DO NOT TYPE IN THIS BOX
Bulletin # : _____
Academic Year : _____

FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
Proposal for a New Course

1. **School/College** Arts, Sciences, and Education

   Div./Dept. in Which Taught Department of Biological Sciences

2. BSC (Alpha Prefix) | 1 (1st Digit) | (Last 3 Digits) | ("C"-lec-lab "L"-Lab) | 3 (Cr. Hrs.) — **CIP Code** *(Leave this blank):* _____

3. **Grading Method (select one):** ☒ Graded ☐ Pass/Fail

4a. **Course Title** Essentials of Biology: local and global perspectives

b. **Abbreviated course Title** *(for computer class schedules, transcripts)* Essentials of Biology

LIMITED TO 25 Characters *(including spaces)*

5. **Statewide Course Numbering Subject Matter Area** _____

6. **Catalog Description/Major Topics** *(not to exceed 200 characters including spaces)*

   College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

   Current biological topics will be explored through reading primary scientific literature, ensuring that students recognize real life applications and global repercussions of biological research.

7. **Attach detailed syllabus course outline and course justification on separate page(s).**
8. **Prerequisite(s):** none
9. **Corequisite(s):** none
10. **Objective(s) of Course:**

    1. Find, read, evaluate, and understand primary scientific literature; 2.Scientifically evaluate situations in which biology plays a role; 3.Use scientific theories to design biological experiments

11. **Does this course duplicate/overlap other courses at FIU?** ☒ No ☐ Yes

    If yes, please explain: _____

12. **What other closely related department(s) have been consulted about this course?**

    _____

13. **Is this course used for the assessment of a program or a certificate (if yes, then send a notification to assessment@fiu.edu)?** **No** **Yes**

PROPOSAL REQUESTED BY:

Faculty Contact Melissa McCartney (Type name) — (Signature) — 1 / 15 / 20 19

mmccartn@fiu.edu (Email address) — 305-348-7165 (Phone number)

Chairperson (Dept./Div.) Steve Oberbauer (Type name) — (Signature) — 1 / 15 / 20 19

Chairperson (Curr. Comm.) _____ (Type name) — (Signature) — ____ / ____ / 20____

College/School Dean _____ (Type name) — (Signature) — ____ / ____ / 20____

Submit one original form. Attach one copy of the course justification and course syllabus, course description, objectives, major topics and textbooks.

Dr. Melissa McCartney
Department of Biological Sciences
mmccartn@fiu.edu

New Course Justification

BSC 1 XXX
Essentials of Biology: local and global perspectives

Biological research impacts life across the globe, whether it be in the form of environmental research, research on disease, research on food sustainability, or research on animal migration. None of this research takes place in a vacuum, as biological phenomenon in one corner of the globe ultimately influences a biological phenomenon elsewhere. Additionally, understanding how to read and evaluate primary scientific literature is equivalent to understanding the global language of scientists.

BSC 1005 is a 3-credit course intended to introduce students to the big ideas of Biology through reading primary scientific literature. Students will approach Biology in a fundamentally different way by connecting biological ideas across multiple disciplines, scales, and historical events, all while highlighting the relationship between biology and a global society.

This class will center on five themes (food, waste, conflict, senses, and information) and how these themes are mediated by the major core concepts of Biology (evolution, structure and function, information flow, transformation of energy and matter, and systems). Additionally, students will explore current and future applications of biological research within the larger context of critical thinking, analysis, and experimental design. There will be a strong emphasis on learning to find, read, evaluate, and understand primary scientific literature.

This course was designed in parallel to BSC 1005, Essentials of Biology, with the main difference being that this newly proposed course will have a Global Learning designation associated with it.

Essentials of Biology
BSC-1005-U01
Florida International University
Dept. of Biological Sciences
(FALL 2019)

Instructor: Dr. Melissa McCartney
Email: mmccartn@fiu.edu
Office: OE 230
Office Hours: Monday, 10AM to 11:30AM
Wednesday, 10AM to 11AM
***If you can't make it to these hours please make an appointment via email*

Course Description: BSC 1005 is a 3-credit course intended to introduce you to the big ideas of Biology through reading primary scientific literature. You will approach Biology in a fundamentally different way by connecting biological ideas across multiple disciplines, scales, and historical events, all while highlighting the relationship between biology and a global society.

This class will center on five themes (food, waste, conflict, senses, and information) and how these themes are mediated by the major core concepts of Biology (evolution, structure and function, information flow, transformation of energy and matter, and systems). Additionally, you will explore current and future applications of biological research within the larger context of critical thinking, analysis, and experimental design. **There will be a strong emphasis on learning to find, read, evaluate, and understand primary scientific literature.**

Biological research impacts life across the globe, whether it be in the form of environmental research, research on disease, research on food sustainability, or research on animal migration. None of this research takes place in a vacuum, as biological phenomenon in one corner of the globe ultimately influences a biological phenomenon elsewhere. Additionally, understanding how to read and evaluate primary scientific literature is equivalent to understanding the global language of scientists.

This is a Global Learning Foundations Course that counts toward the GL graduation requirement, therefore it will enhance your Global Awareness, Perspective, and Engagement, so that you will have knowledge that scientific discoveries arise globally, affect human affairs globally, and should be shared globally. This will be achieved through (1) accentuating the multi-dimensional value of significant discoveries in Biology, and (2) evaluating the significance of biological issues to human affairs historically and geographically. For example, you will be asked to evaluate what was the socio-economic characteristic of the societies in which the discoveries happened; if these discoveries can be directly translated to other geographic regions (why or why not); are there any contemporary significant achievements either in another scientific discipline or in art, literature, filmmaking, etc.

3. **Global Engagement.** Students will demonstrate a willingness to remain current in an aspect of biological research that impacts their daily life.

   The assessment for Global Engagement will be in the form of (1) writing a short paper on selected biological topic with a global perspective and (2) giving an oral presentation on a selected biological topic with a global perspective.

FIU's Excellence in Global Learning Graduation Medallion is awarded to students who complete at least four global learning courses, participate in a variety of global co-curricular activities, and complete a capstone consisting of one of the following: a substantial original research project and presentation on a global topic; extensive foreign language study; long-term study abroad; or, a globally-focused internship. The Peace Corps Prep certification is conferred upon students who complete at least four global learning courses, extensive language study, and a global problem-solving project. For more information, visit goglobal.fiu.edu.

Course Requirements:

Prerequisites. None.

Required Text. None.

i-clicker. You will be required to have an i-clicker. You can either buy it or rent it from the FIU Bookstore. After obtaining the i-clicker you will need to register your device http://www1.iclicker.com/register-clicker/ by using your Panther ID #.

Participation and Attendance: This will be an interactive class consisting of active learning. For each class you attend you will receive 5 points. Attendance will be taken through participation in clicker questions, group work, and exit slips. You are expected to attend class regularly and come to class on time. If you must be late, please enter the room in a way that does not disturb the lecture.

Homework: You will have 20 homework assignments throughout the semester. These will be short assignments focused on learning how to find, read, evaluate, and understand primary scientific literature.

Group Project: You will have one group project that will replicate a grant review panel. Groups will present current research on a topic of their choice and present their ideas for future experiments. Groups not presenting will be tasked with evaluating the proposed experiments and determining if they deserve funding.

Exams: You will have three in class exams that will be report-based. You will be allowed to use the internet to answer the questions but you must provide primary literature citations. If you do not attend class on exam days you will receive a zero and will not be allowed to finish at home.

Final: There will be a final report due at the end of the semester on advancing global biological research on a topic students have chosen.

Course Calendar for Fall 2019

Week	Date	Biology goals	Primary lit goals	Blooms level	GL goals	Group project
1	8-26	Thinking science	What is primary literature?	Knowledge	What is GL?	Choose a topic
	8-28					
2	9-4				How/why does GL apply to biology?	
3	9-9	Thinking biology	How do you read it?	Comprehension		
	9-11					
4	9-16					
	9-18	EXAM 1				
5	9-23	Nat. History of Food	How do you find primary literature?	Application	Global Awareness	Collect sources
	9-25					
6	9-30					
	10-2	Nat. history of waste				
7	10-7					
	10-9					
FALL BREAK	10-14					
	10-16					
8	10-21	Nat. history of conflict	How do you cite primary literature?	Application	Global Perspective	What would you do next?
	10-23					
9	10-28					
	10-30	EXAM 2				
10	11-4	Nat. history of senses	How do you develop a review of several primary literature articles?	Analysis	Global Engagement	Preparing for a grant panel
	11-6					
11	11-13					
12	11-18	Nat. history of information		Synthesis		
	11-20					
13	11-25			Evaluation		
	11-27	EXAM 3				
14	12-2	Group presentations				
	12-4					
		FINAL EXAM TBA				

to silent mode so that they cannot be heard. Additionally, if you must take a call or text, please quietly leave the classroom to complete the discussion. Please, do not engage in texting inside the classroom.

Assessments/Exams: It is your responsibility to make sure your computer meets the minimum hardware requirements.

