Course Syllabus

GIS 3001c/5008c

Spatial Maps and Graphs

Office Hours are by-appointment via https://calendly.com/sounny/meetme [(https://calendly.com/sounny/meetme)](https://calendly.com/sounny/meetme)

All lectures and materials will be provided via Canvas.

Course Description

This course is about data visualization, and your major objective is to create and style your maps and graphs. You will learn how to design beautiful maps and graphs! Design visually stunning thematic representations. Create interactive web maps. Learn how to design maps and graphs that spark an emotional response from a user.

Major Objective: Develop students' cartographic and graphic design skills for visualizing and presenting geospatial information.

Course Objectives:

- Design for Visual Communication
  - Visual perception
  - Visual cognition
  - Visual semiotics
  - Visual aesthetics
- Understand major principles of good cartographic design.
  - symbolization, map elements, generalization, map projection, color use, visualization, etc.
- Understand significant principles of the visual communication of data through both maps and graphs.
- Understand major techniques for data classification.
- Understand the characteristics of the major types of thematic maps
  - qualitative, choropleth, proportional symbol, dot, cartogram, etc.
- Be able to use GIS software to construct maps both professionally (for a publication, presentation, or research project, etc.) and in their daily lives (for a website, etc.)
- Have a better appreciation for the maps that students encounter in their everyday lives and appreciate how they can use the skills learned in this class for future endeavors.
- Understand ethical and social issues in the use and construction of maps and practice ethical cartographic design.
- Care more about maps and especially those of high-quality design and accuracy.
- Learn about sources of data for cartography (census, data depositories, collecting one's data, etc.) and become independent cartographers.

Course Topics

- **What is Data?**
  - Data classification
  - Symbolization
  - Generalization
- **What is a Map?**
  - Coordinate system and map projection
  - Map elements and cartographic design
- **Principles of Color**
- **Principles of Typography**
- **Basics of GIS**
  - Fundamentals of GIS and spatial analysis
  - Internet GIS and Online Mapping
  - Online Data Resources
- **Spatial Analysis and Mapping techniques**
  - Choropleth mapping, Dasymetric mapping, and Isarithmic mapping
  - Proportional symbol and dot mapping
  - Multivariate mapping, Cartograms, and flow maps
- **Basics of Spreadsheets**
- **Introductory Statistics**
  - What graphs assist in mapping?
  - How to make graphs
  - Associated Introductory Statistics
- **Mental Mapping**
- **Ethics in Data Visualization**
  - Lying with Maps
  - Lying with Stats
  - Data Privacy
- **Other Topics**

Prerequisites

There are no formal prerequisites for this course. However, a basic statistical methods course (e.g. GEO3162C/GEO6160) and familiarity with ArcGIS (e.g. GEO3043/GEO5107C), either taken previously or concurrently will be beneficial.

Course Resources

There is no required text for this course. All course material will be provided on the eLearning Platform (Canvas).

Optional Reference Textbook:

Bertin, J. (1983). Semiology of graphics: Diagrams, networks, maps (WJ Berg, Trans.). *Madison, WI: The University of Wisconsin Press, Ltd*.

Monmonier, M. (1996). *How to Lie with Maps. Second Edition.* Chicago, IL: The University of Chicago Press.

Muehlenhaus, I. (2013). *Web cartography: map design for interactive and mobile devices*. CRC Press.

Slocum, T., McMaster, R., Kessler, F. and Howard, H. (2009). *Thematic Cartography and Geographic Visualization. Third Edition.* Upper Saddle River, NJ: Pearson Prentice Hall.

Class Structure

This class operates on a studio model. Meaning that class time is unstructured and is a time for help and review of work. In general, concepts and theories will be presented in a short lecture available to watch via canvas. During the remaining course time, practical examples will be discussed, and lab exercises will be conducted. Learning GIS and Graphic Design are often difficult and time-consuming. Please use office hours and course time to get help.

Grading

Grades are assigned with the standard University breakdown. All labs/projects will be graded on a scale of 10. Grades will be averaged based on their category this breakdown for the final grade:

- Labs: 60%
- Module Quizzes: 20%
- Portfolio Project: 10%
- Exam: 5%
- Participation (GroupMe, Canvas Activity, and Peer Review): 5%

This course uses moderated grading for some assignments. Any assignment that is moderated graded that you believe should be graded higher should be appealed directly to the instructor. Send an email to the instructor requesting a regrading, and the instructor will regrade the assignment.

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 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

Software needed for this class will be available through UF Apps. It is suggested to work through UF Apps when possible. If you prefer working on other platforms, that's fine, but you will be expected to provide your own technical assistance for personal software issues.

