Degree Benefits
This environmental studies program housed in the department of biological and environmental sciences, is being offered to meet the increasing demand of natural resource and energy extraction industries. The balanced curriculum draws on law and policy, geology, chemistry, and environmental studies/biology disciplines. Graduates from this program will earn a Bachelor of Science in Environmental Studies with a concentration in natural resource management and policy and a minor in geology. It is anticipated that graduates would be able to enter the workforce in the rapidly growing oil/gas industry as well as to service other resource extraction areas. Graduates would be trained to provide assistance with environmental safety, environmental compliance, mitigation, wetland delineation, biomonitoring and communicate between industry and compliance officers as well as policy makers.

Job Options
Recent growth in the oil and gas industry has expanded the job market for graduates with training in both earth and environmental sciences. Potential jobs include: air/water/soil quality specialist, land manager, environmental health safety manager, and geographic information systems (GIS) manager, and positons in environmental consulting.

According to the National Association of Colleges and Employers, the industry had the highest starting salaries of any industry for 2012 bachelor’s degree recipients. The Bureau of Labor Statistics projects employment in the mining, oil, and gas extraction industry to grow by about 4 to 5 percent between 2010 and 2020.

Program Objectives
The objectives of the natural resource management and policy program are to:
• Provide core knowledge of chemistry, biology, geology, and public policy governing resource extraction.
• Provide extra-curricular opportunities so that students may learn first-hand about the profession. This can be achieved through internships or work-force development.
• Provide opportunities for professional certification with OSHA and the EPA.
• Prepare graduates to enter the workforce in the engery and environmental industries.

Curriculum
The natural resource management and policy curriculum is interdisciplinary and has been developed with guidance from industry to meet their environmental resource needs. The program of study blends coursework from four core disciplines: biology, chemistry, earth sciences (geology), and environmental law/policy. The eight-semester sequence provides students with a broad range of coursework and hands-on experiences.

Note
The policies and procedures described here may be reviewed and revised at any time. This fact sheet should be used as an informational guide. For details on current policies and procedures, contact the chair of the department.
### Freshman Year

**First Semester** .................................................................15 credits
- BIO 120 General Zoology ..................................................4 crs.
- EAS 150 Intro to Geology ..................................................4 crs.
- ENG 101 English Composition I .........................................3 crs.
- UNI 100 First-Year Seminar ..............................................1 cr.
- General Education ..............................................................3 crs.

**Second Semester** ..........................................................16 credits
- BIO 125 General Botany ....................................................4 crs.
- ENG 217 Scientific and Technical Writing .........................3 crs.
- MAT 181, MAT 273, OR MAT 281 .....................................3 crs.
- General Education ..............................................................6 crs.

**Sophomore Year**

**Third Semester** ..............................................................14 credits
- BIO 215 Intro to Cellular and Molecular Biology ..................4 crs.
- CHE 101 General Chemistry I .............................................4 crs.
- COM 101 OR COM 230 .....................................................3 crs.
- EAS 210 Intro to Soils .......................................................3 crs.

**Fourth Semester** ..............................................................15 credits
- BIO 248 General Ecology ..................................................4 crs.
- EAS 200 Historical Geology ..............................................4 crs.
- CHE 102 General Chemistry II .........................................4 crs.
- MAT 215 Statistics ..............................................................3 crs.

*Student may elect to do three, one-credit workshops for WFD 399 OR an internship for 3 credits during summer.*

**EMA = Ethics and Multicultural Awareness Junior Year**

### Program Contact Information

Contact the Department of Biological and Environmental Sciences by phone at 724-938-4200.

### Junior Year

**Fifth Semester** .................................................................16 credits
- EAS 303 Hydrology ...........................................................3 crs.
- EAS 333 Geochemistry OR EAS 343 Geomorphology ...........4 crs.
- GIS 311 Geographic Information Systems .........................3 crs.
- LAW 305 Land Management and Administration ................3 crs.
- ENS 435 Natural Resource Law and Policy .......................3 crs.

**Sixth Semester** ...............................................................16/17 credits
- EAS 423 Sedimentology/Strategy ......................................3 crs.
- CHE 331 Organic Chemistry I ..........................................4 crs.
- LAW 405 Oil and Gas Law .................................................3 crs.
- GIS 314 Spatial Land Data ................................................3 crs.
- WFD 399 Workforce Development* ..................................0/1 crs.
- General Education EMA** ................................................3 crs.

### Senior Year

**Seventh Semester** ..........................................................13/14 credits
- EAS 441 Advanced Environmental Geology .....................3 crs.
- ENS 475 Wetlands Ecology ...............................................4 crs.
- WFD 399 Workforce Development* ..................................0/1 crs.
- CHE 333 Chemical Hazards ..............................................3 crs.
- LAW 410 Law and Ethics ...................................................3 crs.

**Eighth Semester** ...........................................................13/14 credits
- EAS 429 Petroleum Geology .............................................3 crs.
- ENS 440 Environmental Pollution OR
  BIO 488 Waster Pollution Biology ....................................4 crs.
- General Education ..............................................................4 crs.
- WFD 399 Workforce Development* ..................................0/1 crs.
- LAW 420 Law and Conflict Resolution ............................3 crs.

California University of Pennsylvania is an academic community dedicated to the ideals of justice, fairness and equal opportunity for all. In compliance with federal and state laws, the University is committed to providing equal educational and employment opportunities for all persons without regard to race, color, sex, religion, national origin, age, disability, ancestry, sexual orientation or status as a disabled or Vietnam era veteran. The University will not tolerate racial, ethnic or sexual discrimination. Sexual harassment is considered by law to be a form of sexual discrimination and is, therefore, unacceptable. Direct equal opportunity and affirmative action inquiries or complaints to the Special Assistant to the President for Equal Employment and Educational Opportunity (EEO), Office of Social Equity, South Hall 112, 724-938-4014. Direct inquiries regarding services or facilities accessibility to the ADA/504, Compliance Officer, Office of Student Development and Services, G 52 Carter Hall, 724-938-4056. Direct Title IX inquiries to the Senior Women’s Administrator/Title IX Coordinator, Department of Athletics, Hamer Hall 248, 724-938-4351.

### Department Website

[www.calu.edu/academics/colleges/eberly/biology](http://www.calu.edu/academics/colleges/eberly/biology)

### Questions About Admissions?

Office of Admissions
California University of Pennsylvania
250 University Ave.
California, PA 15419-1394

Phone: 724-938-4404
Toll-free: 888-412-0479
Fax: 724-938-4564
E-mail: inquiry@calu.edu

### About Us

California University of Pennsylvania is a proud member of the Pennsylvania State System of Higher Education. Located in the borough of California, just 35 miles from Pittsburgh, Cal U serves about 8,200 undergraduate and graduate students.

- Cal U’s upper campus includes the Vulcan Village apartments, athletic facilities at Roadman Park, and space for student meetings and outdoor recreation at SAI Farm.
- Cal U Global Online is the University’s virtual campus, offering degree and certificate programs 100% online.

### Financial Aid

For information on student loans and undergraduate scholarships, visit [www.calu.edu](http://www.calu.edu) or call 1-888-412-0479.