

2020-2021

**DEPARTMENT OF GEOLOGY AND
ENVIRONMENTAL SCIENCE**



**Bachelor of Arts
in
Environmental Studies**

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DEPARTMENT OF GEOLOGY & ENVIRONMENTAL SCIENCE
UNIVERSITY OF PITTSBURGH

BACHELOR OF ARTS IN ENVIRONMENTAL STUDIES
ACADEMIC YEAR 2020-2021

BACKGROUND

Rapid growth in human population and development has led to complex environmental problems, both locally and globally. The way in which we address these issues will have a profound effect on our society and planet. Enlightened solutions require a strong component of scientific knowledge and an awareness of the relevant societal issues.

The Bachelor of Arts in Environmental Studies equips students with an understanding of earth systems and the environment, including the effect of geologic processes on human activity, and the impact of humans on the biosphere, atmosphere, hydrosphere, and global climate. Courses in the natural and social sciences supplement a traditional liberal arts curriculum to provide a comprehensive, interdisciplinary background in the scientific, economic, political, and social aspects of human interaction with the environment.

The Environmental Studies degree provides a strong, balanced background for students who seek careers in fields such as sustainability, resource development and management, environmental policy and regulation, risk assessment, land use planning, public policy, and education. Potential employers include local, state or federal governments, non-profit organizations, consulting firms, or companies affected by environmental issues or regulations. Graduates of the Environmental Studies program can also pursue postgraduate study in fields such as business, law, medicine, public policy, education, international relations, urban and regional planning, environmental management, sustainability, Geographical Information Systems (GIS), and public health.

The Environmental Studies Program combines four components: (1) core courses provide a fundamental understanding of environmental processes, issues and policy, including an internship; (2) co-requirements provide the necessary prerequisites for later study; (3) electives in the natural and social sciences and humanities allow the student to explore environmental issues with greater depth; and (4) field study experience. Students are strongly encouraged to undertake an independent research project as well courses in public policy and environmental issues, management, health and safety, and sustainability (*See Geology classes numbered 1330 through 1342*).

BACHELOR OF ARTS IN ENVIRONMENTAL STUDIES

DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE

WWW.GEOLOGY.PITT.EDU

69 credits minimum

Updated 2/22/2017

Visit the Department web page and click on “Undergrad Programs” for a complete range of advising information plus the comprehensive guide for Environmental Studies requirements and the latest available information. To graduate with a B.A. in Environmental Studies, **you must have a 2.0 grade point average** in your GEOL core courses counting towards your major, a 2.0 average for your co-requisites, and 2.0 average overall. *Note: * denotes that pre-requisites may be required.*

CORE COURSES (check each as completed):

(at least 34 credits)

Take each of the following:

- ___ GEOL 0055 Geology Laboratory (2) [Fall, Spring] **This is a prerequisite for many GEOL courses!**
- ___ GEOL 0840 Intro to Environmental Science (3) [Fall] **This is a prerequisite for many GEOL courses!**
- ___ GEOL 1030 The Atmosphere, Oceans and Climate (3) [Fall, Spring]
- ___ GEOL 1055 Environmental Ethics, Science, and Public Policy (3) (Capstone Class) [Fall, Spring]
- ___ GEOL 1313 Communications for Environmental Professionals; **W-class** (3) [Fall, Spring]
- ___ GEOL 1333 Sustainability (3) [Fall, Spring]
- ___ GEOL 1445 GIS, GPS, and Computer Methods (3) [Fall]
- ___ GEOL 1900 Internship (3) [Fall, Spring]
- ___ ECON 0110 Intro to Macroeconomic Theory (3) (may substitute ECON 0100 OR ECON 0800)*
- ___ LEGLST 1320 Law and Environment (3) (May substitute GEOL 1312 Environmental Law and Policy)
- ___ EOH 2180&2181 Introduction to Risk Sciences (1) & Risk Assessment Practicum(2)*
(Ask advisor for substitution courses)
- ___ Environmental Science Field Course (≥ 2)
(Suggested options: Pymatuning Courses (BIOSC Dept); GEOL 1300 (Pitt in South Africa);
GEOL 1930 (Yellowstone); GEOL 1950 (Wyoming))

CO-REQUIREMENTS (check each as completed):

(11/12 credits)

Take each of the following:

- ___ CHEM 0110 General Chemistry 1 (4)
- ___ STAT 0200 Basic Applied Statistics (4) (may substitute STAT 1000 OR STAT 1100)*

