



**FLORIDA
ATLANTIC
UNIVERSITY**

**NEW/CHANGE PROGRAM REQUEST
Undergraduate Programs**

Department **GEOSCIENCES**
College **SCIENCE**

UUPC Approval 2/26/24
UFS Approval _____
Banner _____
Catalog _____

Program Name

BS Geosciences Climate Change
Concentration

New Program*

Change Program*

**Effective Date
(TERM & YEAR)**

FALL 2024

Please explain the requested change(s) and offer rationale below or on an attachment.

Remove BSC 4307 "Climate Change Bio: Ecosystems to Human Health" as a requirement
Remove GEO 3342 "Sea Level Rise: Impacts and Responses" as a requirement
Add MET 3112 "Tropical Climatology" as a requirement
Add MET 3052 "Atmospheric Hazards" as a requirement
Add BSC 4307 "Climate Change Bio: Ecosystems to Human Health" as an elective
Add GEO 3342 "Sea Level Rise: Impacts and Responses" as an elective
Add MET 4142 "Climate Data Applications" as an elective
Remove ECO 3003 "Economic Principles and Policies" as an elective
Amend course number of GEO 4167C "Spatial Data Analysis" to GIS 4115C "Spatial Data Analysis"

The amendments listed above will enhance the BS Geosciences Climate Change Concentration, by adding newly created climatology classes to the program. Furthermore, classes that were previously required, but not offered with sufficient frequency to meet this status, will now be made electives. This will be more convenient for students, precluding them from having to seek substitutions during those years that these classes are unavailable.

**All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.*

Faculty Contact/Email/Phone

James Gammack-Clark, jgammack@fau.edu, 561-297-0314

Consult and list departments that may be affected by the change(s) and attach documentation
Department of Biological Sciences
Department of Economics

Approved by

Department Chair

[Signature]

Date

1/31/24

College Curriculum Chair

[Signature]

2/15/24

College Dean

[Signature]

2/16/24

UUPC Chair

Korey Sorge

2/26/24

Undergraduate Studies Dean


Dan Meeroff

2/26/24

UFS President

Provost

Email this form and attachments to mjenning@fau.edu seven business days before the UUPC meeting.

 FLORIDA ATLANTIC UNIVERSITY	NEW/CHANGE PROGRAM REQUEST Undergraduate Programs		UUPC Approval <u>2/26/24</u> UFS Approval _____ Banner _____ Catalog _____
	Department <u>GEOSCIENCES</u> College <u>SCIENCE</u>		
Program Name BS Geosciences Geography Concentration	<input type="checkbox"/> New Program* <input checked="" type="checkbox"/> Change Program*	Effective Date (TERM & YEAR) FALL 2024	
<p>Please explain the requested change(s) and offer rationale below or on an attachment.</p> <p>Add EVR 4322 "Intro to Coastal Freshwater Resources" as an elective Add MET 3052 "Atmospheric Hazards" as an elective Add MET 4142 "Climate Data Applications" as an elective Add MET 3112 "Tropical Climatology" as an elective Amend course number of GEO 4167C "Spatial Data Analysis" to GIS 4115C "Spatial Data Analysis"</p> <p>The amendments listed above will enhance the BS Geosciences Geography Concentration, by adding newly created environmental science classes to the program.</p>			
<p><small>*All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.</small></p>			
Faculty Contact/Email/Phone James Gammack-Clark, jgammack@fau.edu, 561-297-0314		Consult and list departments that may be affected by the change(s) and attach documentation	
Approved by		Date	
Department Chair <u>[Signature]</u>		<u>1/31/24</u>	
College Curriculum Chair <u>[Signature]</u>		<u>2/15/24</u>	
College Dean <u>[Signature]</u>		<u>2/16/24</u>	
UUPC Chair <u>Korey Sorge</u>		<u>2/26/24</u>	
Undergraduate Studies Dean <u>Dan Meeroff</u>		<u>2/26/24</u>	
UFS President _____		_____	
Provost _____		_____	

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NEW/CHANGE PROGRAM REQUEST
Undergraduate Programs

**FLORIDA
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Department GEOSCIENCES
College SCIENCE

UUPC Approval 2/26/24
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Program Name
BS Geosciences Geology Concentration

New Program*
 Change Program*

Effective Date
(TERM & YEAR)
FALL 2024

Please explain the requested change(s) and offer rationale below or on an attachment.

