Course Syllabus

GIS3043 - Foundations of GIS

Office Hours: Book office hours here- **https://calendly.com/sounny/meetme (https://calendly.com/sounny/meetme)**

All lectures and materials will be provided via Canvas.

COURSE DESCRIPTION

The aim of this course, Foundation in Geographic Information Systems (Geog 3043), is to immerse students in the practical application and theoretical understanding of Geographic Information Systems (GIS) as a tool for environmental analysis. Students will delve into the core principles of GIS and its diverse applications, focusing on the essential concepts required to effectively handle, interrogate, analyze, and visualize spatial data. By the conclusion of the semester, students should be adept at applying GIS to a broad spectrum of environmental challenges and possess a robust understanding of the procedures and data integral to conducting a geographical analysis. Students should be equipped to incorporate GIS into their individual research pursuits.

COURSE OBJECTIVES

1. Grasp the fundamental concepts and principles of Geographic Information Science (GISc), encompassing Geographic Information Systems (GIS), Remote Sensing (RS), Cartography, Geography, and Global Positioning Systems (GPS).
2. Develop proficiency in addressing spatial questions and research using GISc tools.
3. Acquire and effectively utilize the technical vocabulary associated with GISc.

INSTRUCTOR EXPECTATIONS OF STUDENTS

As students, you are anticipated to actively interact with the course materials on Canvas, contribute to discussions, and diligently read the assigned content. It is the expectation that you approach the subject matter with curiosity and genuine interest, fully immersing yourself in the learning process. If the topic does not resonate with you, it may be advisable to consider other courses that better align with your interests. Remember, this is your educational journey - choose a path that truly captivates you!

STATEMENT ON STUDENT CREATIVITY

Geographic Information Systems (GIS) is an incredibly flexible and dynamic tool, its potential uses extending far beyond the confines of any single discipline. The applications of GIS are virtually limitless, spanning from environmental management and urban planning to public health and business logistics, to name a few. This expansive range of applications is a testament to the transformative power of spatial analysis and geographic data in our increasingly interconnected world.

As students, you are expected to embrace this versatility when approaching your coursework. The assignments and projects in this course are designed not just to teach you the mechanics of GIS, but also to help you explore its potential in your own field of study. Whether you're a geography major looking to deepen your understanding of spatial patterns, a public health student interested in mapping disease outbreaks, or a business student analyzing market trends, GIS has something to offer you.

Therefore, customizing your coursework to align with your personal academic goals is not just permitted, but actively encouraged. This course is not about rote memorization or rigid adherence to a specific methodology. Instead, it's about exploration, innovation, and the application of GIS principles to real-world problems. So, don't hesitate to think outside the box and apply what you learn in a way that is meaningful to you. This is your opportunity to take the tools and concepts taught in this course and use them to forge your own path in your academic and professional journey.

Prerequisites

There are no formal prerequisites for this course, however, a basic statistical methods course (e.g. GEO3162C/GEO6160). If there are concerns about readiness for the course please 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 is working to keep your material costs at less than $20 per credit hour. To accomplish this, there is no required 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 as well as in TUR 3006 on campus. At the request of the student UF provides for the Esri GIS platforms for personal (Windows) laptop use.

Class Demands

Primarily, the course's core concepts and theories will be disseminated through a series of online videos. These videos are designed to provide you with a comprehensive understanding of the subject matter at your own pace. This flexible learning approach allows you to revisit any complex topics as needed, ensuring a solid grasp of the course content.

As part of your commitment to this course, you are expected to allocate between four to six hours per week for in-lab work during the standard semester. This hands-on experience is crucial in translating the

theoretical knowledge gained from the videos into practical skills. During the accelerated summer term, this commitment intensifies, requiring between ten to twenty hours per week. This increased time investment reflects the condensed nature of the summer term and ensures that you are fully equipped with the necessary skills and knowledge despite the shorter timeframe.

