

# FLORIDA ATLANTIC UNIVERSITY™

## Graduate Programs—PROGRAM CHANGE REQUEST

UGPC APPROVAL \_\_\_\_\_  
 UFS APPROVAL \_\_\_\_\_  
 CATALOG \_\_\_\_\_

DEPARTMENT: ENVIRONMENTAL SCIENCE

COLLEGE: SCIENCE

PROGRAM NAME:

**EFFECTIVE DATE**

ENVIRONMENTAL SCIENCE

(PROVIDE TERM/YEAR)

SUMMER 2016

PLEASE EXPLAIN THE REQUESTED CHANGE(S) AND OFFER RATIONALE BELOW AND/OR ATTACHED:

SACS REQUIRED SOME CHANGES IN THE WORDING OF THE COMBINED DEGREE PROGRAMS, INDICATING THAT THE UNDERGRADUATE DEGREE WOULD BE 120 CREDITS, AND THAT IT WOULD BE COMPLETED FIRST, AND THAT THE GRADUATE DEGREE WOULD BE AT LEAST 30 CREDITS OF GRADUATE COURSEWORK.

Faculty contact, email and complete phone number:

Dale Gawlik 297-3333

Consult and list departments that might be affected by the change and attach comments.

No changes in program, just changes in catalog wording.

**Approved by:**

Department Chair: Charles Roberts for Dale Gawlik

College Curriculum Chair: Charles Roberts

College Dean: Chuck Miller

UGPC Chair: \_\_\_\_\_

Graduate College Dean: \_\_\_\_\_

UFS President: \_\_\_\_\_

Provost: \_\_\_\_\_

**Date:**

1-22-16

1-23-16

1-23-16

Email this form and syllabus to [UGPC@fau.edu](mailto:UGPC@fau.edu) one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

## Combined B.S. with Major in Biological Sciences and M.S. with Major in Environmental Science

This combined degree program leads to both a bachelor's (B.S.) in Biological Sciences degree and a master's (M.S.) in Environmental Science degree. It is a laboratory and field intensive curriculum that provides hands-on training for students who are interested in a career in the rapidly expanding field of environmental science. This program also provides excellent preparation for the Integrative Biology Ph.D. and the Geosciences Ph.D. **The combined degree program is 156 credits, 120 for the undergraduate degree and 36 for the master's degree. Students complete the undergraduate degree first, taking in their senior year no more than 12 credits of graduate coursework which will be used to satisfy both degrees. See specific program requirements described below.**

### Prerequisite Coursework for Transfer Students

Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the *Transfer Student Manual*.

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

### Admission Requirements and Eligibility

Students would take the Graduate Record Exam (GRE) and apply to the B.S./M.S. in their junior year.

In addition to meeting all of the University and College admissions requirements for graduate study, each applicant for the M.S. with Major in Environmental Science must:

1. Have a minimum GRE score of 151 on the verbal section and 148 on the quantitative section, or a cumulative quantitative-verbal score of 1000 or higher on the GRE if taken before October 2011. GRE scores more than five years old will not be accepted.
2. Have a minimum 3.0 average for the last 60 credits of undergraduate work.
3. Obtain approval from the Environmental Science Program.

Students would typically begin taking graduate courses in their senior year that would apply to both their B.S. and M.S. degrees. The program can be completed in five years by allowing 12 credits of graduate-level courses to fulfill course requirements for both the B.S. and M.S. degrees. Students must maintain a minimum GPA of 3.0 to remain in the program.

### Curriculum

The core curriculum for students in the combined B.S./M.S. degree program satisfies the requirements for the bachelor of science (B.S.) in Biological Sciences. The difference in this combined program is the emphasis on environmental science and the 12 credits in graduate courses that count toward the M.S. program taken during the senior year.

Core Requirements (47-49 credits)		
Biological Principles and Lab	BSC 1010, 1010L	4
Biodiversity and Lab	BSC 1011, 1011L	4
General Chemistry 1 and Lab	CHM 2045, 2045L	4
General Chemistry 2 and Lab	CHM 2046, 2046L	4
Organic Chemistry 1	CHM 2210	3

Organic Chemistry 2	CHM 2211	3
Methods of Calculus	MAC 2233	3 or
Calculus with Analytic Geometry 1	MAC 2311	4
College Physics 1	PHY 2053	4 or
General Physics 1	PHY 2048	4
College Physics 2	PHY 2054	4 or
General Physics 2	PHY 2049	4
General Physics 1 Lab	PHY 2048L	1
General Physics 2 Lab	PHY 2049L	1
Experimental Design and Statistical Inference	PSY 3234	3 or
Introduction to Biostatistics	STA 3173	3
<b>Select at least three of the courses below (the other may be used as an elective)</b>		
Genetics	PCB 3063	4
Molecular and Cell Biology	PCB 4023	3
Principles of Ecology	PCB 4043	3
Evolution	PCB 4674	3

<b>Electives (select at least 21 credits from the list below)</b>		
Biochemistry 1	BCH 3033	3
Vascular Plant Anatomy and Lab	BOT 3223, 3223L	4
Marine Botany and Lab	BOT 4404, 4404L	4
Principles of Plant Physiology and Lab	BOT 4503, 4503L	4
Plant Biotechnology	BOT 4734C	3
Biotechnology 1 Lab	BSC 4403L	2
Biotechnology 2 Lab	BSC 4427L	2
Biology of Cancer	BSC 4806	3
Directed Independent Study	BSC 4905	1-3
Honors Research	BSC 4917	3
Honors Thesis	BSC 4918	3
Special Topics (Model Systems Genetics Lab)	BSC 4930	3
Organic Chemistry Lab	CHM 2211L	2
General Microbiology and Lab	MCB 3020, 3020L	4
Medical Bacteriology	MCB 4203	3
Microbial Ecology	MCB 4603	3
Marine Biodiversity and Lab	OCB 4032, 4032L	4
Marine Biology and Lab	OCB 4043, 4043L	4

