

ENVIRONMENTAL SCIENCE. BS/ Spring 2017

College: Arts and Sciences; <http://artsandsciences.fsu.edu/>
Degree: B.S.
Limited Access: No
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Description of Major

Environmental Science is the interdisciplinary study of environmental systems from a scientific perspective. Drawing principally from the areas of oceanography, geology, meteorology, biology and chemistry, the Environmental Science program will prepare students in the broader area of geosciences and is an attractive option for students seeking a broader interdisciplinary major with the rigor of mathematics and the physical sciences at its core.

FSU offers both the BS and BA degrees in Environmental Science. The BA degree differs from the BS degree in lower-level mathematics requirements and a greater emphasis on policy and humanities. The goals of these programs are to prepare exceptionally well-qualified graduates prepared to work in the interdisciplinary earth sciences, whether in government agencies, NGOs, or the private sector. They also provide a strong basis for graduate study in environmental and interdisciplinary earth sciences.

Prerequisite Coursework: 31-32 hours

The following are being proposed as common program prerequisites.

STA X122 (3) Intro. to Applied Statistics or ISC X523C (3) Research Methods

MAC X311 (4) Calculus I

BSC X010, X010L (3,1) Biological Science I, Lab

CHM X045, X045L (3,1) General Chemistry I, Lab

PHY X048C (5) General Physics A with Lab or PHY X053C (4) College Physics B with Lab

BSC X011, X011L (3, 1) Biological Science II, Lab

CHM X046, X046L (3,1) General Chemistry II, Lab

GLY X010C (4) Physical Geology with Lab

Note: State-wide common prerequisites are always under review. For the most current information and for acceptable alternative courses, visit the "Common Prerequisites Manual." This is available from the "Student Services" section of <http://www.flvc.org>.

Requirements for graduation in the College of Arts and Sciences include:

The College of Arts and Science requires proficiency in a foreign language through the intermediate (2220 or equivalent) level or sign language through the advanced (2614 or equivalent) level.

Requirements for Progression to and Continuation in the Upper-Division Major

Students should complete the prerequisite coursework for entrance to the major program of study. Students must also have completed a minimum of 52 hours of credit and at least half the required hours in Liberal Studies, including required English composition and Math, or an A.A degree. No required course in which a student has earned a grade below C- may be applied toward the degree in Environmental Science. A student who has received more than five unsatisfactory grades (U, F, D-, D, D+) in science, statistics, or mathematics courses (and their prerequisites) taken at Florida State University or elsewhere, including repeated unsatisfactory grades in the same course, will not be permitted to graduate with a degree in this major.

Mapping

Mapping is FSU's academic advising and monitoring system. Academic progress is monitored each Fall and Spring semester to ensure that students are on course to earn their degree in a timely fashion. Transfer students must meet mapping guidelines to be accepted into their majors. You may view the map for this major at www.academic-guide.fsu.edu.

Major Program of Studies at FSU: 41-42 hours

Environmental Science Core Courses (16-18 hours)

MET 1010 (3) Introduction to the Atmosphere or MET 2700 (3) General Meteorology

OCE 4008 (3) Principles of Oceanography

OCE 4017 (3) Current Issues in Environmental Science **or** GLY 3039 (3) Energy, Resources and Environment

GLY 4751C (3) Intro. to Remote Sensing **or** (if GLY4751 is not available) may substitute GIS 4043 **and** GIS 4043L (3,1) Geographic Information Processing & Systems, Lab

EVR4922 (4) Senior Capstone (Counts as Upper Division Writing)

Environmental Science Elective courses: Choose a total of twenty-one hours, at least twelve of which must be selected from List 1 and the remaining nine hours from any of the elective lists below.

List 1 (12 hour minimum):

Geoscience Elective Courses:

EOC	4631	Marine Pollution (3)
OCB	4631	Estuarine and Coastal Ecology (3)
GLY	2100	Historical Geology (3)
GLY	3200C	Mineralogy and Crystallography (3)
GLY	3310C	Igneous and Metamorphic Petrology (3)
GLY	3400C	Structural Geology (4)
GLY	3610C	Paleontology (4)
GLY	4751C	Introduction to Remote Sensing, Air Photo Interpretation and GIS for the Earth Sciences (3)
GLY	4884	Environmental Geology I (3)
GLY	4905	Directed Individual Study (Geohazards) (3)
MET	2101	Physical Climatology (3) or MET 3103C Climate Change Science (3) or ISC 2003 Global Change: Its Scientific and Human Dimensions (3)
MET	3220C	Meteorological Computations (3)
MET	3300	Introduction to Atmospheric Dynamics (3)
MET	4159r	Special Topics in Meteorology (1–3)
MET	4400C	Meteorological Instrumentation and Observation (3)
OCB	4631	Estuarine and Coastal Ecology (3)
OCB	4637	Marine Benthic Ecology (3)
OCC	4002	Introduction to Chemical Oceanography (3)
OCC	4060	Environmental Science Modeling (3)
OCE	3555	Environmental Science II: Habitable Planet (3)
OCE	4064	Marine Conservation Biology (3)
OCE	4265	Coral Reef Ecology (3)
OCP	4005	Introduction to Physical Oceanography (3)
OCE	4930r	Studies in Oceanography (1–4) (Topics vary: Biodiversity, Earth Systems, Marine Microbial Ecology, Geomicrobiology, (consent of adviser), Physics and Flow of Water Bodies, Environmental Toxicology,

Other classes are allowed as electives with department permission (six to seven hours maximum).

