Course Syllabus

Edit

Research in GIS - GIS 5107C

Office Hours: Book office hours at https://calendly.com/sounny/meetme

All course materials and lectures are available via Canvas

Class times for Track 1 - Introductory Track are with GIS 3043 -Mondays | Period 2 - 3 (8:30 AM - 10:25 AM)

Other Tracks are TBD or Online

Course Description

This course is designed to introduce Graduate students to the multifaceted world of Geographic Information Systems (GIS), focusing on its application as a powerful method for analyzing the environment. GIS is not merely a technological tool; it's a comprehensive system that integrates various spatial and non-spatial data to understand and interpret the world around us. How one uses GIS is a creative endeavor that greatly impacts the implications of research with GIS. This is why GIS is seen as an Art in the course, and through this course, you should become an Artist.

Learning Objectives

- Understanding the Fundamentals of GIS: Students will delve into the core principles of GIS, exploring how it functions as a system that captures, stores, checks, integrates, manipulates, analyzes, and displays data related to positions on the Earth's surface.
- Exploring Applications of GIS: The course will guide students through the diverse applications of GIS, particularly in environmental studies. This includes mapping and analyzing natural resources, wildlife habitats, pollution patterns, weather phenomena, etc.
- Emphasizing Key Concepts: Special emphasis will be placed on the concepts needed to effectively manipulate, query, analyze, and visualize spatial-based data. This includes understanding spatial relationships, coordinate systems, data layers, geoprocessing techniques, and cartographic principles.
- Hands-on Experience: Through practical exercises, labs, and projects, students will gain hands-on experience using GIS software and tools. They will learn to apply GIS techniques to real-world environmental problems, enhancing their analytical and problem-solving skills.
- Integrating Theory and Practice: The course will bridge the gap between theoretical knowledge and practical application, ensuring that students understand the underlying principles of GIS and know how to apply them creatively and effectively.

Outcomes

By the end of the semester, students should achieve the following:

- Comfort in Applying GIS: Students should feel comfortable applying GIS to various environmental issues, whether analyzing soil erosion patterns, predicting flood risks, mapping deforestation, or studying urban sprawl.
- Solid Understanding of Procedures and Data: Students will have a robust understanding of the procedures, methodologies, and data necessary to conduct a geographical analysis. This includes knowing how to collect, process, analyze, and interpret spatial and non-spatial data.
- Critical Thinking and Analytical Skills: The course aims to foster critical thinking and analytical skills, encouraging students to ask insightful questions, identify patterns, make informed decisions, and communicate their findings effectively.
- Preparation for Advanced Research: The foundational knowledge and skills acquired in this course will prepare students for more advanced research in GIS, equipping them with the tools and confidence to pursue further studies or professional work in the field.

Research in GIS - GIS 5107C" is more than a technical course; it's an intellectual exploration into the world of spatial analysis and geographic thinking. It offers a comprehensive and engaging exploration of GIS, nurturing students' curiosity, creativity, and competence in this vital field. Whether new to GIS or seeking to enhance existing skills, students will find this course a valuable stepping stone in their academic and professional development.

Tracks

As a student, you have three tracks for this course that you should choose at the beginning of the semester. Read this Canvas Page to help choose your track. You track choice will be approved by the instructor. **What Track should I choose?**

Tack 1 - Introductory Track

The Introductory track is tailored for graduate students who are novices in the field of GIS. In this track, you'll share the classroom with students enrolled in GIS 3043 - Foundations in GIS, which covers the foundational aspects of GIS. As you approach the semester's end, you'll have the opportunity to integrate what you've learned into a project that aligns with your graduate research. The primary objective of this track is to equip you with the essential GIS skills and knowledge, enabling you to incorporate GIS methodologies into your graduate reserach.

Tack 2 - Remedial Track

The Remedial track is designed for graduate students who have previous experience with GIS but need a refresher or have learned with older platforms and would like to learn ArcGIS Pro. This track provides

an opportunity to enhance existing GIS skills while also focusing on developing new technical competencies.

The first half of the course (parallel to GIS 3043) will be concentrated on developing technical skills and understanding how to use GIS. During this phase, students will engage in various exercises and labs that emphasize the foundational aspects of GIS, including data manipulation, spatial-based queries, and visualization techniques.

For the second half of the course, students will shift their focus to working on a semester project that aligns with their master's or Ph.D. topics. This part of the track is designed to allow students to apply their refreshed GIS skills to a research project of their choosing under the instructor's guidance. This project-oriented approach encourages students to explore innovative applications of GIS in their specific fields of study, thereby enhancing their overall research methodologies.

The Remedial track offers a balanced approach to refreshing and expanding GIS knowledge, ensuring students can apply GIS techniques to contemporary research challenges.

Tack 3 - Advanced Track

The Advanced track is designed for graduate students who already possess a comprehensive understanding of GIS and are actively utilizing GIS in their research endeavors. Throughout the semester, the course will be centered around a 'final project,' with labs and assignments progressively contributing to the culmination of your research outputs. The overarching goal of this track is to significantly enhance the methodologies section of your dissertation or thesis, thereby elevating the quality and rigor of your academic work.

During the first week of the course, you will meet with the instructor to determine the best track.

Book your meeting or attend the first day of class. To book a meeting - **https://calendly.com/sounny/meetme (https://calendly.com/sounny/meetme)**

This meeting will be part of a graded assginment that you can find here - **First Week Student-Instructor Meeting**

COURSE OBJECTIVES

1. To understand the concepts and principles of Geographic Information Science (GISc), including Geographic Information Systems (GIS), Remote Sensing (RS), Cartography, Geography, and Global Positioning Systems (GPS)
2. To become competent in solving environmental problems with GISc Tools
3. To understand and communicate in the technical language associated with GISc

INSTRUCTOR EXPECTATIONS OF STUDENTS

You will need to engage with materials on Canvas, participate in discussions, and read the assigned material. The instructor expects students to be curious about the topic and wants to engage with the materials. Students interested in the subject should not take the course. You should choose something that engages you. This is your education!