Assessments in this course are not compatible with mobile devices and should not be taken through a mobile phone or a tablet. If you need further assistance please contact FIU Online Support Services.

Please arrive on time to all exams; we will not let anyone start an exam after the first exam has been turned in. There will be no make-up or replacement exams in this course. If you miss an exam, you may use the grade of your final exam to replace the missed exam grade. Please check the exam schedule within the first week of class for any conflicts with religious observances. If you must or have to miss the final exam, a valid and well-documented excuse must be presented.

Academic grievance: I aim to provide academic instruction in a way that is nondiscriminatory and fair to all students. Nevertheless, if you believe that you have not been dealt with fairly or that the instruction has been inadequate, procedures exist for handling grievances. First, speak with the instructor. I could be unaware that a problem exists and your grievance might help me make the class better for you and your fellow students. Speaking with the instructor is likely to yield a satisfactory explanation, or resolve the problem by making adjustments to accommodate special needs. Second, if the problem is not or cannot be resolved with the instructor, speak with the department head or chairperson. Finally, if the problem still cannot be resolved, speak with the Dean of Students.

FIU Global Learning

Global Learning Course
Assessment Matrix
Faculty Name: Melissa McCartney
Course: BSC 1005 Essentials of Biology
Academic Unit: Undergraduate Education Degree Program: Biological Sciences Semester Assessed:

Global Learning Student Learning Outcome Addressed	**Assessment Method**	**Assessment Results**
Global Awareness: Students will demonstrate knowledge of the interconnectedness of local, global, international, and intercultural issues, trends, and systems. **Course Learning Outcome** Students will be able to describe the interrelationship between biological research and policy developed from the results of this research, locally and around the world.	Assessment Activity/Artifact: 1. Clicker/homework questions These will be related to the primary literature we are reading on a topic. I will ask students to elaborate on class discussions with specific prompts on how each paper relates to global awareness and to provide specific examples. I also like to have students reflect on "what comes next," and here I would ask them to propose ideas on how to increase global awareness/cooperation on the topics in the primary literature we read. Evaluation Process: Rubric for evaluation of assignments will include: (1) Understanding of the scientific concepts that underlies the global nature of biological research; (2) Developing critical thinking based on new global scientific information obtained in class; (3) Understanding the impact of biological discoveries on global human affairs (novel cures, bioterrorism, environmental protection...); (4) Understanding the interrelationship between biological research and social/economic factors; (5) Navigating through time - connecting/associating discoveries in biology with the achievements in Arts and Humanities. Minimum Criteria for Success: 1. 70% on assignment Sample: All students will be assessed	*To be entered after each time course is taught*

Use of Results for Improving Student Learning
To be entered after each time course is taught

FIU Global Learning

Global Learning Course
Assessment Matrix
Faculty Name: Melissa McCartney
Course: BSC 1005 Essentials of Biology
Academic Unit: Undergraduate Education Degree Program: Biological Sciences Semester Assessed:

Global Learning Student Learning Outcome Addressed	**Assessment Method**	**Assessment Results**
Global Engagement: Students will be able to demonstrate willingness to engage in local, global, international, and intercultural problem solving. **Course Learning Outcome** Students will demonstrate a willingness to remain current in an aspect of biological research that impacts their daily life.	Assessment Activity/Artifact: 1. Assignment: Writing a short paper on selected biological topic with a global perspective 2. Assignment: Giving an oral presentation on a selected biological topic with a global perspective Evaluation Process: Rubric for evaluation of assignments will include: (1) to analyze students' own willingness to learn more about a biological topic then what was discussed in class through research and analysis on a topic (2) to present their own plan for advancing global biological research on the topic they have chosen. Minimum Criteria for Success: 1. 70% on assignment Sample: All students will be assessed	*To be entered after each time course is taught*
Use of Results for Improving Student Learning		
To be entered after each time course is taught		

DO NOT TYPE IN THIS BOX
Bulletin # : _____
Academic Year : _____

FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
Proposal for a New Course

1. **School/College** Arts, Sciences, and Education

   Div./Dept. in Which Taught Earth and Environment

2. GIS (Alpha Prefix) | 4 (1st Digit) | (Last 3 Digits) | ("C"-lec-lab "L"-Lab) | 3 (Cr. Hrs.) **CIP Code** *(Leave this blank):* _____

3. **Grading Method (select one):** ☒ Graded ☐ Pass/Fail

4a. **Course Title** Building Geodatabases and Geoprocessing Tools for Earth and Environmental Data

b. **Abbreviated course Title** *(for computer class schedules, transcripts)* Geodatabases and Geotools

LIMITED TO 25 Characters *(including spaces)*

5. **Statewide Course Numbering Subject Matter Area** Geography: Information Science

6. **Catalog Description/Major Topics** *(not to exceed 200 characters including spaces)*

   College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

   An advanced course in the import and design of geospatial data in ArcGIS including the use and creation of geoprocessing tools with the Model Builder and Python scripting. Metadata and documentation.

7. **Attach detailed syllabus course outline and course justification on separate page(s).**

8. **Prerequisite(s):** GIS 2xxx or GIS 3043 or GIS 3048 or CGN 4321 or other introductory course in GIS

9. **Corequisite(s):** _____

10. **Objective(s) of Course:**

    Students completing this course will have a strong understanding of data base and geoprocessing tool use and creation in the ArcGIS suite of software.

11. **Does this course duplicate/overlap other courses at FIU?** ☐ No ☒ Yes

    If yes, please explain: This course is meant to be cross listed with an existing course EVR 5044, Advanced GIS and Environmental Data Analysis so that undergraduate students may take an advanced course in GIS.

12. **What other closely related department(s) have been consulted about this course?**

    Global and Sociocultural Studies

13. **Is this course used for the assessment of a program or a certificate (if yes, then send a notification to assessment@fiu.edu)?** No Yes

PROPOSAL REQUESTED BY:

Faculty Contact Dean Whitman (Type name) [signature] (Signature) 2 / 1 / 20 19

whitmand@fiu.edu (Email address) (305) 348-3089 (Phone number)

Chairperson (Dept./Div.) Beri Price (Type name) Beri Price (Signature) 2 / 13 / 20 19

Chairperson (Curr. Comm.) _____ (Type name) _____ (Signature) ___ / ___ / 20___

College/School Dean _____ (Type name) _____ (Signature) ___ / ___ / 20___

Submit one original form. Attach one copy of the course justification and course syllabus, course description, objectives, major topics and textbooks.

Proposed course GIS 4xxx: Building Geodatabases and Geoprocessing Tools for Earth and Environmental Data

The Department of Earth and Environment has offered for many years an advanced graduate level course in Geographic Information Systems (GIS), *EVR5044, Advanced GIS and Environmental Data Analysis*. In the past, some undergraduate students who have completed an introductory GIS course such as GIS 3043 have expressed interest in taking a more advanced course in the subject. EVR 5044 normally has room for additional students and this proposed course will be cross-listed with EVR 5044 in order to accommodate interested undergraduates.

The proposed course will also count as an elective for the Environmental Studies BS, Geoscience BS, and Sustainability and the Environment BA programs offered by the Department of Earth and Environment. In the future, it may also be added as an Intermediate/Advanced course selection in the new Undergraduate Certificate program in Applied Geographic Information Systems being proposed by the Department of Global and Sociocultural Studies (submitted for Bulletin 3).

GIS 4xxx Building Geodatabases and Geoprocessing tools for Earth and Environmental Data

Location:	GL 274 at Green Library	Time: TTH 2:00-3:15 pm
Instructor:	Dean Whitman	Office: AHC5 396
Email:	whitmand@fiu.edu	Office Hours: TTH 10:30-12:00 am

Course Description:
This course is a continuation of the introductory course on Geographic Information Systems (GIS). GIS is an important tool for organizing, analyzing, and displaying the data related to the environment, land/resource management, and planning activities. The geodatabase and geoprocessing are the foundation for many GIS applications and projects. The course will cover the creation of geospatial databases and geoprocessing methods in GIS for querying, reporting, analyzing, and presenting spatial data. The class includes both lectures on theory and hand-on exercises using Geodatabase, ArcMap, ArcCatalog, ArcToolbox, Model Builder and Python in ESRI's ArcGIS.

Course Objectives
Students completing this course will have a strong functional understanding of the importation, construction, and documentation of geospatial data supported in the ESRI suite of ArcGIS software. Students will also have a functional understanding of the geoprocessing framework supported in the software and will know how to create customized geoprocessing tools using the *model builder* and *Python* scripting.

Learning Outcomes
Students completing this course will be able to perform the following:

1. Describe the elements of and the differences between the various geospatial data models used in the ESRI software.
2. Build and edit feature and vector geodatabases from imported, image, and raw data.
3. List and describe the various tools used in the processing and analysis of GIS data.
4. Find and execute tools in *ArcToolbox* and from the Python command line.
5. Build custom tools using the *Model Builder* canvas and Python scripts.
6. Create metadata and documentation of geospatial data and tools

Prerequisites
An introductory GIS course (GIS 2xxx, *GIS 3043*, *GIS 3048, CGN 4321 or equivalent*) or demonstrated competence with Desktop ArcGIS software is required.

