B.S. in Environmental Science

UCLA Institute of the Environment and Sustainability

The UCLA Institute of the Environment and Sustainability, together with the Departments of Atmospheric and Oceanic Sciences, Civil and Environmental Engineering, Earth 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 (57-63 units)

- Environment 10 [recommended in first or second year of program]
- Geography 7

Note: Where two options are listed, the first option is recommended. Ideally students will complete the majority of the preparation courses by the end of the 2nd year.

- Chemistry 14A/B/BL *or* Chemistry 20A/B/L
- Life Science 7A *and* Life Science 7B
- Mathematics 3A/B *or* Mathematics 31A/B *or* Life Science 30A/B
- Physics 5A/C *or* Physics 1A/B
- Statistics 12 *or* Statistics 13 *or* Life Science 40

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

- Chemistry 14C *or* Chemistry 30A
- Mathematics 3C *or* Mathematics 32A
- Physics 5B *or* Physics 1C
- Life Science 7C *and* Life Science 23L
- Earth Planetary & Space Sciences 1

Note: LS 30A/30B precludes the ability to take Math 3C or 32A

Major requirements (50-52 units)

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

Physical & Life Sciences (5 courses, 20-22 units)

One required course

Environment 175 (recommended in 3rd year)

Choice of *four* courses from list, with no more than *two* courses from any one department:

Atmospheric and Oceanic Sciences 101, 102, 103, 104, M105, 107, 112, 130, 141

Chemical Engineering C118

Civil & Environmental Engineering 153, 154, M166

Earth Planetary and Space Sciences 101, C113, 119, 139, 150, 153

Ecology and Evolutionary Biology 100, 109, 116, 151A, 154

Environment 121, 157

Environmental Health Sciences 100, C125, C152D, C164

Geography 100, 102, 104, 105, M106, M107, 111, 113, M127, M131

Social Sciences & Humanities (3 courses, 12-13 units)

One required course

Environment 140 (recommended in 2nd year)

Choice of *two* courses from list:

Environment M132, M133, 134, M135, 150, M153, 157, 159, 160, M161, 162, 163, M164, 166, M167

Geography M128, 135, M137, 150, M153, 156

Philosophy 125

Public Policy C115

Sustainability Talks (2 units) 2 terms of Environment 185A

Environmental Science Practicum (3 courses, 14 units) Environment 180A/B/C

For further guidance in course selection, please see: ioes.ucla.edu/envisci/course-requirements

II. Minor/Concentration

Students choose one of eight 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.

Atmospheric and Oceanic Sciences

Minor, Dept. of Atmospheric and Oceanic Sciences

*Additional preparation required: Mathematics 3C or 32A **or** Physics 5B 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, 107, 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: Atmospheric and Oceanic Sciences 1, 2, 3, 186 (186 must be taken twice); Chemistry & Biochemistry 103, 110A, 110B, 113A, C113B, 114; Earth Planetary & Space Sciences 15; Mathematics 115A, 115B, 132, 135, 136, 146, 170A, 170B; Ecology & 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 30 A **or** Life Science 7C/23L*

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

- Ecology and Evolutionary Biology 100, and 116 (*or* Environment 121)
- Four to six (minimum 19 units) from Ecology and Evolutionary Biology 100L, 101, 103, 105, 109, 109L, 111, 112, 114A, 114B, C119A, C119B, 122, M127, 129, M131, 151A, 152, 153, 154, 155, 162, 162L, C174 176, 180A, any course completed from Field or Marine Biology Quarter or approved equivalent; Geography 102, 104, M107, 113, M115, M131, 135 (maximum of two Geography courses can be applied to the minor)

Environmental Engineering

Minor, Dept. of Civil and Environmental Engineering

Additional preparation required: Mathematics 3C or 32A

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

- Civil and Environmental Engineering 153 (or Atmospheric & Oceanic Science 104 by substitution)
- Five from Civil and Environmental Engineering 110, 150, 151, 152,154, 155, 156A, 156B, 157A, 157B, 157C, 157L, M165, M166, A&O Sci 141**, Chemical Engineering 100, 101A, 101B, 101C, 102A, 102B, 106, 113, C118, C119, C140; Earth Planetary & Space Science 101, C113; Environment M114, 134, M153, 157, 159, 166, Environmental Health Sciences C125, C152D, C164; Mechanical & Aerospace Engineering 103, 105A, 105D, 133A, 136, 150A, 174, 182B, 182C. **Credit for both MAE 105A & CH ENGR 102A will not be granted.*

Environmental Health

Concentration, Dept. of Environmental Health Sciences

Additional preparation required: Chemistry 14C or 30A

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

Environmental Systems and Society

Minor, Institute of the Environment

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

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

- Seven from Environment M109, M111, 121, M130, M132, M133, 134, M135, M137, 150, M153, 157, 159, 160, M161, 162, 163, M164, 166, M167, 186, 185 SAR series

Geography/Environmental Studies

Minor, Dept. of Geography

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

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, 114, 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 **or** Physics 5B 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, 61.
- Five courses from Earth and Space Sciences 101, 112, C113, 139, 150, 153 (consult with EPSS department for other applicable courses)