# ENVIRONMENTAL CHEMISTRY (CH34)

## Requirements for the ENVIRONMENTAL CHEMISTRY B.S. Degree

Students have an option of earning a B.S. in the Environmental Chemistry that is ACS-Certified or not. The ACS certified version is recommended for those who intend to apply to graduate school in Chemistry. The Non-Certified program is designed to prepare students to enter the industrial, government, or legal workforce, or to continue studies in some of the environmental sciences.

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

#### Lower-Division Requirements

1. General Chemistry, including laboratory: 6A, 6B & 6C or 6AH, 6BH & 6CH AND 7L or CHEM 7LM
2. Physics, including laboratory: 2A, 2B & 2C or 2D AND 2CL or 2DL
3. Calculus: 20A, 20B, 20C & 20D, or equivalent
4. Organic Chemistry, including laboratory: 40A & 40B or 40AH & 40BH AND 43A or 43AM

#### Upper-Division, mostly, Requirements

1. Physical Chemistry: Quantum Mechanics, Stat Thermo I, & Stat Thermo II (CHEM130-132 Recommended) Quantum Mechanics & Thermodynamics (CHEM126 & 127 Acceptable)
2. Required Laboratory Courses (must take all 3): Analytical Chemistry Laboratory (CHEM100A), Instrumental Chemistry Laboratory (CHEM100B), Physical Chemistry Laboratory (CHEM105A)
3. Environmental Chemistry I & II (CHEM 171 and 172)
4. Atmospheric Chemistry (CHEM 173)
5. Marine Chemistry (CHEM 174)
6. Environmental Electives (Select 4 of the following options. At least two of the 4 must be upper division. It is your responsibility to make sure you take the appropriate upper division electives to meet the 48-Unit Residency Requirement):
   - Biochemical Structure and Function (CHEM 114A), Inorganic Chemistry I (CHEM 120A), Organic Chemistry III (CHEM 40C), Advanced Organic Chemistry Laboratory (CHEM 143C), The Cell (BILD 1)*, Multicellular Life (BILD 2)*, Organismic and Evolutionary Biology (BILD 3)*, Ecology Laboratory (BIEB 121), Biodiversity (BIEB140), Conservation and the Human Predicament (BIEB 176), Environmental Biology (ESYS 101), Introduction to Earth and Environmental Sciences (SIO 50), California Coastal Oceanography (SIO 101), Introduction to Geochemistry (SIO 102), Introduction to Geophysics (SIO 103), Introduction to Isotope Geochemistry (SIO 144), Statistical Methods (Math 183)

Other courses (including labs and 4-units of CHEM 195 or 199) may be considered by petition.

*BILD 1, 2 and 3 must be satisfied with course work. Advanced placement (AP), A-Level, and International Baccalaureate (IB) credits will not be accepted toward the elective requirements

### For ACS Certification

Replace the 4 electives listed above with 5 of the following courses:

1. ACS Electives (must take all 3):
   - Organic Chemistry III (CHEM 40C), Biochemical Structure and Function (CHEM 114A), Inorganic Chemistry I (CHEM 120A)
2. ACS Laboratories (select 2 of the following):
   - Organic Chemistry Laboratory II (CHEM 143B), Advanced Organic Chemistry Laboratory (CHEM 143C), Molecular Design and Synthesis Laboratory (CHEM 143D), Protein Biochemistry Laboratory (CHEM 108), Recombinant DNA Laboratory (CHEM 109), Advanced Inorganic Chemistry Laboratory (CHEM 123), Advanced Physical Chemistry Laboratory (CHEM 105B)

**Recommended (but not required) Electives:** Non-science elective courses used to meet General Education requirements or chosen as free electives might well include some among: ECON 1, 2, 3, 131, 132, HIUS 154, Poli. SCI 10, 160AA, 162, Soc. 185, USP 2, 124, 144, 171.
Suggested Program for Environmental Chemistry B.S. Major

- ACS certification requires additional courses and eliminates electives not factored in below.
- Talk to your college for planning general education courses.
- Many courses have enforced prerequisites or are offered once per year.
- Fall of Sophomore or Junior year is the time to study abroad. Education Abroad Program deadlines for upcoming year vary by country. See EAP website. See the Chemistry & Biochemistry Undergraduate Advisor for assistance in planning to study abroad.

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RESOURCES

American Chemical Society-Student Affiliates (ACSSA):
ucsdacssa@gmail.com, acssa.ucsd.edu

UCSD Web Site: www.ucsd.edu
UCSD General Catalog: www.ucsd.edu/catalog
UCSD Career Services Center:
858-534-3750, career.ucsd.edu
UCSD Undergraduate Admissions:
858-534-4831, admissions.ucsd.edu

Campus Walking Tours:
858-822-1455, admissions.ucsd.edu/tours

Education Abroad Program:
858-534-1123, programsabroad.ucsd.edu

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 advisor.

Thurgood Marshall: 858-534-4110, marshall.ucsd.edu; John Muir: 858-534-3580, muir.ucsd.edu; Revelle: 858-534-3490, revelle.ucsd.edu; Eleanor Roosevelt: 858-534-9864, roosevelt.ucsd.edu; Earl Warren: 858-534-4350, warren.ucsd.edu; Sixth College: 858-822-5955, sixth.ucsd.edu