Textbook:
Esri ArcGIS Desktop Associate Certification Study Guide for 10.5, 2018, Brittney White, ISBN: 9781589485143, 96 pages, $49.99

Python Scripting for ArcGIS, Paul A. Zandbergen, ESRI Press, 2013. ISBN-13: 978-1589482821

Grading:
There are no exams for this course and the grade will based on:

- Mid-term: 30%
- Homework: 40%
- Term Project: 30%

SCHEDULE

Aug. 23	Introduction and ArcGIS Review
25	Introduction to geodatabase
30	Build a geodatabase
Sept. 1	Ex: build a geodatabase
6	Relationship class in geodatabase
8	Ex: create and edit relationships
13	Raster Mosaic/LiDAR in geodatabase
15	Ex: raster mosaic in geodatabase
20	Geoprocessing: ArcGIS toolbox/model builder
22	Ex: model builder
27	Python: introduction/interactive window/variables
29	Python: conditional and loop block
Oct. 4	Python: special data types
6	Python: file access
11	Python: function
13	Python: field calculation/code block
18	Python: field calculation/code block
20	Python: arcpy describing and listing
25	python: arcpy table access
27	python: arcpy geometric access
Nov. 1	Exam
3	Python: modular programming
8	Python: arcpy function
10	Python: arcpy raster
15	Python: numpy
17	Python: pandas
22	Python: plot
24	***Thanksgiving***
29	Python: project example
Dec. 1	Python: project example
6 (Final week)	Project meeting
8 (Final week)	Project meeting

Alex Ronquillo

From: Leonard Scinto
Sent: Thursday, February 14, 2019 4:49 PM
To: Dean Whitman; Alex Ronquillo
Cc: Assefa Melesse; Leonard Scinto
Subject: RE: Proposed GIS courses

Hello Alex et al.:

Yesterday 02/13/19 I submitted a .pdf paperwork for three GIS courses that will be created in E and E. The cover forms show that GSS might be an influenced other department. The info below is an email exchange attesting to GSS acceptance of our adding these new courses to our programs. This is currently not in the .pdf package. Does it need to be?

Let me know if you can just attach this or if you want me to redo the package.

Thank you

Len

Leonard J. Scinto, Ph.D.
Associate Professor
Department of Earth and Environment and
Southeast Environmental Research Center
AHC5-368
Florida International University
11200 SW 8th Street, Miami FL 33199
Office: 305-348-1965
Fax: 305-348-4096
scintol@fiu.edu

From: Guillermo Grenier <grenierg@fiu.edu>
Sent: Thursday, February 14, 2019 2:52 PM
To: Derrick Scott <derscott@fiu.edu>; Assefa Melesse <melessea@fiu.edu>; Jennifer Fu <fujen@fiu.edu>
Cc: Dean Whitman <whitmand@fiu.edu>; Rene Price <pricer@fiu.edu>
Subject: Re: Proposed GIS courses

What he said. The more the merrier.

G

Guillermo J. Grenier, Ph.D.
Professor of Sociology/Chairperson
Department of Global and Sociocultural Studies
Office: 305-348-3217
https://www.amazon.com/Guillermo-J.-Grenier/e/B001IXNPVY

From: Derrick Scott <derscott@fiu.edu>
Date: Thursday, February 14, 2019 at 2:49 PM
To: Assefa Melesse <melessea@fiu.edu>, Jennifer Fu <fujen@fiu.edu>, Guillermo Grenier <grenierg@fiu.edu>
Cc: Dean Whitman <whitmand@fiu.edu>, Rene Price <pricer@fiu.edu>
Subject: Re: Proposed GIS courses

I enthusiastically accept these additions to the new undergraduate certificate.
Guillermo, chime in accepting these additions.

Derrick Scott, Ph.D.
Faculty GIS/Geography and Social Sciences
Global & Sociocultural Studies
School of International and Public Affairs
Florida International University

From: Assefa Melesse
Sent: Tuesday, February 12, 2019 10:21 AM
To: Derrick Scott; Jennifer Fu; Guillermo Grenier
Cc: Dean Whitman; Rene Price
Subject: FW: Proposed GIS courses

Dear Guillermo, Derrick and Jen
See the attached 3 undergraduate GIS courses that we will be approving them today in the departmental meeting and we are targeting Bulletin 5.
The three courses will go to the GIS certificate curriculum.
We can revise the GIS certificate to include these courses and also target Bulletin 5.
These are the courses we proposed during our GIS group meeting last time but we dropped them from the GIS certificate since they were not existing.
Gulleremo: Please send us an e-mail accepting these course proposals.
best

Assefa M. Melesse, Ph. D., P.E., D.WRE
Professor
Department of Earth and Environment, AHC-5-390
Florida International University
11200 SW 8th Street
Miami, FL 33199
Tel. (305) 348-6518; Fax (305) 348-3877
E-mail: melessea@fiu.edu
Homepage: http://faculty.fiu.edu/~melessea/

PUBLICATION LINKS
Google ORCID RESEARCHERID RG ACADEMIA Scopus

From: Dean Whitman <whitmand@fiu.edu>
Sent: Tuesday, February 12, 2019 10:00 AM

To: Assefa Melesse <melessea@fiu.edu>
Subject: Proposed GIS courses

Assefa,
These are the 3 undergraduate GIS courses which we are planning to submit to Bulletin 5 and that we would like to have included in a revision of the GIS undergraduate certificate . Please forward them to Jeniffer, Derick, and the GSS chair. We probably should get an email from the chair assenting to these new courses.

Dean

Dean Whitman, PhD
Professor
Undergraduate Program Director
Department of Earth and Environment, AHC5 - Rm 396
Florida International University
Miami, FL 33199
(305) 348-3089
Department Webpage: http://earthenvironment.fiu.edu/

DO NOT TYPE IN THIS BOX
Bulletin # : _____
Academic Year : _____

FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
Proposal for a New Course

1. **School/College** Arts, Sciences, and Education

   Div./Dept. in Which Taught Earth and Environment

2. GIS (Alpha Prefix) | 4 (1st Digit) | _____ (Last 3 Digits) | _____ ("C"-lec-lab "L"-Lab) | 3 (Cr. Hrs.) **CIP Code** *(Leave this blank):* _____

3. **Grading Method (select one):** ☒ Graded ☐ Pass/Fail

4a. **Course Title** Advanced Spatial Analysis of Earth and Environmental Data

b. **Abbreviated course Title** *(for computer class schedules, transcripts)* Advanced Spatial Analysis

LIMITED TO 25 Characters *(including spaces)*

5. **Statewide Course Numbering Subject Matter Area** Geography: Information Science

6. **Catalog Description/Major Topics** *(not to exceed 200 characters including spaces)*

   College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

   An advanced course in the analysis and modeling of geospatial data. Topics include: point, line and raster pattern analysis, geostatistical surface estimation, map algebra, and suitability modeling.

7. **Attach detailed syllabus course outline and course justification on separate page(s).**

8. **Prerequisite(s):** GIS 2xxx or GIS 3043 or GIS 3048 or CGN 4321 or other introductory course in GIS

9. **Corequisite(s):** _____

10. **Objective(s) of Course:**

    Students completing this course will have a strong understanding of the theory of and the basic functions used in GIS spatial analysis and modeling.

11. **Does this course duplicate/overlap other courses at FIU?** ☐ No ☒ Yes

    If yes, please explain: This course is meant to be cross listed with an existing course GLY 5758: GIS and Spatial Analysis so that undergraduate students may take an advanced course in GIS.

12. **What other closely related department(s) have been consulted about this course?**

    Global and Sociocultural Studies

13. **Is this course used for the assessment of a program or a certificate (if yes, then send a notification to assessment@fiu.edu)?** **No** **Yes**

PROPOSAL REQUESTED BY:

Faculty Contact Dean Whitman (Type name) _____ (Signature) 2 / 1 / 20 19

whitmand@fiu.edu (Email address) (305) 348-3089 (Phone number)

Chairperson (Dept./Div.) René Price (Type name) René Price (Signature) 2 / 13 / 20 19

Chairperson (Curr. Comm.) _____ (Type name) _____ (Signature) ___ / ___ / 20___

College/School Dean _____ (Type name) _____ (Signature) ___ / ___ / 20___

Submit one original form. Attach one copy of the course justification and course syllabus, course description, objectives, major topics and textbooks.

Proposed course GIS 4xxx: Advanced Spatial Analysis of Earth and Environmental Data

The Department of Earth and Environment has offered for many years an advanced graduate level course in Geographic Information Systems (GIS), *GLY 5758, GIS and Spatial Analysis for Earth Scientists*. In the past, some undergraduate students who have completed an introductory GIS course such as GIS 3043 have expressed interest in taking a more advanced course in the subject. GLY 5758 normally has room for additional students and this proposed course will be cross-listed with GLY5758 in order to accommodate interested undergraduates.

The proposed course will also count as an elective for the Environmental Studies BS, Geoscience BS, and Sustainability and the Environment BA programs offered by the Department of Earth and Environment. In the future, it may also be added as an Intermediate/Advanced course selection in the new Undergraduate Certificate program in Applied Geographic Information Systems being proposed by the Department of Global and Sociocultural Studies (submitted for Bulletin 3).

