

Major Course Requirements

A minimum of 91.5 hours (19.5 upper-division hours)

► **Required Core Courses (61.5 hours):**

BIOL 121+122+123	Biological Foundations I,II,III	5+5+5
BIOL 221+ 222	Intro to Research Methods I,II	2+2
BIOL 233	Ecology	4
BIOL 450	Philosophy of Origins	3
CHEM 111+12+13+L	General Chemistry I, II, III +Lab	5+5+5
ENVR 360+L	Conservation Biology+Lab	4
ENVR 361+L	Energy/Climate Change+Lab	4
ENVR 362+L	Pollution/Envr Quality+Lab	4
ENVR 397	Environmental Studies Seminar	0.5
ENVR 494	Internship	3
RELT 240	Eco-theology	4
SCIE 290	Sophomore Seminar	1

► **Required Core Electives (30 hours):**

At least 30 hours from the following:		30
AGRI 212	Home Greenhouse Gardening (2)	
AGRI 213	Organic Vegetable Gardening (2)	
BIOL 227+L	Natural Hist of California+Lab (4)	
BIOL 323	Vertebrate Biology (4)	
BIOL 325	Flowering Plants (3)	
BIOL 328	Animal Behavior (4)	
BIOL 331	Marine Science (4)	
BIOL 338	Field Biology (3)	
BIOL 366	Medical Microbiology (5)	
CHEM 324+L	Analytical Chemistry I+Lab (4)	
CHEM 325	Analytical Chemistry II (3)	
CHEM 326+L	Analytical Chemistry III+Lab (3)	
CHEM 371+72+73+L	Organic Chemistry I,II,III+Lab (4+4+4)	
CHEM 450L	Physical Chemistry Lab (1)	
CHEM 451	Thermodynamics (3)	
CHEM 452	Kinetics (3)	
ENVR 412	Research in Envir Studies (1-2)	
GEOL 233	Geology (4)	
INFS 240	Introduction to GIS (2)	
MATH 131+132	Calculus I,II (4+4)	
PHYS 111+12+13	General Physics I,II,III (4+4+4)	

Recommended courses for students interested in specific areas:

These courses are recommended to help students become better prepared for a job or for graduate school in more specialized areas of environmental studies. These courses are not intended to provide students with the specific skills required for a job.

Air Quality:

CHEM 324+L, 371+372+373, 451+452, INFS 240, MATH 131+132, PHYS 111+112+113

Conservation Biology:

BIOL 227, 323, 325, 328, 338, INFS 240

Energy:

CHEM 324+L, 325, 371+372+373, 451+452, GEOL 233, INFS 240, MATH 131+132, PHYS 111+112+113

Environmental Economics:

ACCT 121+122+123, ECON 261, 265, MATH 131+132

Environmental Policy:

PLSC 124, 274, RELT 355, SOWK 232

(Continued on other side)

Student Learning Outcomes

Students can:

- Identify and explain general environmental principles.
- Describe and employ the scientific process and techniques, especially as these apply to the environmental sciences.
- Successfully communicate in both oral and written scientific format and be information literate.
- Develop a personal ethic of stewardship and sustainable living.

Occupational Information

What can I do with this major?

The core requirements of the Environmental Studies major provide a solid foundation for various specializations. By selecting the appropriate electives, our B.S. degree allows students to create their own emphases. In order to enhance employability or admission to graduate schools, it is highly recommended that students be clear on their vocational objectives and consult with departmental advisors as needed.

A required Internship includes volunteer service or employment with an environmental organization, thus providing crucial on-the-job experience. Career possibilities include jobs in air quality, conservation biology, energy, environmental economics, environmental policy, marine resources, solid waste management, water management and wildlife management.

Additional Education Required?

A master's degree is required for many intermediate-level environmental jobs and is desirable for teaching science at the secondary level and in community colleges. A doctorate degree is normally required to do research in an environmental profession, and is required for many upper-level jobs as well as for teaching at university and four-year colleges.

Job Outlook

Environmental studies is a broad and rapidly growing field of study. Federal, state, and local agencies are the primary employers. Environmental studies graduates may also be employed by private consulting firms. Public, occupational, and environmental health are common career specialties.

Salaries of environmental professionals vary greatly, depending on qualifications and experience. Visit www.bls.gov/ooh/life-physical-and-social-science/home.htm for details.

General Education Requirements

To view general education requirements for this major, please refer to page A-01, Summary of General Education Requirements: B.S. Degree.

How to Construct Your Own Program

1. Consult with your academic advisor.
2. Consider your aptitudes, interests, and available courses.
3. Schedule major courses and cognates first.
4. Fill the rest of your schedule with G.E. requirements.
5. For the freshman year include College English I and II and Religion courses. Also include Basic Algebra I+II unless waived by previous work.

What the Degree Includes

- A total of 192 quarter hours including:
1. A minimum of 60 upper division hours.
 2. General Education requirements.
 3. Major requirements.
 4. Minimum 2.0 GPA, overall and major.

For More Information

Visit our website: www.puc.edu/academics/departments/biology

Email: Floyd Hayes, fhayes@puc.edu or biology@puc.edu

Major Course Requirements *(continued)*

*Recommended courses for students interested in specific areas:
(Continued from other side)*

Marine Resources:
BIOL 331, GEOL 233, INFS 240

Solid Waste Management:
CHEM 324+L, 325, 371+372+373, 451+452, INFS 240, PHYS 111+112+113

Water Management:
BIOL 366, CHEM 324+L, 325, 371+372+373, 451+452+453, INFS 240, MATH 131+132, MICR 134, PHYS 111+112+113

Wildlife Management:
BIOL 227, 323, 328, 338, INFS 240

Sample Four-Year Program

This sample curriculum shows you how a program may be constructed, emphasizing the science components. Your program may differ, but be sure to consult your advisor.

First Year	F	W	S
Biological Foundations I,II,III*	5	5	5
Introductory Chemistry**	[4]	-	-
Eco-theology	-	-	3
General Education/Electives	11	11	8
	16	16	16
Second Year	F	W	S
General Chemistry I,II,III*	5	5	5
Ecology	4	-	-
Introduction to Research Methods I,II	2	2	-
Environmental Studies Electives***	-	4	4
General Education/Electives	5	5	7
Sophomore Seminar	-	1	-
	16	17	16
Third Year	F	W	S
Conservation Biology+Lab	4	-	-
Energy and Climate Change+Lab	-	4	-
Pollution and Environmental Quality+Lab	-	-	4
Environmental Studies Electives***	4	4	4
General Education/Electives	8	8	8
	16	16	16
Fourth Year	F	W	S
Philosophy of Origins	-	3	-
Internship	1	2	1
Environmental Studies Seminar	-	0.5	-
Environmental Studies Electives***	4	4	4
Senior Assessment Seminar	-	-	0.2
General Education/Electives	11	7	11
	16	16.5	16.2

* Biological Foundations or General Chemistry should be taken during the first two years, but only in the same year by students who are well prepared, highly motivated and disciplined. If taking more chemistry than biology electives, General Chemistry should be taken first and Biological Foundations later.

** Needed only if High School chemistry is weak.

*** See the front of this sheet for a list of Environmental Studies electives.