



Item: AS: A-2

## COMMITTEE ON ACADEMIC AND STUDENT AFFAIRS

Tuesday, February 20, 2018

**SUBJECT: REQUEST FOR APPROVAL OF NEW ACADEMIC PROGRAM – BACHELOR OF SCIENCE IN GEOSCIENCE**

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### PROPOSED BOARD ACTION

Request for approval to add a new Bachelor of Science in Geoscience (40.0699).

### BACKGROUND INFORMATION

The Department of Geosciences currently houses bachelors programs in geography & geology, and masters and doctoral programs in geosciences. Feedback from CAVP and an external review team led the department to combine the Bachelors in Geography and the Bachelors in Geology into one single degree program that will be consistent with the changes made at the graduate level.

### IMPLEMENTATION PLAN/DATE

The new degree program will be effective Fall 2018.

### FISCAL IMPLICATIONS

The new degree program will not require changes in curriculum, any additional faculty, or financial resources.

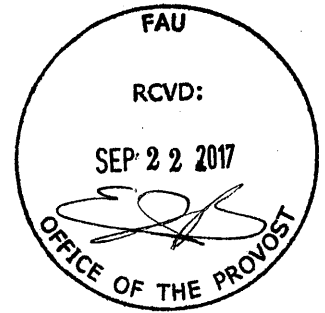
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**Supporting Documentation:** Program CIP Change Form

**Presented by:** Dr. Russell Ivy, Associate Provost for Programs and Assessment

**Phone:** 561-297-2353

**PROGRAM CIP CHANGE REQUEST FORM**  
Board of Governors, State University System of Florida



**UNIVERSITY:** Florida Atlantic University

**PROGRAM NAME:** Geology

**DEGREE LEVEL(S):** B.A.

**OLD/CURRENT CIP CODE:** 40.0601

**NEW/REQUESTED CIP CODE :** 40.0699

**NEW CIP CODE EFFECTIVE TERM:** Fall 2018

(First term for students in the program using the new CIP code)

*Please use this form to notify the Board of Governors, State University System of Florida that an institution intends to change the CIP code for an already existing degree program and begin reporting enrollments and degrees data under the new CIP code. This action will allow for more accurate data analysis of enrollment and degree productivity as well as it will initiate any necessary changes to the articulation manuals and online search tools.*

**1. Provide a short background and rationale for the CIP change request.**

The Department of Geosciences currently houses undergraduate B.A. and B.S. programs in both geography and geology, and graduate programs (M.S., Ph.D.) in geosciences, which combine subfields of geography and geology into an applied teaching and research focus. A recent external program review recommends "developing hybrid BA and BS Geoscience degrees that focus on the mission statement of the department". The development of such baccalaureate geosciences degrees will complete the process of fusing traditional geography and geology at all degree levels in the department. **As an initial step in this process, the Department is requesting that the CIP for the B.A. in Geology be changed to the CIP of geosciences, currently used by both M.S. and Ph.D. in Geosciences.** This will be followed by a termination of the current B.A. Geography (with teachout plan), a name change of the B.A. Geology to B.A. in Geosciences, along with a curriculum revision – basically a roll up of the B.A. in Geography and B.A. in Geology to the B.A. in Geosciences.

**2. Explain the impact of the proposed change on the current faculty and current and future students.**

There will be no impact on the current faculty as most of the coursework offered in the department will be the same. The degree requirement will simply be repackaged where students will be able to get a B.A. in Geosciences with either a more geology focus or a

more geography focus. Current students in the geography and geology bachelors programs will be taken care of with a teach out plan as the final changes discussed in #1 are rolled out. As identified in our external program review of Spring 2015, we feel that the future students will be better prepared for the evolving geosciences/environmental job market and, for those who have the interest, certainly better prepared as potential candidates for our graduate programs.