Florida International University, Department of Earth and Environment

Advanced Spatial Analysis of Earth and Environmental Data
GIS 4xxx, Fall Term 2020
Tu/Th 2:00 – 3:15 GISRSAL Lab, GL 274

Course Syllabus

Instructor
Dr. Dean Whitman
Office: AHC5-396; Tel: 348-3089; email: whitmand@fiu.edu
Office Hours: Wednesday 1:30-3:30, Thursday 10-12, or by appointment

Course Description:
Spatial analysis is a set of techniques for analyzing patterns of and interrelationships between map data. The field of spatial analysis has seen much growth in recent years with the introduction of inexpensive and easy to use Geographic Information Systems (GIS). While many users employ GIS only for building spatial databases and displaying maps, GIS are powerful tools for performing spatial analysis. This course will introduce advanced undergraduates to techniques for using GIS technology to solve spatial problems. Emphasis in this course will be on applying raster analysis techniques.

The course will be comprised of lectures and computer exercises. Computer instruction will utilize the ESRI ArcGIS suite of software. Course will be composed of 1) Review of GIS concepts and data models; 2) concepts of point and line pattern statistics; 3) methods of spatial analysis including density mapping, buffer zone analysis, 4) deterministic and geo-statistical surface estimation methods, 5) multi-layer map comparison, map algebra, and suitability modeling.

Course Objectives
Students completing this course will have a strong understanding of the theory of and the basic functions used in GIS spatial analysis and modeling. Students will have a functional understanding of the Spatial Analyst and Geostatistical Analyst extensions for ArcGIS 10.

Learning Outcomes
Students completing this course will be able to perform the following:
1. Describe the elements of and the differences between the vector and raster data models.
2. List and describe the various tools used in the analysis of GIS data.
3. Perform distance, density, and pattern analysis on vector and raster data.
4. Estimate and interpolate surfaces.
5. Analyze, compare and model univariate, bivariate and multivariate geospatial data.
6. Apply methods of map algebra to model spatial processes and problems.

Prerequisites and Recommended Background:
An introductory GIS course (GIS 2xxx, *GIS 3043, GIS 3048, CGN 4321 or equivalent*) or demonstrated competence with Desktop ArcGIS software is required. Basic knowledge of analytic geometry, trigonometry, and statistics are recommended.

Required Reading:

1. M. J. de Smith, M.F. Goodchild, and P. A. Longley, *Geospatial Analysis, A Comprehensive Guide to Principles, Techniques and Software Tools, 6th Ed*, 2018.
   - Available free online at www.spatialanalysisonline.com. Pdf, Kindle, and hardcopy versions may also be purchased from the publisher (students can receive a discount)
   - Note: Author M. J. de Smith also has a free online *Statistical Analysis Handbook* available at http://www.statsref.com/ which may be referenced in the course.
2. ArcGIS manuals:
   ESRI provides an excellent set of documentation. It can be accessed via the following:
   - From the Help menu in ArcGIS (select ArcGIS Desktop Help)
   - From the Windows All Programs Menu (ArcGIS → ArcGIS for Desktop 10.5 Help)
   - Online at http://desktop.arcgis.com/en/documentation/
     - Under ArcMap, select the Previous Version 10.5x
     - http://desktop.arcgis.com/en/arcmap/10.5/map/main/mapping-and-visualization-in-arcgis-for-desktop.htm

Recommended Reading:

3. A. Mitchell, *The ESRI Guide to GIS Analysis, Volume 2: Spatial Measurements & Statistics*, ESRI Press, 2005, ISBN: 9781589481169
   - available from ESRI Press ($35), http://esripress.esri.com/display/index.cfm
4. P. A. Zanderbergen, *Python Scripting for Arc GIS*, ESRI Press, 2013, ISBN: 9781589482821
   - available from ESRI Press ($79), http://esripress.esri.com/display/index.cfm

Software:

Most examples and exercises will utilize ESRI's ArcGIS V.10.5 with the Spatial Analyst, Geostatistical Analyst and 3-D Analyst extensions. ArcGIS must have these extensions installed in order f*or you to do the exercises in this course.*

- GIS Lab Accounts (GL 274)
  - ***Username***—panther\username (where *username* is your email address without the "@fiu.edu" extension
  - ***Password***--your universal "My Accounts" password
- At Home Student Copy
  - Students may obtain 1-year ArcGIS licenses free of charge.
  - Go to http://dpanther2.fiu.edu/gis/services/software-licenses/software-licenses-students and follow the instructions.

Additional numerical analysis will use *Microsoft Excel* and perhaps *R*.

Internet Resources

This is a web assisted course. A course webpage will be maintained with **Canvas.** This page will contain this syllabus, lectures notes, reading materials, exercises, data sets and links.

To access this resource, go to https://canvas.fiu.edu/ and LOGIN menu. Login with your FIU MyAccounts User Name and Password. Select GIS4xxx U0 1208

Grading:
Course grade will be based on attendance and class participation (10%), exercises (60%), a Midterm Exam (15%), and a Final Exam (15%).

- Homework will be assigned approximately every two weeks. Assignments will be distributed through Canvas with associated data. Normally you will have 1-2 weeks to complete the assignment. Late assignments by be downgraded. All assignments must be typed and **submitted through Canvas**, as a Microsoft Word document unless otherwise indicated.

  I will be grading the assignments through Canvas so your submissions should be properly formatted. Submitted assignments should have the appearance of a professional technical report containing text, tables and maps. Text should contain a brief abstract of the assignment, answers to questions and discussions where indicated in the assignment. Do not include superfluous text from the assignment. Tables should include a caption (above the table) with numbers displayed to an appropriate number of significant digits. Maps should be Jpeg files produced with the *Export Map* command (no screen dumps please!) imbedded into the Word document. Maps should contain graticules, scales, legends and titles where appropriate. All maps should contain descriptive captions, numbered as Figure 1, Figure 2, etc.
- Exams will be closed book and will test your understanding of concepts covered in class. The Final Exam may include a Computer component where you demonstrate basic skills in applying the functions explored in the exercises.

University Policy on Academic Dishonesty and Misconduct

- All students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of Florida International University. Any act that violates the student/instructor trust will not be tolerated. Acts of cheating, plagiarism, or lying will result in an "F" grade for the class and the possibility of expulsion from FIU.
- All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the *Student Handbook.*

Course Outline and Reading Assignments:

Course Outline and Reading Assignments (*Tentative*)**:**

Week 1:	Organization. GIS Lab orientation. Maps as models. GIS data types, and structures. Vector and raster data models
Reading:	**de Smith et.al:** Ch 1-2; **Michell::** Ch 1
Week 2	What is spatial analysis? Modeling of spatial data. Review of raster analysis functions. Working with Raster Data Models; The ESRI Grid model
Reading:	**de Smith et.al:** Ch 3; **ArcGIS Help:** Modeling and Solving Spatial Problems
Exercise 1:	Getting Started with ArcGIS Spatial Analyst
Week 3	Resampling, transforming, and registering Grids Geometric Transformations of Grids
Reading :	**ArcGIS Help**: Performing analysis in Spatial Analyst
Exercise 2:	Grid Import, Resampling, and Registration, Using the Raster Calculator
Week 4:	Vector to raster; point and lines to areas.
Reading:	**ArcGIS Help**: Fundamentals of raster data; To Raster toolset concepts
Exercise 3:	Vector to raster transformations. Fractal dimension of a coastline.
Week 5 & 6:	Point and line distributions. Measurements of spatial form. Randomness, clustering, regularity and anisotropy.
Reading:	**de Smith et.al:** Chs 4.34, 5.1-5.4; **Mitchell**, Ch 3 and 4
Exercise 4:	Measuring Geographic Point Distributions
Week 7:	Geoprocessing and Python Scripting Midterm Quiz
Reading:	**(TBA)**
Week 8:	Estimating surfaces; the art of computer interpolation gridding, and interpolation. TIN, IDW, trend surfaces, kriging.
Reading:	**de Smith et.al:** Ch 6.6;. **ArcGIS Help**: Geostatistical Analyst
Exercise 5:	Modeling of Surfaces I: Deterministic Methods-IDW, Splines, TIN
Week 9 & 10:	Optimal estimation of surfaces, geostatistics, kriging.
Reading:	**de Smith et.al:** Ch 6.7; **ArcGIS Help**: Creating surfaces with geostatistical techniques
Exercise 6:	Modeling of Surfaces II: Variograms, Geostatistics and Kriging

Week 11:	Univariate analysis of surfaces and raster maps. Reclassification, filtering and image processing. Local, zonal, and focal functions.
Reading:	**de Smith et.al:** Ch 4.6; **ArcGIS help:** Performing analysis in Spatial Analyst
Week 12:	Analysis of map pairs. Spatial association analysis. Cross area tabulation.
Reading:	**Michell:** Ch 5
Exercise 7:	Two map association with cross tabulation
Week 13:	Analysis of two or more coincident maps. Map algebra. Cluster analysis. Regression Modeling; Inter-map relationships.
Reading:	**de Smith et. al:** Ch 5.6; **Michell:** Ch 5;
Exercise/Demo:	Spatial regression models
Week 14 & 15	Suitability modeling.
Reading:	**ArcGIS Help:** Modeling and Solving Spatial Problems; Overlay toolset concepts
Exercise 8:	Suitability and Hazard Modeling
Finals Week:	Final Exam, Dec 6, 12-2 PM

Alex Ronquillo

From: Leonard Scinto
Sent: Thursday, February 14, 2019 4:49 PM
To: Dean Whitman; Alex Ronquillo
Cc: Assefa Melesse; Leonard Scinto
Subject: RE: Proposed GIS courses

Hello Alex et al.:

Yesterday 02/13/19 I submitted a .pdf paperwork for three GIS courses that will be created in E and E. The cover forms show that GSS might be an influenced other department. The info below is an email exchange attesting to GSS acceptance of our adding these new courses to our programs. This is currently not in the .pdf package. Does it need to be?

