



Alignment of Degree Programs

CIP Code & Title: 03.0104 Environmental Science

Level: Bachelor's

Area of Strategic Emphasis: STEM

PROGRAM DESCRIPTION:

This Bachelor of Science in Environmental Science and Policy emphasizes the understanding of interrelationships between social phenomena and the natural (i.e., biological-physical-chemical) environment. It is intended to: (1) increase student awareness of these interconnections in their everyday lives; (2) introduce students to a variety of social science perspectives (including politics and policies), along with hard environmental science perspectives, that help students make sense of these connections; (3) identify the contributions of each of these perspectives to our understanding of environmental problems; (4) discuss how natural resource management and environmental policy reflect these perspectives; and (5) produce graduates who promote sustainability in all facets of human enterprise.

CURRICULUM:

A. Student Learning Outcomes:

Goal 1: Discipline Specific Knowledge and Skills

- 1a. Outcome: Upon completing the capstone course ESP Seminar, students will demonstrate knowledge of the principles of environmental science by describing the interactions of physical, chemical, biological, and anthropogenic processes and their impacts in the biosphere. To achieve this outcome, students will read current scholarly articles in the discipline, engage in course discussions, and critically analyze the research in breakout groups. These activities culminate in a research report that students include in a Comprehensive Professional Portfolio.
- 1b. Outcome: The research reports are evaluated by two members of the Geosciences faculty using a rubric approved by the Geosciences Undergraduate Committee. The rubric evaluates the level of achievement as Benchmark (1 point), Milestone (2 points), or Capstone (3 points). Interrater reliability is measured using the percent agreement calculation. If the percent agreement is greater than 75%, then the rubric is acceptable and rater's scores are averaged. If the percent agreement is less than 75%, then the rubric is evaluated by the Geosciences Undergraduate Committee for recalibration.

Goal 2: Communication Skills

- 2a. Outcome: Upon completing the capstone course ESP Seminar, students will be able to analyze and formulate solutions for environmental problems using contemporary research tools by critically evaluating scientific information from multiple sources and viewpoints. These activities culminate in a research report that students include in a

Comprehensive Professional Portfolio.

- 2b. Outcome: Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion. The research reports are evaluated by two members of the Geosciences faculty using a rubric approved by the Geosciences Undergraduate Committee. The rubric evaluates the level of achievement as Benchmark (1 point), Milestone (2 points), or Capstone (3 points). Interrater reliability is measured using the percent agreement calculation. If the percent agreement is greater than 75%, then the rubric is acceptable and the raters' scores are averaged. If the percent agreement is less than 75%, then the rubric is evaluated by the Geosciences Undergraduate Committee for recalibration.

Goal 3: Critical Thinking Skills

- 3a. Outcome: Upon completing the capstone course ESP Seminar, students will demonstrate the ability to effectively communicate information by proficiently writing a research paper for a contemporary environmental problem. These activities culminate in a Comprehensive Professional Portfolio.
- 3b. Outcome: The Comprehensive Professional Portfolios are evaluated by two members of the Geosciences faculty using a rubric approved by the Geosciences Undergraduate Committee. The rubric evaluates the level of achievement as Benchmark (1 point), Milestone (2 points), or Capstone (3 points). Interrater reliability is measured using the percent agreement calculation. If the percent agreement is greater than 75%, then the rubric is acceptable and the raters' scores are averaged. If the percent agreement is less than 75%, then the rubric is evaluated by the Geosciences Undergraduate Committee for recalibration.

B. Admission Standards for the Program:

B1. University Admissions: Admission to the University is based on the University's Undergraduate Admission Requirements that may be found by clicking on the following urls:

- **Freshman:** <https://www.usf.edu/admissions/freshmen/admission-information/requirements-deadlines.aspx>
- **Transfer:** <https://www.usf.edu/admissions/transfer/admission-information/index.aspx>
- **International:** <https://www.usf.edu/admissions/international/admission-information/index.aspx>

C. Graduation Requirements for the Program:

Satisfactory completion of the following requirements:

- General Education Program (36 credit hours), including State Core General Education, State Computation and State Communication;
- Minimum of 120 unduplicated credit hours;
- A minimum adjusted grade point average (GPA) of 2.0 on all coursework taken at USF and an overall 2.0 GPA average on all college-level coursework;
- Major and college requirements in a chosen degree program;
- Nine credit hours of coursework taken during the summer term(s) (if entered USF with less than 60 credit hours);

- Registration and successful completion of at least thirty (30) of the last sixty (60) credit hours;
- 42 credit hours of upper-level coursework;
- Civics Literacy;
- Foreign language admissions coursework.

