year.

### ***Upper-Division Requirements***

1. Two quarters of organic chemistry (Chem. 140A-B or 141A-B).
2. One year of physical chemistry (Chem. 131-133).
3. Two quarters of inorganic chemistry (Chem. 120A-120B). Chem. 114A can substitute for Chem. 120B.
4. Six upper-division chemistry labs: Chem. 100A, 100B, 143AM or 143A, 143B or 143C, 105A, and one of the following: 105B, 112A, 112B, 123, 143B, 143C, or 143D.
5. Molecular spectroscopy (Chem. 135).
6. Partial differential equations (Math. 110).
7. Two quarters of physics (Phys. 110A-110B, or Phys. 100A-100B).
8. One additional course in physical chemistry or related areas as approved by the department. Chem. 199 may be petitioned.

## Suggested Program for Chemical Physics B.S. Major

(Talk to your college for planning general education courses)

Many courses have enforced prerequisites or are offered once per year.

| FALL  | WINTER   | SPRING   |
|---|--|--|
| <b>FRESHMAN YEAR</b>                          |  |  |
| Chem. 6A<br>Math. 20A                         | Chem. 6B<br>Math. 20B                              | Chem. 6C<br>Chem. 6BL<br>Math. 20C<br>Phys. 2A |
| <b>SOPHOMORE YEAR</b>                         |  |  |
| Chem. 140A *<br>Math. 20D<br>Phys. 2B         | Chem. 140B<br>Chem. 143AM<br>Math. 20E<br>Phys. 2C | Chem. 100A<br>Math. 20F<br>Phys. 2D            |
| <b>JUNIOR YEAR</b>                            |  |  |
| Chem. 131 *<br>Chem. 143C<br>Phys. 110A/ 100A | Chem. 132<br>Phys. 2CL<br>Phys. 110B/100B          | Chem. 100B<br>Chem. 133<br>Math. 110           |
| <b>SENIOR YEAR</b>                            |  |  |
| Chem. 105A<br>Chem. 120A                      | Chem. 120B**<br>Elective Lab                       | Chem. 135<br>Elective                          |

\* Best time to study abroad. Education Abroad Program deadlines for upcoming year vary by country. See EAP website. See the Chem/Biochem Undergraduate Advisor for assistance in planning to study abroad.

\*\* Chem. 114A (fall quarter) may be substituted.

### RESOURCES

To be successful in your academic career, you will need to make the most of the services available to you at UCSD. Get connected to the services available to you as soon as possible to make the most of your education!

#### **American Chemical Society-Student Affiliates**

Email: [acssa@ucsd.edu](mailto:acssa@ucsd.edu)

[www-ac.s.ucsd.edu/~acssa](http://www-ac.s.ucsd.edu/~acssa)

**UCSD Web Site:** [www.ucsd.edu](http://www.ucsd.edu)

#### **UCSD General Catalog**

[www.ucsd.edu/catalog](http://www.ucsd.edu/catalog)

purchase at UCSD Bookstore, 858-534-7323

#### **UCSD Career Services Center**

858-534-3750, [www-csc.ucsd.edu](http://www-csc.ucsd.edu)

#### **UCSD Undergraduate Admissions**

858-534-4831, [admissions.ucsd.edu](http://admissions.ucsd.edu)

#### **Campus Walking Tours**

858-822-1455, [campustours@ucsd.edu](mailto:campustours@ucsd.edu)

#### **Education Abroad Program**

858-534-1123,

<http://pao.ucsd.edu/acadint/chemistry.htm>

#### **Undergraduate Colleges**

The colleges determine the general education requirements that you must complete in addition to your major requirements. Be sure to meet with a college adviser.

**Thurgood Marshall**, 858-534-4110,

[www.provost.ucsd.edu/marshall](http://www.provost.ucsd.edu/marshall)

**John Muir**, 858-534-3580,

[www.provost.ucsd.edu/muir](http://www.provost.ucsd.edu/muir)

**Revelle**, 858-534-3490,

[www.provost.ucsd.edu/revelle](http://www.provost.ucsd.edu/revelle)

**Eleanor Roosevelt**, 858-534-9864,

[www.provost.ucsd.edu/roosevelt](http://www.provost.ucsd.edu/roosevelt)

**Earl Warren**, 858-534-4350,

[www.provost.ucsd.edu/warren](http://www.provost.ucsd.edu/warren)

**Sixth College**, 858-822-5955,

[www-sixth.ucsd.edu](http://www-sixth.ucsd.edu)