Let me know if you can just attach this or if you want me to redo the package.

Thank you

Len

Leonard J. Scinto, Ph.D.
Associate Professor
Department of Earth and Environment and
Southeast Environmental Research Center
AHC5-368
Florida International University
11200 SW 8th Street, Miami FL 33199
Office: 305-348-1965
Fax: 305-348-4096
scintol@fiu.edu

From: Guillermo Grenier <grenierg@fiu.edu>
Sent: Thursday, February 14, 2019 2:52 PM
To: Derrick Scott <derscott@fiu.edu>; Assefa Melesse <melessea@fiu.edu>; Jennifer Fu <fujen@fiu.edu>
Cc: Dean Whitman <whitmand@fiu.edu>; Rene Price <pricer@fiu.edu>
Subject: Re: Proposed GIS courses

What he said. The more the merrier.

G

Guillermo J. Grenier, Ph.D.
Professor of Sociology/Chairperson
Department of Global and Sociocultural Studies
Office: 305-348-3217
https://www.amazon.com/Guillermo-J.-Grenier/e/B001IXNPVY

From: Derrick Scott <derscott@fiu.edu>
Date: Thursday, February 14, 2019 at 2:49 PM
To: Assefa Melesse <melessea@fiu.edu>, Jennifer Fu <fujen@fiu.edu>, Guillermo Grenier <grenierg@fiu.edu>
Cc: Dean Whitman <whitmand@fiu.edu>, Rene Price <pricer@fiu.edu>
Subject: Re: Proposed GIS courses

I enthusiastically accept these additions to the new undergraduate certificate.
Guillermo, chime in accepting these additions.

Derrick Scott, Ph.D.
Faculty GIS/Geography and Social Sciences
Global & Sociocultural Studies
School of International and Public Affairs
Florida International University

From: Assefa Melesse
Sent: Tuesday, February 12, 2019 10:21 AM
To: Derrick Scott; Jennifer Fu; Guillermo Grenier
Cc: Dean Whitman; Rene Price
Subject: FW: Proposed GIS courses

Dear Guillermo, Derrick and Jen
See the attached 3 undergraduate GIS courses that we will be approving them today in the departmental meeting and we are targeting Bulletin 5.
The three courses will go to the GIS certificate curriculum.
We can revise the GIS certificate to include these courses and also target Bulletin 5.
These are the courses we proposed during our GIS group meeting last time but we dropped them from the GIS certificate since they were not existing.
Gulleremo: Please send us an e-mail accepting these course proposals.
best

Assefa M. Melesse, Ph. D., P.E., D.WRE
Professor
Department of Earth and Environment, AHC-5-390
Florida International University
11200 SW 8th Street
Miami, FL 33199
Tel. (305) 348-6518; Fax (305) 348-3877
E-mail: melessea@fiu.edu
Homepage: http://faculty.fiu.edu/~melessea/

PUBLICATION LINKS
Google ORCID RESEARCHERID RG ACADEMIA Scopus

From: Dean Whitman <whitmand@fiu.edu>
Sent: Tuesday, February 12, 2019 10:00 AM

To: Assefa Melesse <melessea@fiu.edu>
Subject: Proposed GIS courses

Assefa,
These are the 3 undergraduate GIS courses which we are planning to submit to Bulletin 5 and that we would like to have included in a revision of the GIS undergraduate certificate . Please forward them to Jeniffer, Derick, and the GSS chair. We probably should get an email from the chair assenting to these new courses.

Dean

Dean Whitman, PhD
Professor
Undergraduate Program Director
Department of Earth and Environment, AHC5 - Rm 396
Florida International University
Miami, FL 33199
(305) 348-3089
Department Webpage: http://earthenvironment.fiu.edu/

DO NOT TYPE IN THIS BOX
Bulletin # : _____
Academic Year : _____

FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
Proposal for a New Course

1. **School/College** Arts, Sciences, and Education

   Div./Dept. in Which Taught Earth and Environment

2. GIS (Alpha Prefix) | 4 (1st Digit) | ____ (Last 3 Digits) | ____ ("C"-lec-lab "L"-Lab) | 3 (Cr. Hrs.) | **CIP Code** *(Leave this blank):* _____

3. **Grading Method (select one):** ■ Graded ☐ Pass/Fail

4a. **Course Title** Geospatial measurement techniques in Earth and Environmental Sciences

b. **Abbreviated course Title** *(for computer class schedules, transcripts)* Geospatial measurements

LIMITED TO 25 Characters *(including spaces)*

5. **Statewide Course Numbering Subject Matter Area** Geography: Information Science

6. **Catalog Description/Major Topics** *(not to exceed 200 characters including spaces)*

   College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

   Students will be introduced to state-of-the-art field geospatial measurement techniques that will prepare them to conduct advanced research in their senior year and graduate school.

7. **Attach detailed syllabus course outline and course justification on separate page(s).**
8. **Prerequisite(s):** _____
9. **Corequisite(s):** _____
10. **Objective(s) of Course:**

    Students successfully completing this course should be able to: (1) Design measurement surveys, (2) Collect, download, and process surveying data, and (3) conduct data post-processing.

11. **Does this course duplicate/overlap other courses at FIU?** ■ No ☐ Yes

    If yes, please explain: _____

12. **What other closely related department(s) have been consulted about this course?**

    Global and Sociocultural Studies

13. **Is this course used for the assessment of a program or a certificate (if yes, then send a notification to assessment@fiu.edu)?** No Yes

PROPOSAL REQUESTED BY:

Faculty Contact Shimon Wdowinski - S. Wdowinski (Type name) S. Wdowinski (Signature) 01 / 30 / 2019

swdowins@fiu.edu (Email address) 7-6826 (Phone number)

Chairperson (Dept./Div.) René Price (Type name) René Price (Signature) 2 / 13 / 2019

Chairperson (Curr. Comm.) _____ (Type name) _____ (Signature) ___ / ___ / 20___

College/School Dean _____ (Type name) _____ (Signature) ___ / ___ / 20___

Submit one original form. Attach one copy of the course justification and course syllabus, course description, objectives, major topics and textbooks.

Proposed course GIS 4xxx: Geospatial measurement techniques in Earth and Environmental Sciences

The Department of Earth and Environment has offered for many years an introductory level course in Geographic Information Systems (GIS), *GIS 3043 Introduction to Geographic Information Systems*. In the past, some undergraduate students who have completed GIS 3043 have expressed interest in taking a more advanced course in the subject. In addition, no lower division course in the program currently covers modern data collection techniques used in the Earth and Environmental Sciences such as GPS and remote sensing. These techniques are widely used in the workforce and in graduate programs.

The proposed course will also count as an elective for the Environmental Studies BS, Geoscience BS, and Sustainability and the Environment BA programs offered by the Department of Earth and Environment. In the future, it may also be added as a *Methods* course selection in the new Undergraduate Certificate program in Applied Geographic Information Systems being proposed by the Department of Global and Sociocultural Studies (submitted for Bulletin 3).

Florida International University
Department of Earth and Environment
Spring Term 2020

Geospatial measurement techniques in Earth and Environmental Sciences

Instructor:
Dr. Shimon Wdowinski
Office Hours: Tues & Thurs at 12:30-1:30 PM at AHC5-388, or by appointment

Contact info: email: shimon.wdowinski@fiu.edu;

Course Description:
In this course, students will be introduced to state-of-the-art field measurement techniques used in Earth and Environmental Sciences that will prepare them to conduct advanced research in their senior year and graduate school. The advanced techniques include usage of the following technologies: Total station, Global Positioning System (GPS), Light detection and ranging (Lidar), and drone surveying. The class will include hand-on experience of data collection, data downloading, data processing, and data interpretation. Prior to the hand-on activities, theoretical background on the technologies will be introduced in the classroom. After the activities, students will explore the use of the observations for various research topics, including tectonic plate motion, geomorphology, natural hazards, ecology and forestry.