D. Curricular Framework:

D1. State Mandated Common Prerequisites:

State Mandated	Credits	USF Course	Credits
Biology I with Laboratory: BSC X010/X010L Biology I and Lab or BSC X010C	4	BSC 2010/2010L Cellular Processes and Lab (4)	4
Biology II with Laboratory: BSC X011/X011L Biology II and Lab or BSC X011C	4	BSC 2011/2011L Biodiversity and Lab (4)	4
Chemistry I with Laboratory: CHM X045/X045L General Chemistry I & Lab or BSC X045C	4	CHM 2045/2045L General Chemistry I & Lab (4)	4
Chemistry II with Laboratory: CHM X046/X046L General Chemistry II & Lab or BSC X046C	4	CHM 2046/2046L General Chemistry II & Lab (4)	4
Statistics: STA X023 Statistics	3	STA 2023 Introductory Statistics I (3)	3
Calculus I: MAC X311 Calculus I	4	MAC 2311 Calculus I (4)	4
Total Credit Hours	23	Total Credit Hours	23

D2. Required Courses: (23 credit hours)

D2a. Major Core Courses: 9 courses; 23 credit hours

- EVR 2001 Introduction to Environmental Science (3)
- EVR 2001L Environmental Science Lab (1)
- EVR 2861 Introduction to Environmental Policy (3)
- GEO 4372 Global Conservation (3)
- GIS 3006 Mapping and Geovisualization (3)
- EVR 4921 Environmental Science and Policy Seminar (1)
- EVR 3218 Wildlife Research Techniques (3) or EVR 4114 Climate Change (3)
- GEO 4340 Natural Hazards (3) or GEO 3280 Environmental Hydrology (3)
- EVR 4910 Environmental Science and Policy Project (3) or EVR 4940 Environmental Science Internship (3)

D3. Major (Restricted) Electives: (21 credit hours)

Students complete an Environmental Science and Policy program of study to include one of three Concentrations as follows: Environmental Science, Environmental Analysis or Environmental Policy and Sustainability.

D3a. Environmental Science Concentration: 7 courses; 21 credit hours

Choose 2 courses (minimum of 6 credit hours) from the following list:

- MAC 2242 Life Sciences Calculus II (3) or MAC 2282 Engineering Calculus II (4) or MAC 2312 Calculus II (4)
- CHM 2210 Organic Chemistry I (3) and CHM 2210L Organic Chemistry Laboratory I (2)

- CHM 3080 Chemistry for Sustainability (3)
- CHM 3120C Elementary Analytical Chemistry (4)
- GLY 2010 Dynamic Earth: Introduction to Physical Geology (3) or GEO 2200 Introduction to Physical Geography (3)

AND

Select a minimum of 5 courses (15 credit hours) of the following courses:

- BSC 3312 Marine Biology (3)
- ENV 4417 Water Quality and Treatment (3)
- EVR 4027 Wetland Environments (3)
- EVR 4104 Karst Environments (3)
- EVR 4114 Climate Change (3)
- EVR 4163 Forest Ecology and Management (3)
- EVR 3218 Wildlife Research Techniques (3)
- EVR 4807 Sustainable Healthy Environments (3)
- EVR 4051 Environmental Field Methods (3)
- EVR 4930 Selected Topics (3)
- EVR 4033 Environmental Regulation (3)
- EVR 4873 Environmental Policy and Sustainability (3)
- EVR 4807 Sustainable Healthy Environments (3)
- GEO 3280 Environmental Hydrology (3)
- GEO 4210 Process Geomorphology (3)
- GEO 4265 Soil Genesis and Classification (3)
- GLY 3104C Stratigraphy and Paleontology (4)
- GLY 3552C Sedimentary Rocks and Processes (4)
- GEO 4284 Water Resources Management (3)
- GEO 4300 Biogeography (3)
- GEO 4340 Natural Hazards (3)
- GIS 4035C Remote Sensing of the Environment (3)
- GIS 4043C Geographic Information Systems (3)
- GLY 4734 Beaches and Coastal Environments (3)
- GLY 4822C Hydrogeology (4)
- MET 4002C Climatology (4)
- MET 4012C Meteorology (4)
- MET 4106C Climate Studies (4)
- PCB 3043/PCB 3043L Principles of Ecology (4)

D3b. Environmental Analysis Concentration: 7 courses; 21 credit hours

Required (2 courses; 6 credit hours)