**3. Provide evidence that considerations have been given to the impact of this CIP change on existing programs at the university, and the possibility that the program using the new CIP will duplicate already existing programs at other SUS institutions.**

As the requested CIP change only impacts the programs housed in the Department of Geosciences, we see no negative impact on any other program or department at FAU, a positive change (when the entire plan in #1 is rolled out) will be to make the baccalaureate programs in the Department of Geosciences more productive and sustainable by combining students with an interest in geography with the students interested in geology into a single rolled up degree program (B.A. in Geosciences). As far as within the SUS, we see no impacts. FAU is the only university in the SUS that offers a combined geography/geology teaching and research focus in a degree program.

**4. If applicable, please explain how the CIP change will impact the program's listing in a Programs of Strategic Emphasis (PSE) category. Please provide a rationale to support the need for the program to be included in a PSE category, if it is not already included in a PSE category.**

Both the current CIP for our B.A. in Geology and the proposed CIP for the reworked B.A. program are in Programs of Strategic Emphasis.

**5. For baccalaureate programs please identify any related changes to the approved common prerequisites and degree program length.**

The degree program length remains the same, 120 Cr. Hrs.

There are no approved common prerequisite for the B.A. Geology at FAU with the CIP code of (40.0601).

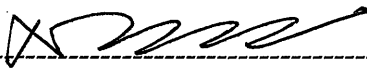
There are also no approved common prerequisites for the proposed B.A. Geosciences with CIP code of 40.0699, the curriculum associated with this request could be the basis to define the common prerequisites in the future if needed.

**6. If this is a baccalaureate program, please list the common prerequisites for the current CIP code as listed in the program's curriculum and the common prerequisites associated with the new CIP code.**

There are no approved common prerequisites for the current CIP code (40.0601) for the B.A. Geology at FAU. There are no approved common prerequisites for the proposed B.A. Geosciences with CIP code of 40.0699. The curriculum associated with this request

could be the basis to define the common prerequisites in the future if needed.

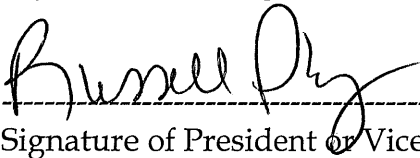
CIP Change Request Form - Signatures Page

  
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Signature of Requestor/Initiator

08/21/2017  
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Date

  
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Signature of College Dean/Chair

9/21/17  
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Date

  
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Signature of President or Vice President for  
Academic Affairs

9/29/17  
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Date



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**TO: University Undergraduate Program Committee**

**FROM: Zhixiao Xie, Chair, Geosciences Department**

**RE: Change B.A./B.S. Geography and Geology into B.A./B.S. in Geosciences Degrees**

The Geography and Geology programs are housed in the Geosciences Department, and we are in the process of merging the two programs into a Geosciences program, as many other similar departments have done. We have already completed the merge at graduate program level after establishing a Ph.D. in Geosciences in 2009, and merging our M.A. in Geography and M.S. in Geology into M.S. Geosciences in 2015. As the final phase, the Department is merging four undergraduate degrees, the B.A./B.S. in Geography and the B.A./B.S. in Geology into two degree programs, B.A./B.S. in Geosciences. The procedure is similar to that requested by BOG for merging our Masters programs: instead of writing a new degree from scratch, BOG request that we change the CIP code and write a new catalog description. Nothing is changed in terms of delivering the programs, all existing courses will continue to be delivered. Students in the current degree programs may choose to switch to the new programs.

For those students that remain in the old degree programs, nothing has changed in terms of course delivery, they should be able to finish the B.A./B.S. in Geology or B.A./B.S. in Geography on the same schedule that they are following at this time.

The CIP code for B.A./B.S. in Geology is being changed to the CIP code of Geosciences. The B.A./B.S. in Geography will be terminated through a program change request as soon as the last student has graduated or switched to the new B.A./B.S. in Geosciences degrees.