Course Objectives and Learning Outcomes:
Students successfully completing this course should be able to do the following:

- Design surveys for measuring location and changes of the Earth's surface
- Collect, download, and process surveying data
- Use quantitative methods for data post-processing
- Get familiar with field of tectonic plate motion, geomorphology, natural hazards, and ecology.

Prerequisites: Familiarity with Windows OS, Windows Explorer, and Excel is required.

Required Book:
None

Internet Resources:
This is a web assisted course. A course webpage will be maintained with **Canvas**. This page will contain this syllabus, lectures, exercises, case studies, and announcements for the course.

Grading

Attendance/participation*	20%
Surveys and data processing	50%
Student presentation of survey results	30%

*Attendance is mandatory and expected. Participation includes being an active participant in discussions, posing insightful questions/comments and your general engagement. Although attendance is required for all classes, accommodations for Legitimate Excuses for missed classes will be made by consultation between the instructor and the student.

Grading:

A	93 – 100%
A-	90 – 93%
B+	87 – 90%
B	83 – 87%
B-	80 – 83%
C	70 – 80%
D	60 – 70%
F	< 60%

Coarse structure

Week 1: Introduction
Weeks 2-4: Total station
Weeks 5-7: GPS
Weeks 8-10: Lidar
Weeks 11-13: Drone
Week 14: Summary

Tentative Lecture Schedule

Week 1:
Introduction
Activity 1: GPS data collection with smartphones, data download, data display on Google Earth

Week 2: Intro to Geodesy and Total station measurements
Week 3: Activity 3: Total station surveying on campus and data download
Week 4: Data processing. Application of Total station for measuring elevation and distances.

Week 5: Intro to GPS and GPS surveying
Week 6: Activity 2: Real Time Kinematic (RTK) GPS surveying on campus and data download

Week 7: Data processing. Application of GPS for measuring tectonic plate motion.

Week 8: Intro to Lidar
Week 9: Activity 4: Lidar survey on campus, data download
Week 10: Data processing. Application of Lidar for geomorphology/forestry.

Week 11: Intro to drone surveying
Week 12: Activity 5: Drone survey near campus, data download
Week 13: Data processing. Usage of drone data for Digital Elevation Model (DEM) calculations.

Week 14: Summary. Student presentation of survey results.

General Classroom and Course Policies:

- Attendance is mandatory. This is a fast-paced course. To do well, you must attend class.
- No extensions will be given for assignment deadlines. However, if you have a medical emergency or a serious family problem arises, arrangements can be made. Verification in the form of an official document will be required. Notify me immediately in the event of such a situation.
- Frequent reliable access to the learning management system Blackboard Learn is required for this class.
- In keeping with university policy, accommodations for students who wish to observe their religious holidays will be made. Students must make these requests known during the first week of the semester.
- You are expected to be respectful of those around you and not interfere with the learning environment of fellow students. To that end, the use of electronic devices for purposes other than those specified for class use are not permitted.

If a student has a disability and needs assistance with class, please contact the Disability Resource Center (GC 190; 305-348-3532). It is the responsibility of each student to work with the Center and Instructor to make arrangements for the classroom and assigned work as needed for their situation.

Important University Policies That Apply to This Class

Academic Dishonesty and Misconduct
All students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of Florida International University. Any act that violates the student/instructor trust will not be tolerated. Acts of cheating, plagiarism, or lying will result in an "F" grade for the class and the possibility of expulsion from FIU.

All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the *Student Handbook.*

Incompletes
An incomplete grade is a temporary symbol given at the discretion of the instructor for work not completed because of serious interruption not caused by the student's own negligence. An incomplete should be given only to a student who has successfully completed half of the work in the course. An incomplete must be made up as quickly as possible, but no later than two consecutive semesters after the initial taking of the course or it will automatically default to an "F" or the grade that the student earned in the course.

Change of Grades
Once submitted, end-of-semester grades (apart from incompletes) are final and can be changed only to correct an error or cases in which some part of the student's work was unintentionally overlooked.

Early Alert
In an effort to help you succeed in your academic courses, FIU utilizes an Early Alert system. Instructors are now able to notify students' academic advisors if there are concerns about class performance. If an alert is submitted, your academic advisor will send you a message via your Student Dashboard (accessed via your MYFIU page) to discuss ways to improve your performance. Please respond to any communication you receive from your academic advisor about an early alert. Our goal with this program is to help you to be successful by identifying any issues as early on as possible and working to address them.

Alex Ronquillo

From: Leonard Scinto
Sent: Thursday, February 14, 2019 4:49 PM
To: Dean Whitman; Alex Ronquillo
Cc: Assefa Melesse; Leonard Scinto
Subject: RE: Proposed GIS courses

Hello Alex et al.:

Yesterday 02/13/19 I submitted a .pdf paperwork for three GIS courses that will be created in E and E. The cover forms show that GSS might be an influenced other department. The info below is an email exchange attesting to GSS acceptance of our adding these new courses to our programs. This is currently not in the .pdf package. Does it need to be?

Let me know if you can just attach this or if you want me to redo the package.

Thank you

Len

Leonard J. Scinto, Ph.D.
Associate Professor
Department of Earth and Environment and
Southeast Environmental Research Center
AHC5-368
Florida International University
11200 SW 8th Street, Miami FL 33199
Office: 305-348-1965
Fax: 305-348-4096
scintol@fiu.edu

From: Guillermo Grenier <grenierg@fiu.edu>
Sent: Thursday, February 14, 2019 2:52 PM
To: Derrick Scott <derscott@fiu.edu>; Assefa Melesse <melessea@fiu.edu>; Jennifer Fu <fujen@fiu.edu>
Cc: Dean Whitman <whitmand@fiu.edu>; Rene Price <pricer@fiu.edu>
Subject: Re: Proposed GIS courses

What he said. The more the merrier.

G

Guillermo J. Grenier, Ph.D.
Professor of Sociology/Chairperson
Department of Global and Sociocultural Studies
Office: 305-348-3217
https://www.amazon.com/Guillermo-J.-Grenier/e/B001IXNPVY

From: Derrick Scott <derscott@fiu.edu>
Date: Thursday, February 14, 2019 at 2:49 PM
To: Assefa Melesse <melessea@fiu.edu>, Jennifer Fu <fujen@fiu.edu>, Guillermo Grenier <grenierg@fiu.edu>
Cc: Dean Whitman <whitmand@fiu.edu>, Rene Price <pricer@fiu.edu>
Subject: Re: Proposed GIS courses

I enthusiastically accept these additions to the new undergraduate certificate.
Guillermo, chime in accepting these additions.

Derrick Scott, Ph.D.
Faculty GIS/Geography and Social Sciences
Global & Sociocultural Studies
School of International and Public Affairs
Florida International University

From: Assefa Melesse
Sent: Tuesday, February 12, 2019 10:21 AM
To: Derrick Scott; Jennifer Fu; Guillermo Grenier
Cc: Dean Whitman; Rene Price
Subject: FW: Proposed GIS courses

Dear Guillermo, Derrick and Jen
See the attached 3 undergraduate GIS courses that we will be approving them today in the departmental meeting and we are targeting Bulletin 5.
The three courses will go to the GIS certificate curriculum.
We can revise the GIS certificate to include these courses and also target Bulletin 5.
These are the courses we proposed during our GIS group meeting last time but we dropped them from the GIS certificate since they were not existing.
Gulleremo: Please send us an e-mail accepting these course proposals.
best

Assefa M. Melesse, Ph. D., P.E., D.WRE
Professor
Department of Earth and Environment, AHC-5-390
Florida International University
11200 SW 8th Street
Miami, FL 33199
Tel. (305) 348-6518; Fax (305) 348-3877
E-mail: melessea@fiu.edu
Homepage: http://faculty.fiu.edu/~melessea/

PUBLICATION LINKS
Google ORCID RESEARCHERID RG ACADEMIA Scopus

From: Dean Whitman <whitmand@fiu.edu>
Sent: Tuesday, February 12, 2019 10:00 AM

To: Assefa Melesse <melessea@fiu.edu>
Subject: Proposed GIS courses

Assefa,
These are the 3 undergraduate GIS courses which we are planning to submit to Bulletin 5 and that we would like to have included in a revision of the GIS undergraduate certificate . Please forward them to Jeniffer, Derick, and the GSS chair. We probably should get an email from the chair assenting to these new courses.

Dean

Dean Whitman, PhD
Professor
Undergraduate Program Director
Department of Earth and Environment, AHC5 - Rm 396
Florida International University
Miami, FL 33199
(305) 348-3089
Department Webpage: http://earthenvironment.fiu.edu/

DO NOT TYPE IN THIS BOX
Bulletin # : _____
Academic Year : _____

FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
Proposal for a New Course

1. **School/College** Arts, Sciences, and Education
   Div./Dept. in Which Taught Earth and Environment

2. iSC (Alpha Prefix) | 4 (1st Digit) | ____ (Last 3 Digits) | ____ ("C"-lec-lab "L"-Lab) | 3 (Cr. Hrs.) **CIP Code** *(Leave this blank):* _____

3. **Grading Method (select one):** ■ Graded ☐ Pass/Fail

4a. **Course Title** Senior Seminar in Earth and Environmental Science

b. **Abbreviated course Title** *(for computer class schedules, transcripts)* Senior Seminar in E&E
LIMITED TO 25 Characters *(including spaces)*

5. **Statewide Course Numbering Subject Matter Area** Interdisciplinary Science

6. **Catalog Description/Major Topics** *(not to exceed 200 characters including spaces)*
College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

Capstone course for graduating seniors in Earth and environmental science. Includes discussion of career pathways and completion of a research project with written and oral presentations.