In addition to these structured learning components, the instructor will be available for virtual office hours upon request. This provides an invaluable opportunity for one-on-one instruction, personalized feedback, and clarification of any challenging concepts. These sessions are designed to support your learning journey and to ensure you feel confident in your understanding of the course material.

Peer Review

It's important to note that learning is a communal endeavor. Therefore, you are strongly encouraged to take advantage of the various digital interaction opportunities embedded within the course. These may include online discussion forums (GroupMe), group projects, and peer review sessions. These interactions not only provide a platform for feedback and queries but also foster a sense of community among the class. Engaging with your peers in this way can enhance your learning experience, providing diverse perspectives and collaborative problem-solving opportunities.

Many assignments will require peer review. This is a time to give feedback to your fellow students as well as see what others are turning in. It is fine to be harsh and give feedback, but it is not appropriate to be disparaging, rude, or just plain mean. Give the peer review that you hope you would 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."

Despite the course emphasis on established workflows and collaboration, the final work you hand in for labs and for exams MUST be your own work or clearly cited as not your own. Do not plagiarize code or material. The first time a student is caught cheating they will get a zero in the lab/test. On the second offense, the student will be reported to the appropriate student body.

UF Counseling Services

Resources are available on campus for students having personal problems or lacking clear career and academic goals that interfere with their academic performance. These resources are available on campus for students having personal problems or lacking 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 an accommodation, please contact 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
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42	E
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39	E
38	E
37	E
36	E
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34	E
33	E
32	E
31	E
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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=2882807&include_contexts=course_489218)	12am
Wed Aug 30, 2023	GroupMe!	to do: 11:59pm
	Welcome to GIS!	to do: 11:59pm
Fri Sep 1, 2023	Where is the Southwest? (https://ufl.instructure.com/courses/489218/assignments/5761419)	due by 11:45pm
	Lab Setup (https://ufl.instructure.com/courses/489218/assignments/5761412)	due by 11:59pm
	Questionnaire (https://ufl.instructure.com/courses/489218/assignments/5761382)	due by 11:59pm
	What is GIS? The Quiz (https://ufl.instructure.com/courses/489218/assignments/5761385)	due by 11:59pm

Date	Details	Due
Fri Sep 8, 2023	Spatial Data Quiz (https://ufl.instructure.com/courses/489218/assignments/5761386)	due by 11:55pm
	ESRI: Getting Started with GIS (https://ufl.instructure.com/courses/489218/assignments/5761399)	due by 11:59pm
	ESRI: Map Design Fundamentals or Mapping/Visualization (https://ufl.instructure.com/courses/489218/assignments/5761402)	due by 11:59pm
	Make A Simple Map - ArcGIS Pro (https://ufl.instructure.com/courses/489218/assignments/5761414)	due by 11:59pm
	Mapping Disaster Trends (https://ufl.instructure.com/courses/489218/assignments/5761415)	due by 11:59pm
	Top 10 List - Top Cities For….. (Geocoding) (https://ufl.instructure.com/courses/489218/assignments/5761418)	due by 11:59pm
Fri Sep 15, 2023	Blue Marble Quiz (https://ufl.instructure.com/courses/489218/assignments/5761391)	due by 11:59pm
	ESRI: Introduction to Coordinate Systems (https://ufl.instructure.com/courses/489218/assignments/5761401)	due by 11:59pm
	Georeferencing Lecture Quiz (https://ufl.instructure.com/courses/489218/assignments/5761379)	due by 11:59pm
	GPS Lecture Quiz (https://ufl.instructure.com/courses/489218/assignments/5761380)	due by 11:59pm
	How big is the Earth? (https://ufl.instructure.com/courses/489218/assignments/5761409)	due by 11:59pm
	Projections Lecture Quiz (https://ufl.instructure.com/courses/489218/assignments/5761388)	due by 11:59pm