You will be required to get the Adobe Suite. You can buy it here **http://helpdesk.ufl.edu/software-services/adobe/** **(http://helpdesk.ufl.edu/software-services/adobe/)** If you buy it through the link, it will not only give you the Adobe Suite but will make it available to you on UF Apps. Another option is that you can sign up for the 30-day free trial. This will give you access to the software during the course for free! https://helpx.adobe.com/creative-cloud/help/download-install-trial.html

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 (ADA)

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 the Student Services before bringing your request to the instructor.

Grade Cutoffs

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
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57	E
56	E
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7	E
6	E
5	E
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3	E
2	E
1	E
0	E

Course Summary:

Date	Details	Due
	📅 **First Day of Class** **(https://ufl.instructure.com/calendar?** **event_id=2597824&include_contexts=course_463194)**	12am
Tue Aug 30, 2022	📄 **GroupMe**	to do: 11:59pm
	📄 **Welcome to Spatial Maps and** **Graphs!**	to do: 11:59pm
Mon Sep 5, 2022	📅 **Labor Day** **(https://ufl.instructure.com/calendar?** **event_id=2597902&include_contexts=course_463194)**	12am

Date	Details	Due
	🚀 **Course Intro Quiz** [(https://ufl.instructure.com/courses/463194/assignments/5376443)](https://ufl.instructure.com/courses/463194/assignments/5376443)	due by 11:59pm
	📝 **Job Ads** [(https://ufl.instructure.com/courses/463194/assignments/5376479)](https://ufl.instructure.com/courses/463194/assignments/5376479)	due by 11:59pm
Tue Sep 6, 2022	🚀 **Lab Setup** [(https://ufl.instructure.com/courses/463194/assignments/5376434)](https://ufl.instructure.com/courses/463194/assignments/5376434)	due by 11:59pm
	🚀 **Tell Me about Yourself Quiz** [(https://ufl.instructure.com/courses/463194/assignments/5376438)](https://ufl.instructure.com/courses/463194/assignments/5376438)	due by 11:59pm
	📝 **Your Resume** [(https://ufl.instructure.com/courses/463194/assignments/5376499)](https://ufl.instructure.com/courses/463194/assignments/5376499)	due by 11:59pm
Tue Sep 13, 2022	📝 **Make Your Own Social Media Banner Graphic** [(https://ufl.instructure.com/courses/463194/assignments/5376485)](https://ufl.instructure.com/courses/463194/assignments/5376485)	due by 11:59pm
	📝 **Spatial Thinking** [(https://ufl.instructure.com/courses/463194/assignments/5376495)](https://ufl.instructure.com/courses/463194/assignments/5376495)	due by 11:59pm
Tue Sep 20, 2022	📝 **COVID County Impact Infographic** [(https://ufl.instructure.com/courses/463194/assignments/5376452)](https://ufl.instructure.com/courses/463194/assignments/5376452)	due by 11:59pm
	📝 **ESRI's Make a Map with ArcGIS Pro** [(https://ufl.instructure.com/courses/463194/assignments/5376467)](https://ufl.instructure.com/courses/463194/assignments/5376467)	due by 11:59pm
Tue Sep 27, 2022	📝 **Make a simple map with ArcGIS Pro** [(https://ufl.instructure.com/courses/463194/assignments/5376481)](https://ufl.instructure.com/courses/463194/assignments/5376481)	due by 11:59pm
	🚀 **What is a Map Quiz** [(https://ufl.instructure.com/courses/463194/assignments/5376445)](https://ufl.instructure.com/courses/463194/assignments/5376445)	due by 11:59pm
Tue Oct 4, 2022	📝 **Choropleth Mapping** [(https://ufl.instructure.com/courses/463194/assignments/5376450)](https://ufl.instructure.com/courses/463194/assignments/5376450)	due by 11:59pm