7. **Attach detailed syllabus course outline and course justification on separate page(s).**
8. **Prerequisite(s):** Senior standing and permission of instructor
9. **Corequisite(s):** _____
10. **Objective(s) of Course:**

1) assessment of skills of graduating seniors; 2) preparation for employment and graduate education; 3) proposal and completion of a research project including oral and written presentations

11. **Does this course duplicate/overlap other courses at FIU?** ☐ No ■ Yes
If yes, please explain: Course is meant to replace EVR 4920, GLY 4937, MET 4937
12. **What other closely related department(s) have been consulted about this course?**
_____
13. **Is this course used for the assessment of a program or a certificate (if yes, then send a notification to assessment@fiu.edu)?** No (Yes)

PROPOSAL REQUESTED BY:

Faculty Contact Dean Whitman (Type name) _____ (Signature) 2 / 1 / 2019
whitmand@fiu.edu (Email address) 7-3089 (Phone number)

Chairperson (Dept./Div.) Rene Price (Type name) _____ (Signature) 2 / 13 / 2019

Chairperson (Curr. Comm.) _____ (Type name) _____ (Signature) ____ / ____ / 20____

College/School Dean _____ (Type name) _____ (Signature) ____ / ____ / 20____

Submit one original form. Attach one copy of the course justification and course syllabus, course description, objectives, major topics and textbooks.

Proposed course ISC 4xxx: Senior Seminar in Earth and Environmental Science

The Department of Earth and Environment currently offers three separate senior seminar capstone courses, EVR 4920, GLY 4937 and MET 4937 which are used to provide career counseling and assessment of the B.A. in Earth Science, the B.S. in Environmental Studies, and the B.S. in Geosciences. For many years, these three courses have not been offered independently, but instead have been cross-listed. The scheduling and subsequent cross-listing of three separate courses has resulted in considerable administrative overhead including the need to maintain separate enrollment caps for each course.

This course is meant to replace these three senior seminar courses which will result in the streamlining of the administrative procedures for these programs. In addition, this course provides a consistent capstone companion to an existing cornerstone course, *ISC 1056, First year Seminar in Earth and Environment* which services these three undergraduate programs.

Florida International University
Department of Earth and Environment
ISC 4xxx: Senior Seminar in Earth and Environmental Science
Fall 2020, Monday, 3:00-4:15 PM, GL 245

Instructor:
Professor Dean Whitman
Office: ACH5-396, Tel: (305) 348-3089; Email: whitmand@fiu.edu
Office Hours: Monday, 10 AM–12 PM, Tues/Thurs, 1:30–3:30 PM or by arrangement.

Course description:
This is the capstone course for students completing the B.A. in Earth Science, the B.S. in Environmental Studies, and the B.S. in Geosciences. Students will complete a scientific research project, critically evaluate their findings, and communicate their findings using oral and written presentations. Students will learn about career pathways within their disciplines.

Prerequisites:
This course is intended only for students who are in their final year before graduation. Students registering for this course must have completing all required upper division courses for their degree either by the end of the current semester or in the next ensuing semester. This requirement shall be verified through permission of the instructor or the undergraduate advisor but may be waived in exceptional cases.

Course objectives:
This course will assess the skills of graduating seniors and prepare them for employment and graduate education in their specialized fields of the Earth and environmental sciences.

Learning Outcomes: By the end of the course, students will be able to:
- write a resume, cover letter and statement of interest for the purpose of locating employment or graduate opportunities.
- select an appropriate research topic with a research question or hypothesis.
- conduct a search of the scientific literature on a topic using available databases.
- collect and analyze new or reanalyze published observations and data using available tools and technology.
- write a paper of their results in the scientific style, give an oral presentation of the results, and field questions from the audience.
- Contribute peer review of others' work in a professional and useful manner.

Online Reading Materials and other Resources
A course webpage will be through **Canvas**. This page will contain this syllabus, readings, copies of exercises, links, and announcements for the course.

Textbook: none required; readings from peer-reviewed literature.

Course Content and Grading: Grades are based on the activities shown below. All written assignments (except the final paper) are to be brought to class as a **hard copy by the beginning of class** on the date shown above. If submitted after that time, it will be marked as 1 class late. Each week it is late, the final grade will be lowered by one full letter grade. The peer review assignment cannot be turned in late. If you miss your assigned presentation, it may only be rescheduled with written proof of a serious illness or accident. The order of presentations is determined the first day of class. Information on each activity is given in the table below and in class.

Activity	**% of Grade**	**Description**
Attendance	14	1% per class meeting, including final exam
Resume	5	Resume guidelines given in class. Grades will be based on neatness, spelling, grammar, completeness.
Journal Article Review	10	Two-page review of a journal article including a summary of the paper and a critique of its methods and findings.
Annotated Bibliography	10	Annotated bibliography containing ten peer-reviewed journal articles on the topic of your choice. Include a single paragraph describing the key features of the article and its usefulness in your review
Data Sources and Analysis Plan	5	A single page describing data sources and plans for analysis that will contribute to your literature of choice.
Paper Draft	10	A five page, double-spaced draft of your final paper, These pages should include new analysis of data, in-text citations and a reference list. Grading rubric provided in class.
Peer Review Rubric	6	Provide a critique of one student's paper. LATE PEER REVIEWS WILL NOT BE ACCEPTED
Research Paper and Response to Reviewers	20	A 10-12 page paper (figures and tables do not count in the page count). Include each section from the rubric provided in class, as well as response to reviewers, in-text citations, reference lists, and analysis of your data. LATE PAPERS MUST BE INDIVUDALLY APPROVED.
Presentation	20	Compose and present a 10-minute Powerpoint presentation that focuses on your paper's highlights. Students complete anonymous critiques of each others' talks after each talk. Talks are assessed on the points discussed in class.
Total	**100**	

Extra Credit Opportunities:

You may earn 5% extra credit if you join the department Linkedin group. LinkedIn connects students and graduates with others like yourself, with alumni, and with

prospective employers. Research companies, industries and graduate programs use Linkedin, so it can build your professional online presence, and increase your visibility and job prospects.

You may earn 2% credit by attending and writing a one-page summary of any of the department seminars that are held on Friday afternoon. This may only be done twice during the semester for a total of 4% extra credit.

Final Grades: A = 93-100%, A- = 90-92%, B+ = 87-89%, B = 83-86%, B- = 80-82%, C+ = 77-79%, C = 70-76%, D = 60-69, F = 0-59%.

Course Policies:

- Attendance is mandatory, and part of your grade depends on it.
- **Honesty:** Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook. In addition, any student found in violation of these academic standards, including any amount of plagarism, will earn an automatic F and be reported to the Deans Office, no exceptions. Please see FIU's policy on academic honesty, as shown in the Academic Affairs Policies and Procedures Manual (http://academic.fiu.edu/polman/sec2web.htm#two-forty-four).
- **Cell phones:** Their use, including texting, is prohibited during class. Please silence your phone at the beginning of class. If you leave the class to take a call, do not return to class that day.
- **Late Final Papers:** LATE FINAL PAPERS (WITH REDUCTION IN GRADE) WILL ONLY BE ACCEPTED IF THE STUDENT SCHEDULES AN INDIVIDUAL CONSULTATION DURING THE WEEK OF NOVEMBER 12 WITH THE INSTRUCTOR

Schedule

Date	Activity	Assignment Deadline
August 24	Course Overview, Syllabus, and Research Topics	
August 31	Literature Search and Research	
September 7	Labor Day Holiday – No Class	
September 14	Paper Sections and Grading	Journal Article Review
September 21	Jobs, Graduate School, and Resumes	
September 28	Building an Argument	Annotated Bibliography
October 5	Data Analysis and Figures	Data Sources and Analysis Plan
October 12	Elevator Talks, Mock Interviews	Resume
October 19	Critiquing Presentations	Paper Draft
October 26	Responding to Peer Reviewers Science Job Interviews	Peer Review Rubric
November 2	5 Student Presentations	
November 9	Department Exit Exam	
November 16	Veterans' Day Observed – No Class	
November 23	5 Student Presentations	Research Paper
November 30	6 Student Presentations	
December 7 (2:15-4:15PM)	6 Student Presentations (Alternate date for exit exam)	

DO NOT TYPE IN THIS BOX
Bulletin # : _____
Academic Year : _____

FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
Proposal for a New Course

1. **School/College** Arts, Sciences, and Education

   Div./Dept. in Which Taught English

2. LIT (Alpha Prefix) | 4 (1st Digit) | xxx (Last 3 Digits) | ____ ("C"-lec-lab "L"-Lab) | 3 (Cr. Hrs.) | **CIP Code** *(Leave this blank):* _____

3. **Grading Method (select one):** ☒ Graded ☐ Pass/Fail

4a. **Course Title** Gothic Literature

b. **Abbreviated course Title** *(for computer class schedules, transcripts)* Gothic Literature

LIMITED TO 25 Characters *(including spaces)*

5. **Statewide Course Numbering Subject Matter Area** _____

6. **Catalog Description/Major Topics** *(not to exceed 200 characters including spaces)*

   College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

   This course covers the history of Gothic literature from Horace Walpole's Castle of Otranto, published in 1764, to modern horror fiction.

