

Portland State University
Bachelor of Arts/Bachelor of Science in Environmental Sciences

The Environmental Science Program allows students to develop the skills and interdisciplinary understanding needed to deal with environmental systems and human impacts on those systems. Students should consult with a program adviser to assure proper course planning.

The B.A./B.S. degrees in environmental science rest on an interdisciplinary curriculum that develops understanding and expertise in environmental science by building on a foundation in mathematics, natural sciences, and economics complemented by related courses in environmental policy and management. Students complete field experiences working on projects in the University, metropolitan community, and region. This degree has more focus on the natural sciences than the environmental studies degree.

The interdisciplinary curriculum in environmental Science includes coursework in several departments: Anthropology; Biology; Chemistry; Civil Engineering; Economics; Geography; Geology; History; Mathematics; Physics; Political Science; Sociology; the School of Business Administration; and the College of Urban and Public Affairs.

Admission Requirements

Admission to the department is based on general admission to the University.

Degree Requirements: A summary of the requirements are listed below:

- * 49 – 50 credits of Foundation courses
- * 51 credits of Environmental Science Core courses
- * 16 credits of Connected Learning electives
- * 45 credits General Education requirements

All courses used to satisfy the Environmental Science major requirements, whether taken in the program or in other departments, must be graded C- or above. Students must complete the foundation courses listed below. All foundation courses should be completed before a student enrolls in the upper-division sequence (ESM 320, 321, 322).

Environmental Science Core Courses	Credits
ESM 220 Introduction to Environmental Systems	4
ESM 221 Applied Environmental Studies: Problem-Solving	4
ESM 222 Applied Environmental Studies: Policy Considerations	4
ESM 320, 321 Analysis of Environmental Systems I, II	8
ESM 323, 324 Analysis of Environmental Systems I, II Lab	4
ESM 322 Environmental Risk Assessment	4
ESM 325 Environmental Risk Assessment Lab	2
ESM 335 Intro to Environmental Management	4
ESM 407 Environmental Seminar	1
ESM 410-499 Advanced Environmental Topics*	16
	Total 51

* Note: ESM 404 (Internship) can substitute for 4 credits of the 410-499 requirements.

Foundation Courses

BI 251, 252, 253 Principles of Biology	15
CH 221, 222, 227, 228 General Chemistry	10
EC 201 Microeconomics or EC 332 Economics of Environmental Issues	4
GEOL. 201, 204 or 202, 205 or PH 201, 214 or Ph 211, 214 or GEOG 210	4-5
STAT 243 Intro to Prob & Stats, ESM 340 Research Methods in Envir Science <i>or</i> <i>or</i> STAT 243, 244 Intro to Prob & Stats I, II	8
MTH 251, 252 Calculus I, II;	8
	Total 49-50

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Connected Learning electives. Students must complete 16 credits of supporting selected from an approved list of courses available on the Program website www.esm.pdx.edu. These courses are intended to broaden the student's background and include courses from allied sciences (e.g. Biology, Geology and Geography), courses that focus on the development of skills and techniques (e.g. GIS and remote sensing) useful in environmental science and courses that address the interactions of humans and the natural environment (e.g. Economics, English, History, Philosophy, Political Science, Sociology, and Urban Studies and Planning). In selecting these courses, students are strongly encouraged to broaden their studies beyond science by including courses from the social science and humanities. Of the 16 credits required in Connected Learning, a maximum of four credits may be taken as ESM 404 Internship. If taken as a Connected Learning course, it cannot also be taken as a Core Course.

Connected Learning Course

BI 341 Intro to Genetics	GEOG 345 Resource Management
BI 357 General Ecology	GEOG 346 World Population and Food Supply
BI 360 Marine Biology	GEOG 347 Environmental Issues and Action
BI 387 Vertebrate Zoology	GEOG 348 Cultural and Political Ecology
BI 413 Herpetology	GEOG 349 Mountain Geography
BI 414 Ornithology	GEOG 413 Biogeography of the Pacific NW
BI 415 Mammology	GEOG 415 Soils and Land Use
BI 423 Microbial Ecology	GEOG 420 Field Methods in Physical Geog
BI 426 Evolution	GEOG 445 Resource Mgmt Topics
BI 429 Conservation Biology	GEOG 446 Water Resources Management.
BI 471 Plant Ecology	GEOG 462 Sense of Place
EC 432 Environmental Economics	GEOG 481 Satellite Digital Image Analysis
EC 444 Economics of Green Power	GEOG 488 Geographic Info Systems I: Intro
ESM 404 (Internship)	HST 339 The Environment and History
ESM 433 Natural Resource Economics	HST 440, 441 Amer Enviro History I, II
ESM 434 Business Enviro Mgmt Economics	PH 375 Earth's Atmosphere
ESM 443 Global Environmental Economics	PHE 443 Environmental Health
ENG 308 Literature and the Environment	PHL 310 Environmental Ethics
ENG 449 Advanced Topics in Cultural Studies	PS 319 Politics of the Environment
G 351 Oceanography	PS 449 Internatl Enviro Politics & Law
G 443 Groundwater Geology	SOC 341 Population Trends and Policy
G 460 Soil Geomorphology	SOC 465 Environmental Sociology
G 461 Environmental Geology	USP 311 Introduction to Urban Planning
G 474 Geomorph Processes	USP 313 Urban Planning: Enviro Issues
	USP 419 Population and Society
	USP 455 Land Use: Legal Aspects