Plus at least ONE of the following:

- ___ MATH 0220 Analytical Geometry and Calculus 1 (4)*
- ___ MATH 0120 Business Calculus (4)*
- ___ MATH 0125 & 0126 Calculus for Business(4)*
- ___ PUBSRV 1110 Financial Management for the Public Sector (3)
- ___ PUBSRV 1210 Financial Management for Nonprofit Org (3)

ELECTIVES (suggested options):

(at least 24 credits)

Take at least 12 credits in Social Science/Humanities and at least 12 credits in Natural Sciences from the suggested elective list. Elective credits may also be earned in independent study projects, study abroad or additional internships and applied to either category. SEE ADVISOR ABOUT ADDITIONAL ELECTIVES.

SOCIAL SCIENCES & HUMANITIES ELECTIVES (at least 12 credits)***Department of Anthropology***

- ___ ANTH 0225 Food in Societies (3)
- ___ ANTH 0445 Diversity in the US (3)
- ___ ANTH 0582 Introduction to Archeology (3)
- ___ ANTH 0620 Biocultural Anthropology (3)
- ___ ANTH 0680 Introduction to Physical Anthropology (3)
- ___ ANTH 0681 Introduction to Human Ecology (3)
- ___ ANTH 0780 Intro to Cultural Anthropology (3)
- ___ ANTH 1220 Climate Change Human Challenge (3)
- ___ ANTH 1304 Ecological Anthropology (3)
- ___ ANTH 1541 Cultural Resource Management (3)
- ___ ANTH 1600 Human Evolution and Variation (3)
- ___ ANTH 1724 The Anthropology of Science: Global Perspectives (3)
- ___ ANTH 1728 Gender and Globalization (3)
- ___ ANTH 1752 Anthropology of Food (3)
- ___ ANTH 1760 Anthropology of Law (3)
- ___ ANTH 1762 Human Ecology (3)
- ___ ANTH 1763 Field Methods (3)

Department of Communication

- ___ COMMRC 1102 Organizational Communication (3)
- ___ COMMRC 1149 Environmental Rhetoric (3)
- ___ COMMRC 1161 Communication Ethics (3)

Department of Economics

- ___ ECON 0360 Intro to Environmental and Resource Economics (3)*
- ___ ECON 0410 Economics of Diversity (3)*
- ___ ECON 0500 Intro to International Economics (3)*
- ___ ECON 0530 Intro to Development Economics (3)*
- ___ ECON 1360 Environmental Economics (3)*
- ___ ECON 1700 Proseminar Methodology of Economics (Climate Change, Immigration topics) (3)*

Department of English

- ___ ENGLIT 0612 Literature and Science (3)
- ___ ENGLIT 0710 Contemporary Environmental Literature (3)
- ___ ENGLIT 0800 Weather, Climate, Literature (3)
- ___ ENGLIT 0812 Media/Ecology (3)
- ___ ENGLIT 1005 Literature & the Environment (3)*
- ___ ENGLIT 1170 Romantic Nature (3)

___ ***ENGCOMP [ask advisor]***

Department of Gender, Sexuality and Women Studies

- ___ GSWS 0400 Gender and Science (3)
- ___ GSWS 1450 Gender and Sustainability (3)

Department of History of Art and Architecture

- ___HAA 046 Art in Public: Inclusion, Identity, and Activism (3)
- ___HAA 0940 Approaches to the Built Environment (3)

Department of History

- ___HIST 0700 World History (3)
- ___HIST 0705 An Environmental and Climate History of the World (3)
- ___HIST 0709 History of Global Health (3)
- ___HIST 0791 Health Controversies in History: Ethics, Publics, Interventions (3)
- ___HIST 1084 Food and History (3)
- ___HIST 1472 Water in Central Eurasia (3)
- ___HIST 1668 History of Pittsburgh (3)
- ___HIST 1669 History of Black Pittsburgh (3)
- ___HIST 1695 Environmental History (3)

Department of History of Art and Philosophy of Science

- ___HPS 0611 Principles of Scientific Reasoning (3)
- ___HPS 0618 Scientific Controversies (3)
- ___HPS 0620 Science and Religion (3)
- ___HPS 0621 Problem Solving: How Science Works (3)
- ___HPS 0630 Science and Pseudoscience (3)
- ___HPS 1653 Intro to the Philosophy of Science (3)