Marine Microbiology and Molecular Biology and Lab	OCB 4525, 4525L	4
Marine Ecology and Lab	OCB 4633, 4633L	4
Marine Science	OCE 4006	4
Issues in Human Ecology	PCB 3352	3
Human Morphology and Function 1 and Lab	PCB 3703, 3703L	4
Human Morphology and Function 2 and Lab	PCB 3704, 3704L	4 or
Immunology	PCB 4233	3
Molecular Genetics	PCB 4522	4
Comparative Animal Physiology and Lab	PCB 4723, 4723L	4
Reproductive Endocrinology	PCB 4803	3
Cellular Neuroscience and Disease	PCB 4842	3
Practical Cell Neuroscience	PCB 4843C	3
Invertebrate Zoology and Lab	ZOO 2203, 2203L	5
Functional Biology of Marine Animals and Lab	ZOO 4402, 4402L	4
Ornithology and Lab	ZOO 4472, 4472L	4
Comparative Vertebrate Morphogenesis and Lab	ZOO 4690, 4690L	5

Students should consult their faculty advisor concerning additional courses that may be applied to their degree requirements.

**Graduate courses that may count toward both the B.S. and the M.S. requirements (12 credits)**

Students may select 12 credits from the graduate courses listed below to count for both the B.S. in Biological Sciences and the M.S. in Environmental Science. See the M.S. in Environmental Science degree requirements [here](#) for more courses that count toward the M.S. degree after the B.S. degree is completed.

<b>Colloquium</b>		
Environmental Sciences Colloquium Series (May be taken more than once.)	EVS 6920	1

<b>Core Subject Areas</b>		
<b>Chemistry</b>		
Chemistry for Environmental Scientists	CHS 6611	3
<b>Geographic Information Systems</b>		
Introduction to GIS in Planning	URP 6270	3
Principles of Geographic Information Systems	GIS 5051C	3
Remote Sensing of the Environment	GIS 5038C	3
<b>Modeling</b>		
Modeling Groundwater Movement	GLY 6836	3

EVR 6070	3	Ecological Modeling
PCB 6406	3	Ecological Theory
<b>Statistics</b>		
PCB 6456	4	Environmental Design and Biometry
<b>Conservation and Ecology</b>		
GEO 5305	3	Biogeography
GEO 6317	3	Plants And People
EVR 6334	3	Environmental Restoration
BOT 5155	2	Flora of South Florida
BOT 5155L	2	Flora of South Florida Lab
BOT 6606	2	Coastal Plant Ecology
BOT 6606L	2	Coastal Plant Ecology Lab
PCB 6045	3	Conservation Biology
PCB 6317	3	Marine Ecology
PCB 6046	3	Advanced Ecology
PCB 6317L	2	Marine Ecology Lab and Field Studies
BSC 6846	3	Scientific Communication
PCB 6307	3	Freshwater Ecology
PCB 6307L	2	Freshwater Ecology Lab
BSC 6365	3	Symbiosis
PCB 6749C	4	Environmental Physiology
GLY 5736C	3	Marine Geology
GLY 6737	3	Coastal Environments
GLY 5575C	3	Shore Erosion and Protection
GLY 6746	3	Global Environmental Change
GLY 6457	3	Environmental Geophysics
OCB 6810	3	Natural History of the Indian River Lagoon
OCE 6019	3	Marine Global Change
ZOO 6459	1-2	Seminar in Ichthyology
ZOO 6256	3	Marine Invertebrate Zoology
ZOO 6256L	2	Marine Invertebrate Zoology Lab
ZOO 6456	3	Natural History of Fishes
ZOO 6456L	2	Natural History of Fishes Lab
ZOO 6544C	1	Seminar in Avian Ecology
<b>Policy and Planning</b>		

Human-Environmental Interactions	GEA 6277	3
Geographic Analysis of Population	GEO 5435C	3
Culture, Conservation and Land Use	GEO 6337	3
Coastal Hazards	GLY 6888	3
Introduction to Transportation Planning	URP 6711	3
Environmental Analysis in Planning	URP 6425	3
Environmental Policy and Programs	URP 6429	3
Sustainable Cities	URP 4403	3
Urban and Regional Theory	URP 6840	3
Women, Environment, Ecofeminism, Environmental Justice	WST 6348	3
Environmental Philosophy	PHM 6035	3

### **Thesis Option**

A student curriculum consists of a minimum of 36 credits taken in the following four categories:

*Core Subject Areas:* 22-28 credits from the core subject areas with at least one course from four different core subject areas.

*Electives:* No more than 6 credits of electives taken outside the core areas will be counted toward the degree, and no more than 6 credits may be 4000-level courses. No more than 3 credits of Directed Independent Study may be counted toward this degree.

*Thesis:* 6-12 credits (EVS 6971).

*Colloquium:* 2 credits or more.

### **Non-Thesis Option**

A student curriculum consists of a minimum of 36 credits taken in the following three categories:

*Core Subject Areas:* 25-31 credits from the core subject areas with at least one course from four different core subject areas.

*Directed Independent Study:* 3 credits (EVS 6905) required. Up to 3 additional credits may be taken as electives.

*Electives:* No more than 6 credits of electives taken outside the core areas will be counted toward the degree.

*Colloquium:* 2 credits or more.