ENVIRONMENTAL CHEMISTRY (CH34)

Major Requirements for the ENVIRONMENTAL CHEMISTRY B.S. Degree Starting Fall 2017 and After

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: CHEM 6A, 6B & 6C or 6AH, 6BH & 6CH
2. General Chemistry Laboratory: CHEM 7L or CHEM 7LM
3. Physics: PHYS 2A, 2B & 2C or 2D
4. Physics Laboratory: PHYS 2BL or 2CL or 2DL
5. Calculus: MATH 20A, 20B, 20C & 20D
6. Organic Chemistry: CHEM 40A & 40B or 40AH & 40BH
7. Organic Chemistry Laboratory: CHEM 43A or 43AM

**Upper-Division, mostly, Requirements**

1. Physical Chemistry: CHEM 130, 131 & 132 Recommended, (CHEM 126A & 126B Acceptable)
2. Required Laboratory Courses (must take all 3):
   - Analytical Chemistry Laboratory (CHEM 100A)
   - Instrumental Chemistry Laboratory (CHEM 100B)
   - Physical Chemistry Laboratory (CHEM 105A)
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 2 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 Lab (CHEM 143C)
   - The Cell (BILD 1)*
   - Multicellular Life (BILD 2)*
   - Organismic and Evolutionary Biology (BILD 3)*
   - Ecology Laboratory (BIEB 121)
   - Biodiversity (BIEB 140)
   - 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 & 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 Lab (CHEM 143C)
   - Molecular Design & Synthesis Lab (CHEM 143D)
   - Advanced Physical Chemistry Laboratory (CHEM 105B)
   - Protein Biochemistry Laboratory (CHEM 108)
   - Recombinant DNA Laboratory (CHEM 109)
   - Advanced Inorganic Chemistry Lab (CHEM 123)
### Suggested Program for Environmental Chemistry B.S. Major

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**IMPORTANT NOTES:**

- Courses listed above only include major requirements. Speak with your college advisor for planning completion of general education and university requirements.
- The plan above does not include classes required for ACS certification. To receive ACS certification, you must follow the instructions above under the "For ACS Certification" section.
- The quarter in which a course is offered is subject to change based on space and instructor availability. Please check the department website (https://chemistry.ucsd.edu/ext/ugcourses.html?year=2019-2020) each academic year to see a projection of classes offered by quarter.
- The best time to study abroad is Fall quarter of Sophomore or Junior Year. 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.
- It is your responsibility to ensure that you meet the 48 upper-division unit requirement for your major. Check your degree audit to ensure you will meet this requirement. Transfer students should be especially careful with checking for completion of this requirement.
- Many courses have enforced prerequisites or are offered once per year. It is your responsibility to know which prerequisites are needed for each course. https://www.ucsd.edu/catalog/courses/CHEM.html