7. **Attach detailed syllabus course outline and course justification on separate page(s).**

8. **Prerequisite(s):** ENC 1101, ENC 1102

9. **Corequisite(s):** _____

10. **Objective(s) of Course:**

    Students will read and respond to a variety of Gothic literature written over the last 250 years alongside some of the major critical and theoretical discussions about it.

11. **Does this course duplicate/overlap other courses at FIU?** ☒ No ☐ Yes

    If yes, please explain: _____

12. **What other closely related department(s) have been consulted about this course?**

    _____

13. **Is this course used for the assessment of a program or a certificate (if yes, then send a notification to assessment@fiu.edu)?** **No** **Yes**

PROPOSAL REQUESTED BY:

Faculty Contact Jason Pearl (Type name) (Signature) 01 / 25 / 2019

jpearl@fiu.edu (Email address) 305-967-4661 (Phone number)

Chairperson (Dept./Div.) Heather Russell (Type name) (Signature) 1 / 25 / 2019

Chairperson (Curr. Comm.) Mike Creeden (Type name) (Signature) ___ / ___ / 20___

College/School Dean Mike Heithaus (Type name) (Signature) ___ / ___ / 20___

Submit one original form. Attach one copy of the course justification and course syllabus, course description, objectives, major topics and textbooks.

ENGLISH DEPARTMENT PROPOSAL
"Gothic Literature"

LIT 4XXX, 3 credit hours

Justification:
The English Department has no course on Gothic literature—a perennially popular topic among not just English majors but general readers, as well. In the past, this literature has been taught under the rubric of ENL 4230, Studies in Eighteenth-Century Literature, but that is a survey of British literature—all of it—during a specific period, and this course would cover a specific genre in both English and American literature from the late eighteenth century until today.

Course Description:
This course covers the history of Gothic literature from Horace Walpole's *Castle of Otranto*, published in 1764, to modern horror fiction. It will include considerations of the Gothic in various genres and other media, as well, including film. Special attention will be given to the aesthetic, philosophical, and sociological aspects of Gothic literature.

Objectives:
Students will read and respond to a variety of Gothic literature written over the last 250 years alongside some of the major critical and theoretical discussions about it. The course will focus on the emergence of Gothic fiction as a reaction to both the early history of the novel and the philosophy of the Enlightenment.

Learning Outcomes:
By the end of the term, students will have gained familiarity with the history of the genre of the Gothic and the ways this historical context informs iterations of the Gothic today in both literature and cinema. They will develop their own interpretations of Gothic novels and formulate arguments as to their relevance in the twenty-first century.

Graded Activities:
Students take two exams (40%). They will write three papers, a short response paper (10%), a close-reading essay (20%), and a research essay (30%).

Required Texts:
Four Gothic Novels. New York: Oxford, 1994.

Gothic Literature

Professor: Jason Pearl, Ph.D.
Course #: LIT 4XXX
Meetings: _____
Office hours: _____
Office and phone: DM 459A; 305-348-3367
E-mail: Jason.Pearl@fiu.edu (best way to reach me)

Description:

This course covers the history of Gothic literature from Horace Walpole's *Castle of Otranto*, published in 1764, to modern horror fiction. It will include considerations of the Gothic in various genres and other media, as well, including film. Special attention will be given to the aesthetic, philosophical, and sociological aspects of Gothic literature.

Required Texts:

Four Gothic Novels. New York: Oxford, 1994.

Grading Criteria

1. Attendance and Participation: Attendance is mandatory because in-class lectures and discussion will contextualize the readings and allow us to deepen our understanding of them. If you miss a class, please see me, and try to get the notes from one of your peers. Everyone should arrive prepared to discuss the assigned reading. I understand some people do not like speaking in class, which is why we will also do small group work. And I ask that you bring the assigned reading—the physical text, itself—and put away cell phones and computers because studies show reading actual books and taking notes by hand facilitate greater intellectual engagement.
2. Oral Presentation (extra credit): For this assignment, you will give a five-minute oral presentation to the rest of the class. This presentation will recapitulate the argument of a critical essay about that day's reading. Find an article (not a book review) you find interesting on one of the following databases: JSTOR, Project Muse, Cambridge Journals, Oxford Journals, Taylor & Francis Online, or SAGE Journals, all available via the FIU library website. Then come to class and describe the article's main argument about the primary text, offering a few examples and concluding with your assessment of the article's usefulness. This assignment is not mandatory, but I encourage everyone to give it a try. We will be a very supportive audience!
3. Mid-Term and Final Exams (20% each): These two exams will focus on the first and second halves of the semester, respectively. The final is not cumulative. Neither is "open-book." Both will include short- and long-answer questions about the texts we read and about the lectures and discussions in class. You must obtain blue books and bring them to each exam. Please check now if you have a scheduling conflict.
4. Short Response Paper (10%): In two pages, respond to anything in the previously assigned readings. Think of this assignment as an extension of classroom discussion, or better yet think of it as a chance to say something you have not yet had the opportunity to share with me and your classmates. Do not worry about the formal requirements for an essay. More important are the ideas you present. Completing the assignment will give you full credit. Submit your paper to Canvas as an electronic document.

5. Close-Reading Essay (20%): In 3 pages, you will write an analysis of one of several preselected passages from the texts on the syllabus. Your job here will be to look at subtle formal features, for instance details and patterns in language and narrative structure. To put it another way, this sort of interpretation seeks to explain how texts do their rhetorical work, how they make their various meanings. Based on your interpretation, you must put forward an argument, clearly stated at the beginning of your essay. The body of your paper should provide evidence and examples, quoting and analyzing sections of the assigned passage. By the end, try to link the issues you have discussed to larger issues concerning the text as a whole. I will post essay prompts early in the semester. Submit your paper to Canvas as an electronic document.
6. Research Essay (30%): In seven pages, you will write an essay about one of the primary texts on the syllabus—but not the one you focused on in your shorter paper. This essay will use at least three secondary sources—articles, books, book chapters (but not book reviews)—that are both scholarly (peer-reviewed) and recently published (after 1970). The three sources must be found in the library or in the library's databases, not in one of our classroom editions. You may use whatever else you like, as long as you have three sources that meet the specifications. Essay prompts will be distributed, but if you want to choose your own topic, see me. Although this is a research assignment, one that takes into account the ideas of others, at the center will be your own argument, or thesis, and this argument should be interesting and persuasive. Your interpretation must be explained and demonstrated in the body of your essay with evidence and analysis. The paper as a whole should be clearly written and logically organized, as well as free of grammar and typographic errors. There should be multiple stages of revision and editing. Moreover, you must follow proper citation methods. If you need help, or if you just want to talk, please visit me in my office and/or see a writing tutor at the writing center (http://casgroup.fiu.edu/writingcenter/). I also recommend visiting the Purdue Online Writing Lab (http://owl.english.purdue.edu/), a useful website that offers help on everything from research citations to thesis statements. Submit your paper to Canvas as an electronic document.
7. Additional Writing: Attend a specified lecture or event, and hand in a one-page written response for extra credit. There will also be opportunities to write creatively for extra credit. The amount of extra credit you receive will be determined at the end of the semester. Please let me know if you would like me to advertise a relevant event.
8. Learning Disabilities: Your ability to engage and participate fully in this course is important to me. If you need any special accommodations—a note-taker, extra time for exams, anything else—contact me at the beginning of the semester, or have the Disability Resource Center do so, and we will make the appropriate arrangements.
9. Plagiarism: Plagiarism is the representation of the work of another as if it were your own. This includes using language, expressions, or ideas taken from another source, including internet sources. If you plagiarize, you will be penalized. You will also break my heart.

Schedule:

Week 1
Horace Walpole, *Castle of Otranto*

Week 2
Horace Walpole, *Castle of Otranto*

Week 3

Horace Walpole, *Castle of Otranto*

Week 4
William Beckford, *Vathek*

Week 5
William Beckford, *Vathek*

Week 6
William Beckford, *Vathek*

Week 7
Matthew Lewis, *The Monk*

Week 8
Matthew Lewis, *The Monk*

Week 9
Matthew Lewis, *The Monk*

Week 10
Matthew Lewis, *The Monk*

Week 11
Matthew Lewis, *The Monk*

Week 12
Mary Shelley, *Frankenstein*

Week 13
Mary Shelley, *Frankenstein*

Week 14
Mary Shelley, *Frankenstein*

Week 15
Mary Shelley, *Frankenstein*

Week 16
Mary Shelley, *Frankenstein*