CREATIVITY

GIS is a versatile technique. Its applications are limitless. Students are expected to take this into account when doing coursework. Customizing coursework to fit your academic goals is not only allowed but encouraged.

Prerequisites

There are no formal prerequisites for this course. However, a basic geographic methods course (e.g., GEO3162C/GEO6160/GIS 3043). If there are concerns about readiness for the course, feel free to contact the instructor for guidance on which courses to take to prepare.

Course Resources

This course participates in the Affordable UF Initiative. The high cost of instructional materials can be a burden. This course works to keep your material costs at less than $20 per credit hour. To accomplish this, you don't need any text for this course. All course material will be provided on the eLearning Platform. The software will also be provided through the UF Apps framework and in TUR 3006 and on-campus libraries.

Class Meetings

You are expected to commit four to six hours per week of in-lab time during the normal semester and ten-twenty hours a week during accelerated summer. The instructor will hold virtual office hours as requested to have one-on-one instruction. You are also welcome to attend the in-person classes when avilable or stream them via zoom. Please take advantage of the various digital interactions available in the course to get feedback and foster a sense of community with the class.

Peer Review

Many assignments will require peer review. This is a time to give feedback to your fellow students and see what others are turning in. It is fine to be harsh and give feedback, but it is inappropriate to be disparaging, rude, or just plain mean. Give the peer review that you hope you will get. Constructive feedback so you can make better GIS products.

Academic Honesty

You are all bound by the student academic honor code:

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

UF Counseling Services

Resources are available on campus for students with personal problems or needing clearer career and academic goals that interfere with their academic performance. These resources are available on campus for students having personal problems or needing more clear career and academic goals that interfere with their academic performance. These resources include University Counseling Center, 301 Peabody Hall, 392-1575 (personal and career counseling); Student Mental Health, Student Health Care Center, 392-1171 (personal counseling); Center for Sexual Assault /Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161 ext. 4231 (counseling related to sexual assault and abuse); Career Resource Center, Reitz Union, 392-1601 (career development assistance and counseling).

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

Americans With Disabilities Act

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please get in touch with Student Services before bringing your request to the instructor.

Grade Breakdowns

100	A
99	A
98	A

97	A
96	A
95	A
94	A
93	A
92	A
91	A
90	A
89	B+
88	B+
87	B+
86	B+
85	B+
84	B
83	B
82	B
81	B
80	B
79	C+
78	C+
77	C+
76	C+
75	C+
74	C
73	C
72	C
71	C
70	C
69	D+
68	D+
67	D+
66	D+
65	D+
64	D
63	D

62	D
61	D
60	D
59	E
58	E
57	E
56	E
55	E
54	E
53	E
52	E
51	E
50	E
49	E
48	E
47	E
46	E
45	E
44	E
43	E
42	E
41	E
40	E
39	E
38	E
37	E
36	E
35	E
34	E
33	E
32	E
31	E
30	E
29	E
28	E

27	E
26	E
25	E
24	E
23	E
22	E
21	E
20	E
19	E
18	E
17	E
16	E
15	E
14	E
13	E
12	E
11	E
10	E
9	E
8	E
7	E
6	E
5	E
4	E
3	E
2	E
1	E
0	E

Course Summary:

Date	Details	Due
Wed Aug 23, 2023	**First Day of the Semester (https://ufl.instructure.com/calendar?event_id=2882792&include_contexts=course_489220)**	12am

Date	Details	D
Wed Sep 6, 2023	First Week Student-Instructor Meeting (https://ufl.instructure.com/courses/489220/assignments/5761327)	due by 11:59pm
Wed Sep 13, 2023	Project Pitch (https://ufl.instructure.com/courses/489220/assignments/5761331)	due by 11:59pm
Wed Sep 20, 2023	Simple Site Map (https://ufl.instructure.com/courses/489220/assignments/5761333)	due by 11:59pm
Wed Sep 27, 2023	Inspiration Reflection (https://ufl.instructure.com/courses/489220/assignments/5761328)	due by 11:59pm
Wed Oct 4, 2023	Lit Review Exercises (https://ufl.instructure.com/courses/489220/assignments/5761329)	due by 11:59pm
Wed Oct 18, 2023	Project Plan (https://ufl.instructure.com/courses/489220/assignments/5761332)	due by 11:59pm
Wed Oct 25, 2023	Status Report 1 (https://ufl.instructure.com/courses/489220/assignments/5761334)	due by 11:59pm
Wed Nov 8, 2023	Status Report 2 (https://ufl.instructure.com/courses/489220/assignments/5761335)	due by 11:59pm
Wed Nov 22, 2023	Status Report 3 (https://ufl.instructure.com/courses/489220/assignments/5761336)	due by 11:59pm
Wed Dec 6, 2023	All Work Due (https://ufl.instructure.com/calendar?event_id=2882795&include_contexts=course_489220)	12am
	Last Day of Class (https://ufl.instructure.com/calendar?event_id=2882793&include_contexts=course_489220)	12am
	Final Presentation (https://ufl.instructure.com/courses/489220/assignments/5761325)	due by 11:59pm
	Final Write Up (https://ufl.instructure.com/courses/489220/assignments/5761326)	due by 11:59pm

Date	Details	D
	Peer Review Reflection (https://ufl.instructure.com/courses/489220/assignments/5761330)	due by 11:59pm