Add EVR 4322 "Intro to Coastal Freshwater Resources" as an elective
Add PHY 2048L "General Physics I Lab" as a requirement
Remove GLY 4200C "Mineralogy & Crystal Chemistry" as an elective
Remove PHY 2044 "Physics for Engineers 2" as a requirement
Amend language "General Physics 2 OR" to "General Physics 2"
Remove GLY4830 "Engineering Geology" as an elective
Amend course number of GLY 3155C "Geology of Florida" to GLY 4155C and increase its credit hours to 4
Amend course name of GLY 4832C from "Intro to Hydrogeology Modeling & Aquifer Testing" to GLY 4832C "Groundwater Numerical Modelling"
Amend course name of GLY 4310C from "Petrology of Igneous & Metamorphic Rocks" to GLY 4310C "Mineralogy & Petrology" and revise its course description
Amend language pertaining to BS Geology Electives from "Select 9 credits from the list below, 6 of which must be at the 4000 level" to "Select four courses from the list below, only one of which may have a GIS prefix"
Remove GEO 4280C "Water Resources" as an elective

The amendments listed above will greatly enhance the BS Geosciences Geology Concentration. Greater flexibility will be offered to students by reducing the number of required courses by one while simultaneously increasing the number of elective courses by one. Further choice will be afforded to students by adding a newly created environmental science class to the program. Limiting the number of GIS classes to one course will redirect Geology students to Geology classes.

**All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.*

Faculty Contact/Email/Phone
James Gammack-Clark, jgammack@fau.edu, 561-297-0314

Consult and list departments that may be affected by the change(s) and attach documentation
FAU Department of Physics

Approved by

Department Chair [Signature]
College Curriculum Chair [Signature]
College Dean [Signature]
UUPC Chair Korey Sorge
Undergraduate Studies Dean Dan Meeroff
UFS President _____
Provost _____

Date

2/14/24
2/15/24
2/16/24
2/26/24
2/26/24

Email this form and attachments to mjennings@fau.edu seven business days before the UUPC meeting.

GEOSCIENCES

BACHELOR OF SCIENCE (B.S.)

Climate Change Concentration

Geography Concentration

Geology Concentration

(Minimum of 120 credits required)

The Geosciences core courses below (11 credits) are required of all students for the B.S. in Geosciences. Students then choose one of three concentrations: Climate Change, Geography or Geology.

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 [Transition Guides](#).

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.

Geosciences Core Courses (required of all students)

Introductory Statistics	STA 2023	3
General Chemistry 1 and Lab	CHM 2045, 2045L	4
Introduction to Mapping and GIS	GIS 3015C	3

Geosciences Honors Colloquium	GEO 4920	1
Core Total		11

Climate Change Concentration

In addition to the Geosciences core courses noted above (11 credits), students selecting the Climate Change Concentration are required to complete a Science core (9-11 credits), the Climate Change Concentration core (30 credits), and Geosciences and Interdisciplinary electives (21 credits) as noted below. Total credits for the B.S. in Geosciences with a Climate Change Concentration are 71-73 credits.

Science Core Courses

Biological Principles and Lab	BSC 1010/1010L	4 or
Biodiversity and Lab	BSC 1011/1011L	4 or
Life Science and Life Science Lab or RI: Life Science Lab	BSC 1005/1005L	3
The Blue Planet	ESC 2000	3 or
Introduction to Physical Geography	GEO 2200C	3 or
Physical Geology / Evolution of the Earth	GLY 2010C	4
Methods of Calculus	MAC 2233	3
Science Core Total		9-11

Climate Change Concentration Core Courses

Climate Change Biology: Ecosystems to Human Health	BSC 4307	3
Environmental Issues in Atmospheric and Earth Science	ESC 3704	3
Climate Change: The Human Dimensions	EVR 1110	3
Climate Change: Myths, Realities and Solutions	EVR 3114	3
Hazards, Climate and People	EVR 4112	3
Sea-Level Rise: Impacts and Responses	GEO 3342	3

Quantitative Methods	GEO 4022	3
Remote Sensing of the Environment	GIS 4035C	3
Principles of Geographic Information Systems	GIS 4043C	3
Weather, Climate and Climate Change	MET 2010	3
Atmospheric Hazards	MET 3052	3
Tropical Climatology	MET 3112	3
Core Total		30

Geosciences and Interdisciplinary Electives

Choose 21 credits from the courses below.

Conservation Biology	BSC 3052	3
Climate Change Biology: Ecosystems to Human Health	BSC 4307	3
Microeconomic Principles	ECO 2023	3 or
Economic Principles and Policies	ECO 3003	3
Environmental Economics	ECP 4302	3
Environmental Science and Engineering	ENV 3001C	3
RI: Human-Environmental Interactions in South Florida	GEA 4275	3
Sea-Level Rise: Impacts and Responses	GEO 3342	3
Spatial Data Analysis	GIS 4115C GEO 4167C	3
Water Resources	GEO 4280C	3
Biogeography	GEO 4300	3
Directed Independent Research in Geosciences	GEO 4915	1-6
Mobile GIS and Drone Technology	GIS 4140C	3
Coastal and Marine Science	GLY 3730	3
Environmental Geochemistry	GLY 4241	3
Hydrogeology	GLY 4822	3
Directed Independent Study	GLY 4905	1-3

Comparative Environmental Politics	INR 4054	3
Global Environmental Politics and Policies	INR 4350	3
Climate Data Applications	MET 4142	3
Disaster and Emergency Management	PAD 4393	3
Principles of Ecology	PCB 4043	3
Sociology of Climate and Disaster	SYP 4464	3
RI: Sustainable Cities	URP 4403	3
Environmental Planning Methods	URP 4420	3
Planning for Hazards/Disasters	URP 4430	3
Geosciences and Interdisciplinary Electives Total		21

Geography Concentration

In addition to the Geosciences core courses noted above, students selecting the Geography Concentration are required to complete a Science core (7 credits), the Geography Concentration core (24 credits), and Geosciences electives (30-31 credits) as noted below. Total credits for the B.S. in Geosciences with a Geography Concentration are 72-73 credits.