Date	Details	Due
	📝 **ESRI: Basics of Geographic Coordinate Systems** (https://ufl.instructure.com/courses/463194/assignments/5376455)	due by 11:59pm
Tue Oct 11, 2022	📝 **Colorize the Cover for your Portfolio** (https://ufl.instructure.com/courses/463194/assignments/5376451)	due by 11:59pm
	🚀 **RGB UF** (https://ufl.instructure.com/courses/463194/assignments/5376432)	due by 11:59pm
	📝 **Illustrator: Designing a Monogram** (https://ufl.instructure.com/courses/463194/assignments/5376476)	due by 11:59pm
Tue Oct 18, 2022	📝 **Type Effect with Clipping Mask** (https://ufl.instructure.com/courses/463194/assignments/5376497)	due by 11:59pm
	🚀 **Typography Quiz** (https://ufl.instructure.com/courses/463194/assignments/5376449)	due by 11:59pm
Tue Oct 25, 2022	📝 **Creating a Google Map** (https://ufl.instructure.com/courses/463194/assignments/5376453)	due by 11:59pm
	📝 **Extracting data from a Graph** (https://ufl.instructure.com/courses/463194/assignments/5376469)	due by 11:59pm
	🚀 **Florida Hand Drawn Map** (https://ufl.instructure.com/courses/463194/assignments/5376436)	due by 11:59pm
Tue Nov 1, 2022	📝 **Make a Story Map** (https://ufl.instructure.com/courses/463194/assignments/5376483)	due by 11:59pm
	🚀 **What's wrong with these maps?** (https://ufl.instructure.com/courses/463194/assignments/5376440)	due by 11:59pm
Tue Nov 8, 2022	📝 **ESRI: 3D Visualization Using ArcGIS Pro** (https://ufl.instructure.com/courses/463194/assignments/5376454)	due by 11:59pm

Date	Details	Due
	📝 **ESRI: Labeling Features Using ArcGIS Pro** [(https://ufl.instructure.com/courses/463194/assignments/5376462)](https://ufl.instructure.com/courses/463194/assignments/5376462)	due by 11:59pm
Fri Nov 11, 2022	📅 **Veterans Day** [(https://ufl.instructure.com/calendar? event_id=2597906&include_contexts=course_463194)](https://ufl.instructure.com/calendar?event_id=2597906&include_contexts=course_463194)	12am
Tue Nov 15, 2022	📝 **ESRI: Creating and Sharing Animation in ArcGIS Pro** [(https://ufl.instructure.com/courses/463194/assignments/5376457)](https://ufl.instructure.com/courses/463194/assignments/5376457)	due by 11:59pm
	📝 **ESRI: Getting Started with StoryMaps** [(https://ufl.instructure.com/courses/463194/assignments/5376460)](https://ufl.instructure.com/courses/463194/assignments/5376460)	due by 11:59pm
	📝 **ESRI: Map Design Fundamentals** [(https://ufl.instructure.com/courses/463194/assignments/5376465)](https://ufl.instructure.com/courses/463194/assignments/5376465)	due by 11:59pm
	📝 **Mental Mapping Assignment** [(https://ufl.instructure.com/courses/463194/assignments/5376488)](https://ufl.instructure.com/courses/463194/assignments/5376488)	due by 11:59pm
Tue Nov 22, 2022	📅 **No Class** [(https://ufl.instructure.com/calendar? event_id=2597903&include_contexts=course_463194)](https://ufl.instructure.com/calendar?event_id=2597903&include_contexts=course_463194)	12am
Thu Nov 24, 2022	📅 **Thanksgiving** [(https://ufl.instructure.com/calendar? event_id=2597904&include_contexts=course_463194)](https://ufl.instructure.com/calendar?event_id=2597904&include_contexts=course_463194)	12am
Tue Nov 29, 2022	📝 **Revisting my Resume** [(https://ufl.instructure.com/courses/463194/assignments/5376492)](https://ufl.instructure.com/courses/463194/assignments/5376492)	due by 11:59pm
Tue Dec 6, 2022	📅 **All work DUE!!!!** [(https://ufl.instructure.com/calendar? event_id=2597825&include_contexts=course_463194)](https://ufl.instructure.com/calendar?event_id=2597825&include_contexts=course_463194)	12am
	📅 **Last Day of Class** [(https://ufl.instructure.com/calendar? event_id=2597827&include_contexts=course_463194)](https://ufl.instructure.com/calendar?event_id=2597827&include_contexts=course_463194)	12am

Date	Details	Due
	🚀 **Course Evaluation** [(https://ufl.instructure.com/courses/463194/assignments/5376448)](https://ufl.instructure.com/courses/463194/assignments/5376448)	due by 11:59pm
	🚀 **Final Exam** [(https://ufl.instructure.com/courses/463194/assignments/5376447)](https://ufl.instructure.com/courses/463194/assignments/5376447)	due by 11:59pm
	📝 **Final Portfolio** [(https://ufl.instructure.com/courses/463194/assignments/5376471)](https://ufl.instructure.com/courses/463194/assignments/5376471)	due by 11:59pm
	📝 **GroupMe Activity** [(https://ufl.instructure.com/courses/463194/assignments/5376473)](https://ufl.instructure.com/courses/463194/assignments/5376473)	
	📝 **Peer Review** [(https://ufl.instructure.com/courses/463194/assignments/5376490)](https://ufl.instructure.com/courses/463194/assignments/5376490)	