Related Areas of Focus

Environmental Engineering Tools (9-10 hour maximum)

CGN	2327L	Civil Engineering Graphics Lab (1)
CEG	2202C	Introduction to Geomatics Engineering (4)
EES	3040	Introduction to Environmental Engineering Science (3)
EES	3040L	Environmental Engineering Science Lab (1)
EGM	3512	Engineering Mechanics (4)
EGN	2123	Computer Graphics for Engineers (2)
ENV	4001	Environmental Engineering (3)
ENV	4041	Environmental Systems Analysis (3)
ENV	4341	Solid and Hazardous Waste Engineering (3)
ENV	4405	Water Reuse Engineering (3)

Environmental Geology/Geosciences (9-10 hour maximum)

GLY	4084	Environmental Geology (3)
GLY	4544C	Sedimentation and Stratigraphy (4)
GLY	4451	Introduction to Geophysics (3)
GLY	4820	Principles of Hydrology (3)

GLY	4905	Geohazards (3)
GLY	4249	Principles of Geochemistry (2)
*Environmental Science Students with a focus area in GLY, wanting to use Field Camp as their Capstone should take the following coursework:		
GLY	4544C	Sedimentation and Stratigraphy
GLY	3400C	Structural Geology
GLY	4790	Field Camp/Field Geology (Substitute for BS Environmental Science Capstone)

Biology (9-10 hour maximum):

BOT	4394	Plant Molecular Biology (3)
BSC	3052	Conservation Biology (3)
BSC	3312	Marine Biology (3)
BSC	3402L	Experimental Biology Laboratory (3)
BSC	3930	Seminar in Biological Frontiers (1)
BSC	3938	Careers in the Biological Sciences (1)
BSC	4473C	Introduction to Scientific Diving (3) (Faculty Permission Required)
BSC	4933r	Selected Topics in Biological Science (1-4)
PCB	4674	Evolution (3)
ZOO	4454C	Biology of Fishes (4)

Chemistry (9-10 hour maximum)

CHM	2210	Organic Chemistry I (3)
CHM	2211	Organic Chemistry II (3)
CHM	2211L	Organic Chemistry II Laboratory (3)
CHM	3120	Analytical Chemistry I (3)
CHM	3120L	Analytical Chemistry I Laboratory (1)
CHM	4080	Environmental Chemistry I (3)
CHM	4081	Environmental Chemistry II (3)

Geography/GIS (9-10 hour maximum)

GEO	2200C	Physical Geography (3)
GEO	4114	Environmental Field Methods (3)
GEO	4162C	Spatial Data Analysis (3)
GEO	4340	Living in a Hazardous Environment (3)
GEO	4357	Environmental Conflict and Economic Development (3)
GEO	4376	Landscape Ecology (3)
GEO	4930r	Special Topics in Geography (1-3)
GIS	3015	Map Analysis (3)
GIS	4006	Computer Cartography (3)
GIS	4043	Geographic Information Systems (3)
GIS	4043L	GIS Lab (1)

Graduate School Preparation: (no maximum)

CHM	2210	Organic Chemistry I (3)
CHM	2211	Organic Chemistry II (3)
CHM	2211L	Organic Chemistry II Lab (3)
MAC	2311	Calculus with Analytic Geometry I (4)
MAC	2312	Calculus with Analytic Geometry II (4)
MAC	2313	Calculus with Analytic Geometry III (5)
PHY	2049C	General Physics B (five hours at FSU) (5)

Collateral Minor. 0 beyond required courses

By completing the requirements of the BS Environmental Science Program, students automatically receive a collateral minor in Earth, Ocean, and Atmospheric Science. Twelve additional hours of coursework in specific elective classes may constitute a specific minor within that field. Talk to your advisor for more information

Computer Skills Competency: 0 hours beyond other requirements. BSC 2010L (1).

Oral Communication Competency: 0-3 hours.

Students must demonstrate the ability to orally transmit ideas and information clearly. This requirement may be met through appropriate high school speech training or with an approved college-level approved course, such as SPC 1017 or SPC 2608.

Minimum Program Requirements Summary

Total Hrs. Required 120

Liberal Studies 36*

BS Prerequisite Coursework 27-29*

BS Major Coursework 41-42*

Minor Coursework 0 beyond other requirements

Foreign Language 0-12 (depending on placement)

Computer Skills 0 beyond major

Oral Communication Competency 0-3

Electives to bring total hours to 120

*Note: Some coursework required for this major (prerequisite/collateral/major) may also be applied to Liberal Studies or minor requirements.

Remarks:

1. A minimum of 45 hours at the 3000 level or above, 30 of which must be taken at this University.
2. Half of the major course semester hours must be completed in residence at this University.
3. The final 30 hours must be completed in residence at this University.

Employment Information

Representative job titles related to this major: Environmental technician, geoscientist, environmental scientist, hydrologist, general physical scientist, and oceanographer. Some positions may require additional education or training.

Representative Employers: Federal, state, and local governments; NGOs; private employers.

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