

B.S. in Environmental Science

The UCLA Institute of the Environment and Sustainability, together with the Departments of Atmospheric and Oceanic Sciences, Civil and Environmental Engineering, Earth Planetary and Space Sciences, Ecology and Evolutionary Biology, Environmental Health Sciences and Geography, is pleased to offer an innovative dual-component degree program in Environmental Science.

The first component, the Environmental Science Major, provides students with disciplinary breadth in areas important to environmental science. The second component, a Minor in one of seven environmental science areas, provides students with focused, disciplinary depth in an area of their choosing. Both components of the program must be completed to receive the degree.

Graduates of this program will be fully prepared to enter a career in environmental science or to continue their education in a graduate degree program.

I. Environmental Science Major

Preparation for the Major (56-57 units)

x Environment M10 *or* Earth Planetary and Space Sciences 1

EPSS 1 is required for the Earth & Environmental Science minor, and recommended for students who completed the Global Environment GE cluster. All other students should take Environment M10.

Note: Where two options are listed, the first option is recommended.

x Chemistry 14A/B/BL *or* Chemistry 20A/B/L
 x Life Science 6 *and* Life Science 6
 x Mathematics 3A/B *or* Mathematics 31A/B
 x Physics A/ *or* Physics 1A/B
 x Statistics 12 *or* Statistics 13

Two additional courses from the following four choices, depending on the Minor/Concentration selected (see Minor/Concentration on back side of this sheet):

x Chemistry 14C *or* Chemistry 30A
 x Mathematics 3C *or* Mathematics 32A
 x Physics 5 *or* Physics 1C
 x Life Science 6 and Life Science 23L

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Major requirements (50-52 units)

- x **Environmental Science** (24-26 units) Choose **one** course in each of **six** environmental science areas, with no more than **two** courses from any one department:
- o **Atmospheric & Water Science:** Atmospheric and Oceanic Sciences 101, 103, M105, 130, Earth Planetary and Space Sciences 153, Geography 105
 - o **Climate Science:** Atmospheric and Oceanic Sciences 102, U Geography 102, 104, M106, M131
 - o **Earth Science:** Earth Planetary and Space Sciences 101, C113, 119, 139, 150, Geography 100, 101, M107, M127/177
 - o **Ecology & Conservation Biology:** Ecology and Evolutionary Biology 100, 109, 116, 151A, 154, Environment 121, Geography 111, 113
 - o **Environmental Management:** Environment M134, M135, M155, 157, 159, 160, 162, 163, 166, Public Policy C115
 - o **Pollutant Sources, Treatment, Fate and Transport:** Atmospheric and Oceanic Sciences 104, Chemical Engineering C118, Civil and Environmental Engineering 153, 154, M166, Environmental Health Sciences 100, C125, C152D, C164
- x **Social Science-Humanities** (8 units) **One** course in each of two areas:
- o **Policy and Politics:** Environment M155, 157, M161, M164, 166, M167
 - o **Humans and the Environment:** Environment M132, M133, 150, M153, Geography M128, 135, M137, 150, M153, 156, Philosophy 125

Note: Where a course is listed in multiple categories, it may be used in one or the other, but not both.

x **Environmental Science Colloquium** (4 units)

4 units of Environment 170, 185A, 193, and 188B seminars

Environmental Science Practicum (14 units)

Environment 180A/B/C

II. Minor/Concentration

Students choose one of seven minors/concentrations, each associated with a particular department.

Students will normally choose their minor/concentration by the end of their second year. Students choosing one of the seven minors must, with assistance from IoES staff, apply to the associated department to be accepted into the minor program.

A minimum of 20 units must be unique to each minor.

****Note:** The courses listed here may be a subset of those approved for the departmental minor, so be sure to follow the course requirements listed below.