Science Core Courses

Biological Principles and Lab	BSC 1010/1010L	4 or
Biodiversity and Lab	BSC 1011/1011L	4
Methods of Calculus	MAC 2233	3
Science Core Total		7

Geography Concentration Core Courses

World Geography	GEA 2000	3
Introduction to Physical Geography	GEO 2200C	3
Weather, Climate and Climate Change	MET 2010	3

Quantitative Methods	GEO 4022	3
Principles of GIS	GIS 4043C	3
Remote Sensing of the Environment	GIS 4035C	3
RI: Human-Environmental Interactions in South Florida	GEA 4275	3
Biogeography	GEO 4300	3
Core Total		24

Geosciences Electives

Choose 30-31 credits from the courses below.

The Blue Planet	ESC 2000	3
Intro to Coastal Freshwater Resources	EVR 4322	3
Physical Geology/Evolution of the Earth	GLY 2010C	4
History of the Earth and Life	GLY 2100	3
Climate Change: Myths, Realities and Solutions	EVR 3114	3
Environmental Issues in Atmospheric and Earth Science	ESC 3704	3
Coastal and Marine Science	GLY 3730	3
Applications in GIS	GIS 4048C	3
Photogrammetry and Aerial Photograph Interpretation	GIS 4021C	3
Digital Image Analysis	GIS 4037C	3
Web GIS	GIS 4054C	3
Programming in GIS	GIS 4102C	3
Hazards, Climate and People	EVR 4112	3
Geospatial Databases	GIS 4118	3
Geovisualization and GIS	GIS 4138C	3
Mobile GIS and Drone Technology	GIS 4140C	3
Spatial Data Analysis	GIS 4115C GEO 4167C	3
Water Resources	GEO 4280C	3

Tourism and Commercial Recreation	GEO 4542	3
Urban Geography	GEO 4602	3
Transportation and Spatial Organization	GEO 4700	3
Geomorphology	GLY 4700C	3
Hydrogeology	GLY 4822	3
Atmospheric Hazards	MET 3052	3
Tropical Climatology	MET 3112	3
Climate Data Applications	MET 4142	3
Geosciences Electives Total		30-31

Geology Concentration

In addition to the Geosciences core courses noted above (11 credits), students selecting the Geology Concentration are required to complete a Science core (15-16 credits), the Geology Concentration core (38 credits), and Geosciences electives (9 credits) as noted below. Total credits for the B.S. in Geosciences with a Geology Concentration are 73-74 credits.

Science Core Courses

General Physics 1	PHY 2048	4
General Physics 1 Lab	PHY 2048L	1
General Physics 2	PHY 2049	4 or
Physics for Engineers 2	PHY 2044	3
Calculus with Analytic Geometry 1	MAC 2311	4
Calculus with Analytic Geometry 2	MAC 2312	4
Science Core Total		15-16/17

Geology Concentration Core Course

Physical Geology/Evolution of the Earth	GLY 2010C	4
History of the Earth and Life	GLY 2100	3

Mineralogy and Crystal Chemistry	GLY 4200C	4
Mineralogy and Petrology of Igneous and Metamorphic Rocks	GLY 4310C	4
Structural Geology	GLY 4400C	4
Solid Earth Geophysics	GLY 4451	3
Stratigraphy and Sedimentation	GLY 4500C	4
Geology Field Methods	GLY 4750C	3
Field Camp	GLY 4790	6
Hydrogeology	GLY 4822	3
Core Total		3834

Geosciences Electives

Choose 9 credits four courses from the list below, 6 of which must be at the 4000 level only one of which may have a GIS prefix.

Intro to Coastal Freshwater Resources	EVR 4322	3
Geology of Florida	GLY 34 155C	3 4
Paleontology	GLY 3603C	3
Coastal and Marine Science	GLY 3730	3
Remote Sensing of the Environment	GIS 4035C	3
Principles of GIS	GIS 4043C	3
Environmental Geochemistry	GLY 4241	3
Water Resources	GEO 4280C	3
Geomorphology	GLY 4700C	3
Engineering Geology	GLY 4830	3
Introduction to Hydrogeology Modeling and Aquifer Testing	GLY 4832C	3
Groundwater Numerical Modeling		
Geosciences Electives Total		912-13