- EVR 4051 Environmental Field Methods (3)
- GIS 4043C Geographic Information Systems (3)

Electives (5 courses; 15 credit hours)

Select a minimum of five of the following courses:

- GIS 4035C Remote Sensing of the Environment (3)
- EVR 4027 Wetland Environments (3)
- EVR 4104 Karst Environments (3)
- EVR 4163 Forest Ecology and Management (3)

- GEO 4265 Soil Genesis and Classification (3)
- GEO 4284 Water Resources Management (3)
- URP 4052 Urban and Regional Planning (3)
- URP 4050 City Planning and Community Development (3)
- MET 4106C Climate Studies (4)
- GEO 3280 Environmental Hydrology (3)
- GEO 4340 Natural Hazards (3)
- GIS 4302C GIS for Sustainability (4)
- GLY 4734 Beaches and Coastal Environments (3)
- GIS 4300 Environmental Modeling with GIS (3)
- GEO 3164C Research Methods in Geography (3)
- GEO 4114C Geographic Techniques and Methodology (3)

D3c. Environmental Policy and Sustainability Concentration: 7 courses; 21 credit hours

Required (2 courses; 6 credit hours)

- EVR 4033 Environmental Regulation (3) or POS 3697 Environmental Law (3)
- EVR 4873 Environmental Policy and Sustainability (3) or EVR 4807 Sustainable Healthy Environments (3)

Electives (5 courses; 15 credit hours)

Select a minimum of five of the following courses:

- EVR 4027 Wetland Environments (3)
- EVR 4104 Karst Environments (3)
- EVR 4114 Climate Change (3)
- EVR 4163 Forest Ecology and Management (3)
- EVR 3218 Wildlife Research Techniques (3)
- EVR 4807 Sustainable Healthy Environments (3)
- EVR 4930 Selected Topics (3)
- GEO 3602 Urban Geography (3)
- GEO 4340 Natural Hazards (3)
- GEO 4471 Political Geography (3)
- GEO 4604 Topics in Urban Geography (3)
- GEO 4700 Transportation Geography (3)
- GIS 4043C Geographic Information Systems (3)
- POS 3182 Florida Politics and Government (3)
- REL 4188 Religion and Ecology Seminar (3)
- URP 4052 Urban and Regional Planning (3)
- GEO 4284 Water Resources Management (3)
- GEO 4265 Soil Genesis and Classification (3)
- GIS 4302C GIS for Sustainability (4)
- GIS 4300 Environmental Modeling with GIS (3)
- GEO 3352 The Human Footprint on the Landscape (3)
- GIS 4302C GIS for Sustainability (4)

D4. Sequenced Course of Study:

- An exclamation mark (!) is indicated for any course and/or placeholder that must be taken in

sequence and/or in the semester listed.

- Course Type refers to how the course is utilized in the degree program, e.g., Supporting, Major Core, Business Foundation, etc. It also includes “placeholder” information such as: Civics Literacy Test, Apply for Graduation.
- General Education Course Type refers to the General Education core area the course meets.

D4a. 8-Semester Plan for FTIC Students

Fall 1						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	MAC 2311		Yes	Yes	State Computation	4
	XXX XXXX		No	Yes	State Core General Education Humanities	3
!	EVR 2001	Major Core	No	Yes	State Core General Education Natural Sciences	3
!	EVR 2001L	Major Core	No	No		1
	ENC 1101		No	Yes	State Core General Education Communication	3
Total Semester Credit Hours:						14

Spring 1						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	ENC 1102		No	Yes	Enhanced General Education	3
	EVR 2861	Major Core	No	No		3
!	CHM 2045		Yes	No		3
!	CHM 2045L		Yes	No		1
	XXX XXXX	General/Unrestricted Elective	No	No		4
Total Semester Credit Hours:						14

Summer 1						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	XXX XXXX	General/Unrestricted Elective	No	No		3
Total Term Credit Hours:						3

Fall 2						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	CHM 2046		Yes	No		3
	CHM2046L		Yes	No		1

XXX XXXX		No	Yes	State Core General Education Social Sciences	3
XXX XXXX	General/Unrestricted Elective	No	No		3
XXX XXXX	General/Unrestricted Elective	No	No		3
Total Semester Credit Hours:					13

Spring 2						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	STA 2023		Yes	Yes	State Core General Education Mathematics	3
	GIS 3006	Major Core	No	Yes	Enhanced General Education Information and Digital Literacy	3
	XXX XXXX	General/Unrestricted Elective	No	No		3
	XXX XXXX	General/Unrestricted Elective	No	No		4
Total Semester Credit Hours:						13