Atmospheric and Oceanic Sciences

Minor, Dept. of Atmospheric and Oceanic Sciences

Additional preparation required: Mathematics 3C or 32A and Physics 5B or 6C or 1C or Chemistry 14C or 30A

Requirements: (7 courses, 28-31 units, two course overlap possible)

- Three from Atmospheric and Oceanic Sciences M100, 101, 102, 103, 104, M105, M106, C110, C115, M120, 125, 130, M140, 141, 145, 150, C160, C170, 180, CM185
- Four additional courses (two of which must be upper division) from: Any of the above AOS courses beyond the minimum three required or from: AOS 1, 2, 3, 186 (186 must be taken twice); Chemistry and Biochemistry 103, 110A, 110B, 113A, C113B, 114; Earth Planetary and Space Sciences 15; Mathematics 115A, 115B, 132, 135, 136, 146, 170A, 170B; Ecology and Evolutionary Biology 109, C119, 122, 123A or 123B, 147, 148; Physics 110A, 110B, 112, M122, 131, 132

Conservation Biology

Minor, Dept. of Ecology and Evolutionary Biology

Additional preparation required: Chemistry 14C or 30A and Life Science 7C+23L or LS 3+23L

Requirements: (7-9 courses, minimum 28 UD units, two course overlap possible)

- Life Science 7A or 1, and Ecology and Evolutionary Biology 100, and 116 (or Environment 121)
- Four to six (minimum 19 units) from Ecology and Evolutionary Biology 101, 103, 105, 109, 109L, 111, 112, 114A, 122, 129, 151A, 154, 176, 180 (consult EEB for applicability of other EEB courses and selected Geography courses)

Environmental Engineering

Minor, Dept. of Civil and Environmental Engineering

Additional preparation required: Mathematics 3C or 32A and Physics 5B or 6C or 1C or Chemistry 14C or 30A

Requirements (6 courses, 24 units, one course overlap possible)

- Civil and Environmental Engineering 153

- Five from Civil and Environmental Engineering 154, 155, 156A, M165, M166, A&O Sci 141, Chemical Engineering C118, Environment 159, 166, Environmental Health Sciences C125, C164 (at least 2 of the above electives must be from C&EE)

Environmental Health

Concentration, Dept. of Environmental Health Sciences

Additional preparation required: Chemistry 14C or 30A and Life Science 7C+23L or 3+23L

Requirements (6 courses, 24 units, one course overlap possible)

- Environmental Health Sciences 100 and C135 or 185A and 185B
- Epidemiology 100
- Three from Chemistry 153A; Environmental Health Sciences C125, C140, C152D, C157, C164, M166

Environmental Systems and Society

Minor, Institute of the Environment

Additional preparation required: Two from Chemistry 14C or 30A, Mathematics 3C or 32A, Physics 5B or 6C or 1C, Life Science 7C+23L or 3+23L

Requirements (7 courses, 28-30 units, two course overlap possible)

- Seven from Environment M109, M111, 121, 122, M130, M132, M133, M134, M135, M137, 150, M153, M155, 157, 159, 160, M161, 162, 163, M164, 166, M167, 186, 185 SAR series

Geography/Environmental Studies

Minor, Dept. of Geography

Additional preparation required: Two from Chemistry 14C or 30A, Mathematics 3C or 32A, Physics 5B or 6C or 1C, Life Science 7C+23L or 3+23L

Minor requirements (7 courses, 30 units, two course overlap possible)

- Geography 5
- One from Geography 1, 2, 3, 4, 6
- Three from Geography M106, M107, M109, 110, 113, M115, 116, 120, 121, 122, 123, 124, 125, 126, M127, M128, 129, M131, 132, 135, 136, M137, 159C, 159D, 159E
- Two additional upper division Geography courses, excluding those from the preceding list and courses 190-199

Earth and Environmental Science

Minor, Dept. of Earth, Planetary, and Space Sciences

Additional preparation required: Mathematics 3C or 32A and Physics 5B or 6C or 1C or Chemistry 14C or 30A

Minor Requirements (7 courses, 30 units, two course overlap possible)

- Earth Planetary and Space Sciences 1, and one course from 5, 13, 15, or 61.
- Five courses from Earth Planetary and Space Sciences 101, 112, C113, 139, 150, 153 (consult with EPSS department for other applicable courses)