Department of Political Science

- ___PS 1203 Women in Politics (3)
- ___PS 1204 Ethnic and Religious Politics (3)
- ___PS 1232 Political Attitude & Public Opinion (3)
- ___PS 1235 Media & Politics (3)
- ___PS 1251 Urban Government (3)
- ___PS 1261 American Public Policy (3)
- ___PS 1262 Health Policy in the USA (3)
- ___PS 1267 Environmental Politics & Policy (3)*
- ___PS 1357 Politics of Food, Land, and Sustainability (3)*
- ___PS 1363 Globalization & Law (3)*
- ___PS 1374 Politics of Global Inequality (3)*
- ___PS 1375 Religion and Politics (3)*
- ___PS 1385/1542 Global Environmental Politics (3)
- ___PS 1543 Globalization & International Politics [Study Abroad]*

Department of Religious Studies

- ___RELGST 1519 Religion, Nature, Environment (3)
- ___RELGST 1770 Science & Religion (3)

Department of Sociology

- ___SOC 0230 Social Research Methods (3)
- ___SOC 0312 Science & Society (3)
- ___SOC 0317 Globalization (3)
- ___SOC 0352 Social Movements (3)
- ___SOC 0473 Sociology of Globalization and Health (3)
- ___SOC 1440 Experiencing Globalization (3)
- ___SOC 1445 Society & Environment (3)

Public Service

- ___ PUBSRV 1200 Practices of Nonprofit Management (3)
- ___ PUBSRV 1230 Fundraising for Nonprofit Org (3)
- ___ PUBSRV 1300 Legal Issues in Public Service (3)
- ___ PUBSRV 1310 Diversity Issues in Public Service(3)
- ___ PUBSRV 1315 Managing Projects and Contracts (3)
- ___ PUBSRV 1320 GIS in the Public Service(3)
- ___ PUBSRV 1455 Law, Ethics and Public Policy in Mass Media(3)

Urban Studies Program

- ___ URBNST 0080 Introduction to Urban Studies (3)
- ___ URBNST 1102 Introduction to GIS (3)
- ___ URBNST 1104 Applied GIS (3)
- ___ URBNST 1210 Neighborhood, Gentrification, Belonging and the City (3)
- ___ URBNST 1300 Urban Studies Research & Presentation Skills Seminar (3)
- ___ URBNST 1610 Remaking Cities through Policy and Practice (3)
- ___ URBNST 1614 Urban Sustainability (3)
- ___ URBNST 1700 International Urbanism Seminar (3)*

Graduate School of Public and International Affairs [Permission of instructor usually required, ask advisor]

- ___ PIA 2103 Managing People in the Public and Non-Profit Sector (3)
- ___ PIA 2115 Environmental Economics; Managing Natural Resources (3)
- ___ PIA 2140 Financial Practices for Economics & Environmental Sustainability (3)
- ___ PIA 2164 Natural Resources Governance & Management (3)
- ___ PIA 2204 Grant Writing & Fundraising (3)
- ___ PIA 2388 International Law & Policy (3)
- ___ PIA 2502 Global Environmental Policy (3)
- ___ PIA 2510 Economics of Development (3)
- ___ PIA 2520 Food Security: Agriculture & Rural Development (3)
- ___ PIA 2522 Global Energy (3)
- ___ PIA 2715 GIS for Public Policy (3)
- ___ PIA 2719 Applied GIS in the Local Government Context (3)

NATURAL SCIENCES & ENGINEERING ELECTIVES (at least 12 credits)

Department of Biological Sciences[#]

- ___ BIOSC 0050 Foundations in Biology Laboratory 1 (1)
- ___ BIOSC 0067 Foundations in Biology Research Laboratory 2 (1)*
- ___ BIOSC 0150 Foundations in Biology 1 (3)
- ___ BIOSC 0160 Foundations in Biology 2 (3)*
- ___ BIOSC 0350 Genetics (1)*
- ___ BIOSC 0370 Ecology (3)*
- ___ BIOSC 0390 Ecology Laboratory 2 (1)*

[#]NOTE: Students are encouraged to take BIOSC 0050, 0150, 0067, & 0160 as they are pre-requisites for other courses including Pymatuning field courses

Department of Chemistry

- ___ CHEM 0120 General Chemistry 2 (4)*
- ___ CHEM 0250 Intro Analytical Chemistry (3)*
- ___ CHEM 0310 Organic Chemistry 1 (3)*
- ___ CHEM 0350 Principles of Organic Chemistry (3)*

