

# Environmental Health Sciences

Academic degree programs in the Graduate Group in Environmental Health Sciences (EHS) are recommended for individuals with clear research orientations who wish to complete work of an interdisciplinary nature. Applicants may apply to the MS program, the PhD program, or to the joint MS/PhD program. (Continuation into the PhD program is contingent upon successful completion of the MS requirements or the Graduate Professional MPH degree requirements). EHS is administered within the Division of Environmental Health of the School of Public Health. Although students receive their academic degrees from the graduate group (under the jurisdiction of the Graduate Division of the UC Berkeley campus), students are also affiliated with and apply to the School of Public Health.

## Admission to the University

### Minimum Requirements for Admission

The following minimum requirements apply to all graduate programs and will be verified by the Graduate Division:

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A grade point average of B or better (3.0);
3. If the applicant comes from a country or political entity (e.g., Quebec) where English is not the official language, adequate proficiency in English to do graduate work, as evidenced by a TOEFL score of at least 90 on the iBT test, 570 on the paper-and-pencil test, or an IELTS Band score of at least 7 on a 9-point scale (note that individual programs may set higher levels for any of these); and
4. Sufficient undergraduate training to do graduate work in the given field.

### Applicants Who Already Hold a Graduate Degree

The Graduate Council views academic degrees not as vocational training certificates, but as evidence of broad training in research methods, independent study, and articulation of learning. Therefore, applicants who already have academic graduate degrees should be able to pursue new subject matter at an advanced level without the need to enroll in a related or similar graduate program.

Programs may consider students for an additional academic master's or professional master's degree only if the additional degree is in a distinctly different field.

Applicants admitted to a doctoral program that requires a master's degree to be earned at Berkeley as a prerequisite (even though the applicant already has a master's degree from another institution in the same or a closely allied field of study) will be permitted to undertake the second master's degree, despite the overlap in field.

The Graduate Division will admit students for a second doctoral degree only if they meet the following guidelines:

1. Applicants with doctoral degrees may be admitted for an additional doctoral degree only if that degree program is in a general area of knowledge distinctly different from the field in which they earned their original degree. For example, a physics PhD could be admitted to a doctoral degree program in music or history; however, a student with

a doctoral degree in mathematics would not be permitted to add a PhD in statistics.

2. Applicants who hold the PhD degree may be admitted to a professional doctorate or professional master's degree program if there is no duplication of training involved.

Applicants may apply only to one single degree program or one concurrent degree program per admission cycle.

## Required Documents for Applications

1. **Transcripts:** Applicants may upload *unofficial* transcripts with your application for the departmental initial review. *If the applicant is admitted*, then *official* transcripts of all college-level work will be required. Official transcripts must be in sealed envelopes as issued by the school(s) attended. If you have attended Berkeley, upload your unofficial transcript with your application for the departmental initial review. *If you are admitted*, an official transcript with evidence of degree conferral *will not* be required.
2. **Letters of recommendation:** Applicants may request online letters of recommendation through the online application system. Hard copies of recommendation letters must be sent directly to the program, not the Graduate Division.
3. **Evidence of English language proficiency:** All applicants from countries or political entities in which the official language is not English are required to submit official evidence of English language proficiency. This applies to applicants from Bangladesh, Burma, Nepal, India, Pakistan, Latin America, the Middle East, the People's Republic of China, Taiwan, Japan, Korea, Southeast Asia, most European countries, and Quebec (Canada). However, applicants who, at the time of application, have already completed at least one year of full-time academic course work with grades of B or better at a US university may submit an official transcript from the US university to fulfill this requirement. The following courses will not fulfill this requirement:
  - courses in English as a Second Language,
  - courses conducted in a language other than English,
  - courses that will be completed after the application is submitted, and
  - courses of a non-academic nature.

If applicants have previously been denied admission to Berkeley on the basis of their English language proficiency, they must submit new test scores that meet the current minimum from one of the standardized tests. Official TOEFL score reports must be sent directly from Educational Test Services (ETS). The institution code for Berkeley is 4833. Official IELTS score reports must be mailed directly to our office from the British Council. TOEFL and IELTS score reports are only valid for two years.

## Where to Apply

Visit the Berkeley Graduate Division application page (<http://grad.berkeley.edu/admissions/apply>).

## Admission to the Program

Application to the MS or MS/PhD programs requires an undergraduate degree in one of the natural sciences, commonly biology, chemistry, engineering, or environmental sciences. Admission to the doctoral program generally requires a masters degree in similar fields or in environmental health. In all cases an important aspect of the application for admission is the personal statement indicating an understanding

of the interdisciplinary nature of the field of environmental health, the applicant's future aspirations in the field, and the relevance of their previous academic background and/or their research or professional experience.