Summer 2						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	XXX XXXX	Upper Level Elective	No	No		3
	XXX XXXX	Upper Level Elective	No	No		3
Total Term Credit Hours:						6

Fall 3						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	BSC 2010		Yes	No		3
	BSC 2010L		Yes	No		1
	XXX XXXX	Upper Level Elective	No	No		3
	GEO 4372	Major Core	No	Yes	Enhanced General Education Human and Cultural Diversity	3
	XXX XXXX	Upper Level Elective	No	No		3
Total Semester Credit Hours:						13

Spring 3						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	BSC 2011		Yes	No		3
	BSC 2011L		Yes	No		1

GEO 3280 OR GEO 4340	Major Core	No	Yes	Enhanced General Education Ethical Reasoning and Civic Engagement Internship	3
XXX XXXX	Concentration Elective	No	No		3
XXX XXXX	Upper Level Elective	No	No		3
Total Semester Credit Hours:					13

Summer 3						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	XXX XXXX	Concentration Elective	No	No		3
	XXX XXXX	Upper Level Elective	No	No		3
Total Term Credit Hours:						6

Fall 4						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
	XXX XXXX	Concentration Elective	No	No		3
	EVR 3218 OR EVR 4114	Major Core	No	Yes	Enhanced General Education Creative Thinking	3
	XXX XXXX	Concentration Elective	No	No		3
	XXX XXXX	Upper Level Elective	No	No		3
Total Semester Credit Hours:						12

Spring 4						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	General Education Course Type	Total
!	EVR 4940 or EVR 4910	Major Core	No	Yes	Enhanced General Education High Impact Practice Internship	3
	EVR 4921	Major Core	No	No		1
	XXX XXXX	Concentration Elective	No	No		3
	XXX XXXX	Concentration Elective	No	No		3
	XXX XXXX	Concentration Elective	No	No		3
Total Semester Credit Hours:						13

Total Degree Program Credit Hours:					120
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D4b. 4-Semester Plan for FCS AA Transfer Students

Fall 1						
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!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	Intentionally Left Blank	Total
!	EVR 2001	Major Core	No	No		3
!	EVR 2001L	Major Core	No	No		1
	GIS 3006	Major Core	No	No		3
	XXX XXXX	Concentration Core	No	No		3
	XXX XXXX	Upper Level Elective	No	No		3
Total Semester Credit Hours:						13

Spring 1						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	Intentionally Left Blank	Total
	EVR 2861	Major Core	No	No		3
	GEO 4372	Major Core	No	No		3
	XXX XXXX	Concentration Elective	No	No		3
	XXX XXXX	Upper Level Elective	No	No		5
Total Semester Credit Hours:						14

Summer 1						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	Intentionally Left Blank	Total
	XXX XXXX	Upper Level Elective	No	No		3
	XXX XXXX	Upper Level Elective	No	No		3
Total Term Credit Hours:						6

Fall 2						
!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	Intentionally Left Blank	Total
	GEO 3280 or GEO 4340	Major Core	No	No		3
	XXX XXXX	Concentration Elective	No	No		3
	XXX XXXX	Concentration Elective	No	No		3
	EVR 3218 or EVR 4114	Major Core	No	No		3
	XXX XXXX	Upper Level Elective	No	No		2
Total Semester Credit Hours:						14

Spring 2						
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!	Current Course Prefix and Number	Course Type	State Mandated Common Prerequisite	Enhanced General Education Requirement	Intentionally Left Blank	Total
	EVR 4940 or EVR 4910	Major Core	No	No		3
	EVR 4921	Major Core	No	No		1
	XXX XXXX	Concentration Elective	No	No		3
	XXX XXXX	Concentration Elective	No	No		3
	XXX XXXX	Concentration Elective	No	No		3
		Placeholder: Apply for Graduation				
Total Semester Credit Hours:						13

Total Credit Hours:						60
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ADDITIONAL REQUIREMENTS:

- Unless stated otherwise, a grade of C- is the minimum acceptable grade in prerequisite courses.
- Unless stated otherwise, a grade of C- is the minimum acceptable grade.

NOTES:

- No changes in the State Mandated Common Prerequisite courses.
- Do not anticipate any significant increase in students and the student to faculty ratio post consolidation is expected to be stable.
- Discontinuing concentrations and tracks in Environmental Policy and Sustainability and a track in Environmental Science.