Department of Computer Science

___CS 0090	Sustainability & Computing (3)
___CS 0134	Web Site Design & Development (3)
___CS 0334	Intermediate Web Site Design & Development (3)*
___CS 0590	Social Implications of Computing Technology (3)*

Department of Geology and Environmental Science[#]

___GEOL 0060	History of the Earth (4)*
___GEOL 1001	Mineralogy (4)*
___GEOL 1015	Geology Colloquium (1)
___GEOL 1020	Sedimentology/Stratigraphy (4)*
___GEOL 1051	Groundwater Geology (4)*
___GEOL 1052	Paleoclimatology (4)*
___GEOL 1060	Geomorphology (4)*
___GEOL 1100	Structural Geology (4)*
___GEOL 1200	Paleontology: History of Life (4)*
___GEOL 1201	Marine Paleoecology (3)*
___GEOL 1309	Physicochemical Geologic Limnology (3)
___ GEOL 1330	Sustainability Flash Lab (3)
___ GEOL 1331	Health and Safety/HAZWOPER (3)
___ GEOL 1332	Management of Environmental and Non-Profit Organizations (3)
___ GEOL 1335	Environmental Issues: Air Quality (3) [W-class: GEOL 1336]
___ GEOL 1337	Environmental Issues: Water Quality (3) [W-class: GEOL 1338]
___ GEOL 1339	Environmental Issues: Mining and Gas Drilling (3) [W-class: GEOL 1340]
___ GEOL 1341	Environmental Issues: Parks & Forests (3) [W-class: GEOL 1342]
___GEOL 1446	Advanced Geographical Information Systems (3)*
___GEOL 1460	Introduction to Remote Sensing (3)
___GEOL 1510	Aquatic/Sedimentary Geochemistry (3)*
___GEOL 1515	Environmental Geochemistry (3)*
___GEOL 1640	Geologic and Environmental Hazards (3)*
___GEOL 1641	Ecosystem Ecology (4)*
___GEOL 1701	Geology of the Planets (3)*

#Note: Bolded classes are highly recommended and can be used for either social science electives or natural science electives in the ES major. Also, 19xx upper level classes (GEOL 1900 or higher) may be approved by your advisor or the course instructor.

Department of Physics

___PHYS 0087	Physics & Society (3)*
___PHYS 0089	Physics & Science Fiction (3)*
___PHYS 0091	Conceptual Physics 1 (3)
___PHYS 0110	Introduction to Physics 1 (3)*
___PHYS 0174	Basic Physics for Science & Engineering (3)*

School of Engineering: Civil and Environmental Department [Permission of instructor usually required]

___CEE 1503	Introduction to Environmental Engineering (3)*
___CEE 1513	Environmental Engineering Processes (3)*
___CEE 1514	Environmental Impact Assessment (3)*
___CEE 2210/1210	Engineering and Sustainable Development (3)*

OTHER REQUIREMENTS

You must take at least one other W course. You may get both W's completed within the department. See the list of electives above for other W options in the Geology department.

If you are interested in pursuing an Honors Thesis, please see your advisor!

CERTIFICATES (only 8 credits of overlap between major and certificates /minors allowed)

GIS Certificate

Environmental Studies majors may be interested in completing the GIS certificate which requires several courses which are already core courses or electives for the Environmental Studies major. The certificate requires 16 credits of coursework including two core courses:

- GEOL 1445 GIS, GPS, and Computer Methods (3)
- GEOL 1460 Introduction to Remote Sensing (3)

In addition, students must take six credits of electives (many of which may be required courses for the Environmental Studies major), and four credits of GEOL 1901 (Independent Study: a GIS or remote sensing project). More information on the Geographic Information Systems Certificate and possible electives can be found [here](#).

Sustainability Certificate

The Mascaro Center for Sustainable Innovation offers a Sustainability Certificate which integrates concepts from engineering, natural sciences, social sciences and humanities to sustainable systems, engineering practices, and society. The Certificate requires 18 credits of course work, including two core course across both the DSAS and SSOE tracks:

- ENGR 1905 Introduction to Sustainability (3)
- ENGR 1907 Sustainability Capstone Experience (3)

In addition, students must take either GEOL 1030 (DSAS track) **OR** CEE 1610 (SSOE track) and three electives (only one of which may be in the student's major department). Information on the Sustainability Certificate and possible electives can be found [here](#).

For a list of other certificates and minors offered from departments in the Kenneth P. Dietrich School of Arts and Sciences, click [here](#).