## Curriculum

### Environmental Health Sciences - Required Courses

PB HLTH 270	Introduction to Environmental Health Sciences	3
PB HLTH 270A	Exposure Assessment and Control	3
PB HLTH 260A	Principles of Infectious Diseases	4
	or NUSCTX 110 Toxicology	
CY PLAN 204C	Analytic and Research Methods for Planners: Introduction to GIS and City Planning	4

### Biostatistics and Epidemiology - Required Courses

PB HLTH 142	Introduction to Probability and Statistics in Biology and Public Health	4
	or PB HLTH 141 Introduction to Biostatistics	
PB HLTH 250A	Epidemiologic Methods I <sup>1</sup>	3-4
	or PB HLTH 25 Epidemiologic Methods II	
PB HLTH 145	Statistical Analysis of Continuous Outcome Data	4
PB HLTH 241	Statistical Analysis of Categorical Data	4
PB HLTH 245	Introduction to Multivariate Statistics	4

**Students should take a minimum of 3 courses in either one of the following categories:**

1. International Development
2. Environmental Health Policy

#### International Development

PUB POL C253	International Economic Development Policy	3
ECON C270A	Microeconomics of Development	3
ECON C275A	Economic Demography	3
CY PLAN 115	Urbanization in Developing Countries	4
DEV STD C100	Course Not Available	4
ENE,RES 275	Water and Development	4
ESPM 169	International Environmental Politics	4
ESPM 260	Governance of Global Production	3
PB HLTH 213A	Family Planning, Population Change, and Health	3
PB HLTH 226D	Global Health Economics	3

#### Environmental Health Policy

PB HLTH 290	Health Issues Seminars	1-4
PB HLTH 271E	Science and Policy for Environment and Health	3
PB HLTH 220C	Health Risk Assessment	3
PB HLTH 235	Impact Evaluation for Health Professionals	3
PB HLTH 299	Independent Research	3-6
ENE,RES 102	Quantitative Aspects of Global Environmental Problems	4

GHE Project Seminar (3-6 units to be taken during the last semester or during the summer)

### Elective Courses

Remaining units to be chosen from upper division or graduate courses in the above areas and from courses in a range of closely related fields, including but not limited to the following:

PB HLTH 292	Seminars for M.P.H. Students	1-4
PB HLTH 212A	International Maternal and Child Health	2
PB HLTH 267B	Characterization of Airborne Contaminants	4
CIV ENG 111	Environmental Engineering	3
PB HLTH C160	Environmental Health and Development	4
PB HLTH 219E	Introduction to Qualitative Methods in Public Health Research	3
PB HLTH 205	Program Planning and Needs Assessment	4
PB HLTH 260B	Principles of Infectious Diseases	4
PB HLTH 206D	Food and Nutrition Programs and Policies in Developing Countries	3
PB HLTH 271G	Health Implications of Climate Change	3

### Courses for Designated Emphasis in Global Metropolitan Studies

PB HLTH 211	Health and Human Rights	3
PB HLTH 252C	Intervention Trial Design	3
CY PLAN 220	The Urban and Regional Economy	3
ESPM 290	Special Topics in Environmental Science, Policy, and Management (P009)	1-4
PB HLTH 253B	Epidemiology and Control of Infectious Diseases	3
PB HLTH 271C	Drinking Water and Health	3

- No internship/fieldwork/practicum but fieldwork common
- Capstone/Thesis (Plan I)
- Capstone/Comprehensive Exam (Plan II)
- Capstone/Master's Project (Plan II)

## Normative Time Requirements

### Normative Time to Advancement: 4 Semesters

The normal time from entry into the doctoral program to advancement to candidacy is four semesters although it is generally somewhat less for students who complete a master's degree in Environmental Health at Berkeley.

### Total Normative Time: 12 Semesters

### Time to Advancement

#### Curriculum

Although there are no formal course requirements for the doctoral degree students are expected to be well-versed in the material covered in the following courses at the time of the qualifying examination.

PB HLTH 241	Statistical Analysis of Categorical Data <sup>1</sup>	4
PB HLTH 220C	Health Risk Assessment	3
PB HLTH 250B	Epidemiologic Methods II <sup>1</sup>	4
PB HLTH 270	Introduction to Environmental Health Sciences	3
PB HLTH 270A	Exposure Assessment and Control	3
NUSCTX 110	Toxicology	4

<sup>1</sup> For the Biostatistics and Epidemiology requirements, any 200 level courses will satisfy the requirements

## **Prospectus**

A preliminary examination including a research prospectus must be successfully completed prior to the qualifying examination.

## **Time in Candidacy**

### **Dissertation**

Dissertation required.