Date	Details	Due
Fri Sep 29, 2023	Alaska vs Texas - Does Projection Matter when measure size of state? (https://ufl.instructure.com/courses/489218/assignments/5761395)	due by 11:59pm
	ArcGIS Pro: Make a Map of Turlington Plaza (https://ufl.instructure.com/courses/489218/assignments/5761396)	due by 11:59pm
	Georeferencing (https://ufl.instructure.com/courses/489218/assignments/5761405)	due by 11:59pm
	GPS Long Lats of the SEC (https://ufl.instructure.com/courses/489218/assignments/5761406)	due by 11:59pm
Fri Oct 6, 2023	Remote Sensing Lecture Quiz (https://ufl.instructure.com/courses/489218/assignments/5761378)	due by 11:59pm
	Terrain Analysis Quiz (https://ufl.instructure.com/courses/489218/assignments/5761392)	due by 11:59pm
Fri Oct 20, 2023	NDVI (https://ufl.instructure.com/courses/489218/assignments/5761416)	due by 11:30pm
	Crime Scene Investigation (https://ufl.instructure.com/courses/489218/assignments/5761384)	due by 11:59pm
	Ecological Niche Modeling (https://ufl.instructure.com/courses/489218/assignments/5761397)	due by 11:59pm
	Image Classification (https://ufl.instructure.com/courses/489218/assignments/5761410)	due by 11:59pm
	LCS - Von Thünen model (https://ufl.instructure.com/courses/489218/assignments/5761413)	due by 11:59pm
Fri Oct 27, 2023	ESRI: Building Models for GIS Analysis Using ArcGIS (https://ufl.instructure.com/courses/489218/assignments/5761398)	due by 11:59pm
	ESRI: Getting Started with the Geodatabase	due by 11:59pm

Date	Details	Due
	(https://ufl.instructure.com/courses/489218/assignments/5761400)	
	Map Algebra Quiz (https://ufl.instructure.com/courses/489218/assignments/5761383)	due by 11:59pm
	Spatial Analysis, Interpolation, Modeling Quiz (https://ufl.instructure.com/courses/489218/assignments/5761389)	due by 11:59pm
Fri Nov 10, 2023	Creating Maps Using Census Data (https://ufl.instructure.com/courses/489218/assignments/5761376)	due by 11:59pm
	GWR (https://ufl.instructure.com/courses/489218/assignments/5761408)	due by 11:59pm
	John Snow Map - Spatial Analysis (https://ufl.instructure.com/courses/489218/assignments/5761411)	due by 11:59pm
Fri Nov 17, 2023	Final Project Proposal (https://ufl.instructure.com/courses/489218/assignments/5761404)	due by 11:59pm
Fri Dec 1, 2023	Acronyms Quiz (https://ufl.instructure.com/courses/489218/assignments/5761393)	due by 11:59pm
	Exam 1 - GIS Conceptual Exam (https://ufl.instructure.com/courses/489218/assignments/5761390)	due by 11:59pm
	Extensions Quiz (https://ufl.instructure.com/courses/489218/assignments/5761387)	due by 11:59pm
Wed Dec 6, 2023	Last Day of Class (https://ufl.instructure.com/calendar?event_id=2882808&include_contexts=course_489218)	12am
	Course Evaluation (https://ufl.instructure.com/courses/489218/assignments/5761381)	due by 11:59pm
	Exam 2 - GIS Lab Practical (https://ufl.instructure.com/courses/489218/assignments/5761394)	due by 11:59pm

Date	Details	Due
Fri Dec 8, 2023	**All Work Due!** (https://ufl.instructure.com/calendar?event_id=2882805&include_contexts=course_489218)	12am
	Final Project Poster (https://ufl.instructure.com/courses/489218/assignments/5761403)	due by 11:59pm
	GroupMe Activity (https://ufl.instructure.com/courses/489218/assignments/5761407)	
	Peer Review (https://ufl.instructure.com/courses/489218/assignments/5761417)	