Approved by	Date
Department Chair _____ <i>[Signature]</i>	Aug 21, 2017
College Curriculum Chair _____ <i>J. E. King</i>	10/16/17
College Dean _____ <i>[Signature]</i>	10/11/17
UUPC Chair _____ <i>J. E. King</i>	10/16/17
Undergraduate Studies Dean _____ <i>[Signature]</i>	10/17/17
UFS President _____	
Provost _____	



## Bachelor of Arts with Major in Geosciences

(Minimum of 120 credits required)

The Geoscience core courses below (10 credits) are required of all students for the B.A. in Geosciences. Students then choose between a focus in either 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 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.

Geoscience Core Courses (all required)		
Geosciences Colloquium	GEO 4920	1
Introduction to Mapping and GIS	GIS 3015C	3
Introductory Statistics	STA 2023	3
Weather and Climate	MET 2010	3
<b>Geoscience Core Total</b>		<b>10</b>

### Bachelor of Arts with Major in Geosciences: Geography Focus

In addition to the Geoscience core courses for B.A. in Geosciences, students with a Geography focus are required to complete the Geography focus core (12 credits). Students then take a minimum of 6 credits from each of the three areas of emphasis (environmental systems, human systems and GIScience 18-19 credits). Another 15 elective credits should be chosen from these areas too. Total credits for the B.A. in Geosciences with a Geography focus are 55-56.

Geography Focus Core Courses		
World Geography	GEA 2000	3
Introduction to Physical Geography	GEO 2200C	3
Quantitative Methods	GEO 4022	3
Human-Environmental Interactions in South Florida	GEA 4275	3
<b>Geography Focus Core Total</b>		<b>12</b>
<b>Areas of Emphasis (select 33-34 credits, minimum 6 credits from each of the three areas below)</b>		
<b>Environmental Systems</b>		
The Blue Planet	ESC 2000	3
Physical Geology/Evolution of the Earth	GLY 2010C	4
History of the Earth and Life	GLY 2100	3
Environmental Issues in Atmospheric and Earth Science	ESC 3704	3
Coastal and Marine Science	GLY 3730	3
Water Resources	GEO 4280C	3



Biogeography	GEO 4300	3
Geomorphology	GLY 4700C	3
Hydrogeology	GLY 4822	3
<b>Human Systems</b>		
Geography of Latin America and the Caribbean	GEA 4405	3
American Cultural Landscape	GEO 4422	3
Tourism and Commercial Recreation	GEO 4542	3
Urban Geography	GEO 4602	3
Transportation and Spatial Organization	GEO 4700	3
<b>GIScience</b>		
Photogrammetry and Aerial Photograph Interpretation	GIS 4021C	3
Remote Sensing of the Environment	GIS 4035C	3
Digital Image Analysis	GIS 4037C	3
Principles of GIS	GIS 4043C	3
Applications in GIS	GIS 4048C	3
Programming in GIS	GIS 4102C	3
Geovisualization and GIS	GIS 4138C	3
Spatial Data Analysis	GEO 4167C	3
Introduction to Hydrogeology Modeling and Aquifer Test	GLY 4832C	3
<b>Areas of Emphasis Total</b>		<b>33-34</b>

#### Bachelor of Arts with Major in Geosciences: Geology Focus

In addition to the Geoscience core courses for B.A. in Geosciences, students with a Geology focus are required to complete a science core (19 credits), Geology focus core (10 credits), and Geoscience electives (18-22 credits). Total credits for the B.A. in Geosciences with a Geology focus are 57-71.

<b>Science Core Courses</b>		
Biodiversity and Lab	BSC 1011/1011L	or
Biological Principles and Lab	BSC 1010/1010L	4
College Algebra	MAC 1105	3
Introduction to Astronomy	AST 2002	3
General Chemistry 1 and Lab	CHM 2045/2045L	4
General or College Physics and Lab	PHY 2048 or PHY 2053 & 2048L	5
<b>Science Core Total</b>		<b>19</b>
<b>Geology Focus Core Courses</b>		
Physical Geology/Evolution of the Earth	GLY 2010C	4

