

## Energy and Resources Group (ERG) Minor

The minor in Energy and Resources offers undergraduates the opportunity to develop basic knowledge and skills to help them address the complex and interdependent issues associated with the interaction of social, economical, political, technical, and environmental factors. Though it is designed primarily to complement majors in the natural sciences and engineering, students in any major with the appropriate prerequisites may pursue the minor. Based on a six-course set of prerequisites in mathematics and natural sciences, the minor is satisfied by completing five upper division courses, including two core courses and three electives.

The choice of electives should be made with two goals in mind: exploring the range of approaches available to address energy and resource issues and complementing the student’s major. The latter can be achieved by adding relevant depth in closely related areas or by exploring methods and approaches that contrast with the tools and knowledge base employed in the major. Students are encouraged to discuss their program with the ERG faculty. Additional information about the minor, and contact information for ERG advisors are available online on the ERG website: <http://erg.berkeley.edu/academics/program/#undergrad>.

### If you are interested in pursuing the minor:

1. Complete the “Intent to Declare ERG Minor” form available at <http://goo.gl/DfvnA8> by the end of the fifth week of classes in the semester in which you begin the upper division ERG minor coursework.
2. Submit the “Minor Completion Form” within the last two (2) weeks of instruction in the semester you intend to graduate to the ERG staff advisor in 260 Mulford Hall.

### Completing the Energy and Resources Group Minor Program:

1. Six lower-division courses must be completed: Math 1A-1B or 16A-16B; Physics 7A-7B or 8A-8B; Chemistry 1A or 4A; and Biology 1B or 11. Some of these courses may be satisfied with AP, IB, and other transfer credit. Consult the ERG staff advisor for more information.
2. Five upper division courses are required: ER 100 and ER 102 plus three elective courses approved by ERG faculty.
  - Upper division electives must be taken from the list approved by ERG or with permission of the ERG faculty advisor.
  - At least four upper division courses must be taken at Berkeley.
  - At least three upper division courses must be in the Energy and Resources Group.
  - At least one upper division elective must be in the social sciences.
  - At least one upper division elective must be in the natural sciences or engineering.
  - A student may use a maximum of one upper division course to satisfy requirements of both a major and a minor.
3. All upper division courses used in satisfaction of the minor program must be taken for a letter grade.
4. The student must achieve at least a C average (2.00) in the upper division courses offered in satisfaction of a minor program.

Required Courses:	
ER 100	Energy and Society (also Public Policy C184)
ER 102	Quantitative Aspects of Global Environmental Problems
Natural Science and Engineering (at least one course):	
ER 101	Ecology and Society
CivEng 103	Hydrology
CivEng 107	Climate Change Mitigation
CivEng 111	Environmental Engineering
CivEng 114	Environmental Microbiology
CivEng 115	Water Chemistry
EPS 117	Geomorphology
ESPM C129	Biometeorology (also EPS C129)
ESPM C180	Air Pollution (also EPS C180)
ESPM 111	Ecosystem Ecology
ESPM 112	Microbial Ecology
ESPM 120	Soil Characteristics
ESPM 131	Soil Microbial Ecology
ESPM 140	General Entomology
IB 106A	Physical and Chemical Environment of the Ocean
IB 152	Environmental Toxicology
IB 153	Population & Community Ecology
IB 157L	Ecosystems of California

Social Science (at least one course):	
ER 175	Water and Development
ER C180	Ecological Economics in Historical Context
ER 273	Research Methods in Social Sciences (advanced undergraduates by permission)
EEP C102	Natural Resource Economics (also Econ C102)
EEP C151	Economic Development (also Econ C171)
ESPM 102D	Resource and Environmental Policy
ESPM 155	Sociology and Political Ecology of Agro-Food Systems
ESPM 160AC	American Environmental and Cultural History (also History 120AC)
ESPM 161	Environmental Philosophy and Ethics
ESPM 168	Political Ecology
ESPM 169	International Environmental Politics
IDS 100AC	Technology and the American Experience
Other:	
ER 170	Environmental Classics
ER 190	Seminar in Energy, Environment, Development, and Security Issues
CRP 119	Planning for Sustainability
EPS 170AC	Crossroads of Earth Resources and Society (also L&S 170AC)
ESPM 118	Agricultural Ecology