

 FLORIDA ATLANTIC UNIVERSITY	NEW/CHANGE PROGRAM REQUEST Undergraduate Programs	UUPC Approval <u>3-29-21</u> UFS Approval _____ Banner Posted _____ Catalog _____
	Department Geosciences College Charles E. Schmidt College of Science	
Program Name Bachelor of Science with Major in Geosciences: Add a Climate Change Focus	<input type="checkbox"/> New Program <input checked="" type="checkbox"/> Change Program	Effective Date (TERM & YEAR) Fall 2021
Please explain the requested change(s) and offer rationale below or on an attachment <p>The climate on earth has changed throughout history. The Intergovernmental Panel on Climate Change found that there is unequivocal scientific evidence for unprecedented warming of the climate system over decades to millennia, as a result of human activity since the mid-20th century. Geoscience is at the forefront in examining the science of climate change, its impacts on society, and policy implications. It is about time to recognize these scientific pursuit and academic training as a separate focus area within the existing BS Geosciences program at FAU. Once approved, it will provide a unique niche and exciting opportunities for the next generation scientists to be trained, to explore and take actions in tackling this pressing and prominent issues facing human society. Please see the proposed catalog copy for curriculum details.</p>		
Faculty Contact/Email/Phone James Gammack-Clark /gammack@fau.edu	Consult and list departments that may be affected by the change(s) and attach documentation N/A	
Approved by Department Chair _____ <i>JRC zko</i> College Curriculum Chair _____ <i>Jerry Haky</i> College Dean _____ <i>ERJ</i> UUPC Chair _____ <i>Jerry Haky</i> Undergraduate Studies Dean _____ <i>Edward Pratt</i> UFS President _____ Provost _____	Date _____ <i>02/12/2021</i> _____ <i>3-18-21</i> _____ <i>3/24/2021</i> _____ <i>3-29-21</i> _____ <i>3-29-21</i> _____ _____	

Email this form and attachments to mjennning@fau.edu one week before the UUPC meeting so that materials may be viewed on the UUPC website prior to the meeting.

Bachelor of Science with Major in Geosciences

(Minimum of 120 credits required)

The Geosciences core course below (11 credits) are required of all students for the B.S. in Geosciences. Students then **choose one of the three focuses: 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

Bachelor of Science with Major in Geosciences: Climate Change Focus

In addition to the Geosciences core courses noted above (11 credits), students selecting the Climate Change Focus are required to complete a Science core (9-11 credits), the Climate Change Focus core (27 credits), and Geosciences and Interdisciplinary Electives (24 credits) as noted below. Total credits for the B.S. in Geosciences with a Geography Focus 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 RI 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 Focus Core Courses		
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 GIS	GIS 4043C	3

Weather, Climate and Climate Change	MET 2010	3
Core Total		27

Geosciences and Interdisciplinary Electives (select 24 credits from the courses below)		
Human-Environmental Interactions in South Florida	GEA 4275	3
Spatial Data Analysis	GEO 4167C	3
Water Resources	GEO 4280C	3
Biogeography	GEO 4300	3
Mobile GIS & Drone Technology	GIS 4140C	3
DIS/DIR	GEO/GLY 4905/4915	1-3
Coastal and Marine Science	GLY 3730	3
Environmental Geochemistry	GLY 4241	3
Hydrogeology	GLY 4822	3
Microeconomic Principles	ECO 2023	3 or
Economic Principles and Policies	ECO 3003	3
Environmental Economics	ECP 4302	3
Comparative Environmental Politics	INR 4054	3
Global Environmental Politics and Policies	INR 4350	3
Sociology of Climate and Disaster	SYP 4464	3
Environmental Planning Methods	URP 4420	3
Sustainable Cities	URP 4403	3
Planning for Hazards/Disasters	URP 4430	3
Environmental Science and Engineering	ENV 3001C	3
Geosciences and Interdisciplinary Electives Total		24

Bachelor of Science with Major in Geosciences: Geography Focus

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

Human-Environmental Interactions in South Florida	GEA 4275	3
Biogeography	GEO 4300	3
Core Total		24

Geosciences Electives (select 30-31 credits from the courses below)		
The Blue Planet	ESC 2000	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 & Drone Technology	GIS 4140C	3
Spatial Data Analysis	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
Geosciences Electives Total		30-31

Bachelor of Science with Major in Geosciences: Geology Focus

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

Science Core Courses		
General Physics 1	PHY 2048	4
General Physics 2	PHY 2049	4
Calculus with Analytic Geometry 1	MAC 2311	4
Calculus with Analytic Geometry 2	MAC 2312	4
Science Core Total		16

Geology Focus 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
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
Field Methods	GLY 4750C	3
Field Camp	GLY 4790	6
Hydrogeology	GLY 4822	3
Core Total		38

Geosciences Electives (select 9 credits from the list below, 6 of which must be at the 4000 level)		
Geology of Florida	GLY 3155C	3
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
Geosciences Electives Total		9