History of the Earth and Life	GLY 2100	3
Field Methods	GLY 4750C	3
<b>Geology Focus Core Total</b>		<b>10</b>
<b>Geoscience Electives (Selective six courses chosen from the list below):</b>		
Solar System Astronomy	AST 3110	3
Paleontology	GLY 3603C	3
Environmental Issues in Atmospheric and Earth Science	ESC 3704	3
Coastal and Marine Science	GLY 3730	3
Mineralogy and Crystal Chemistry	GLY 4200C	4
<b>Environmental Geochemistry</b>	GLY 4241	<b>3</b>
<b>Water Resources</b>	GEO 4280	<b>3</b>
Petrology of Igneous and Metamorphic Rocks	GLY 4310C	4
Structural Geology	GLY 4400C	4
Stratigraphy and Sedimentation	GLY 4500C	4
Geomorphology	GLY 4700C	3
Hydrogeology	GLY 4822	3
<b>Geoscience Elective Total</b>		<b>18-22</b>

## Bachelor of Sciences with Major in Geosciences

(Minimum of 120 credits required)

The Geoscience core courses below (15 credits) are required of all students for the B.S. in Geosciences. Students then choose between a focus in either 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 *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.

<b>Geoscience Core Courses (all required)</b>		
Geosciences Colloquium	GEO 4920	1
Introduction to Mapping and GIS	GIS 3015C	3
Introductory Statistics	STA 2023	3
Calculus with Analytic Geometry 1	MAC 2311	4
General Chemistry 1 and Lab	CHM 2045, 2045L	4
<b>Geoscience Core Total</b>		<b>15</b>

### Bachelor of Sciences with Major in Geosciences: Geography Focus

In addition to the Geoscience core courses for B.S. in Geosciences, students with a Geography focus are required to complete a science core (4 credits), Geography focus core (24 credits), and geoscience elective (30-31 credits). Total credits for the B.S. in Geosciences with a Geography focus are 73-74.

<b>Science Core Courses (all required)</b>		
Biodiversity and Lab	BSC 1011/1011L	Or
Biological Principles and Lab	BSC 1010/1010L	4
<b>Science Core Total</b>		<b>4</b>
<b>Geography Focus Core Courses (all required)</b>		
World Geography	GEA 2000	3
Introduction to Physical Geography	GEO 2200C	3
Weather and Climate	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
<b>Geography Focus Core Total</b>		<b>24</b>
<b>Geoscience Electives (select 30-31 credits from the courses below)</b>		
The Blue Planet	ESC 2000	3
Physical Geology/Evolution of the Earth	GLY 2010C	4
History of the Earth and Life	GLY 2100	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
Programming in GIS	GIS 4102C	3
Geovisualization and GIS	GIS 4138C	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
Introduction to Hydrogeology Modeling and Aquifer Test	GLY 4832C	3
<b>Geoscience Electives Total</b>		<b>30-31</b>

### Bachelor of Sciences with Major in Geosciences: Geology Focus

In addition to the Geoscience core courses for B.S. in Geosciences, students with a Geology focus are required to complete a science core (10 credits), Geology focus core (38 credits), and geoscience elective (9 credits). Total credits for the B.S. in Geosciences with a Geology focus are 72.

<b>Science Core Courses</b>		
Physics for Engineers 1	PHY 2043	3
Physics for Engineers 2	PHY 2044	3
Calculus with Analytic Geometry 2	MAC 2312	4
<b>Science Core Total</b>		<b>10</b>
<b>Geology Focus Core Courses</b>		
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/Sedimentation	GLY 4500C	4
Field Methods	GLY 4750C	3
Field Camp	GLY 4790	6
Hydrogeology	GLY 4822	3
<b>Geology Core Total</b>		<b>38</b>
<b>Geoscience Electives (Choose 9 credits from below, 6 of which must be at the 4000 level)</b>		
Geology of Florida	GLY 3155C	3
Paleontology	GLY 3603C	3
Coastal and Marine Science	GLY 3730	3
Remote Sensing of the Environment	GLY 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
<b>Geoscience Electives Total</b>		<b>9</b>