

# GIS 3001C - Geovisualization Map Design

***Primary Course Instructor: Md. Shamsudduha Sami***

**Office Hours:** Tuesday 1.00 AM - 3.00 PM or by appointment.

**Office Location:** 1215 Turlington Hall. E-mail to arrange a Zoom meeting if off-campus. Join in Zoom (only by appointment) using the link: <https://ufl.zoom.us/j/3958278701>

**Email:** [sami.md@ufl.edu](mailto:sami.md@ufl.edu) (Please communicate for any queries)

***All lectures and materials will be provided via Canvas.***

## Course Description

This course is about data visualization and cartographic design. The major objective of the course is to learn how to create and style your maps and graphs. This is a great opportunity and complements your analytically focused GIS courses. 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 the major principles of good cartographic design.
  - Symbolization, map elements, generalization, map projection, color use, visualization, etc.
- Understand significant principles of data's visual communication through 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.
- Use GIS software to construct maps professionally (for publication, presentation, or research project, etc.) and in their daily lives (for a website, etc.)

- Have better appreciation for the maps 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 data sources 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 understanding and familiarity with ArcGIS will be beneficial.

## Course Resources

There is no required text for this course. All course material will be provided on the eLearning Platform (Canvas). Instructional materials for this course consist of only those materials specifically reviewed, selected, and assigned by the instructor(s). The instructor(s) is only responsible for these instructional materials.

## 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 course is designed to maximize your hands-on experience, as mastering GIS and Graphic Design is challenging and requires a significant time investment. These fields are intricate, blending technical skills with creative vision, and the best way to learn is through active engagement and practice. You must allocate ample time to work on your assignments and projects. The more effort and time you dedicate to refining your submissions, the more proficient you will become. It's essential to start working on assignments early and avoid procrastination. Rushing through your work, especially at the last minute, often produces subpar results, hindering your learning and development in these complex fields.

***The ultimate aim of this course is for you to create work that you are not only satisfied with but also proud to include in a professional portfolio.*** Please use office hours to get help.

## Assignment Submission Policies

All labs, quizzes, and discussion board prompts will be available from the beginning of the semester, allowing students to plan ahead and complete assignments at their own pace. There is no penalty for late submission of labs and quizzes; however, weekly discussion boards are time-sensitive and will close at the end of each week. Students who do not participate in the discussion boards during the assigned week will not receive points for that activity. While early submissions are welcome, please note that the final exam will only become available during the last week of the semester.

## Final Exam

The final exam will follow a **quiz format** similar to some of the assignments that you will complete for different modules. It will be **open book/notes/internet**; however, collaboration with classmates or AI is strictly prohibited. The questions will cover the modules that you will study for the semester. The exam will be available in the last week of the semester.

## Grading

Grades are assigned using 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: 50% (Total 250 points)
- Portfolio Project: 20% (Total 50 points)
- Module Quizzes: 10% (Total 48 points)
- Final Exam: 10% (Total 50 points)
- Participation (Discussion Boards): 10% (Total 160 points)

## Academic Honesty

UF students are bound by The Honor Pledge which states “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Conduct Code specifies a number of behaviors that are in violation of this code and possible sanctions. [See the UF Conduct Code website for more information](#). If you have any questions or concerns, please consult with the instructor in this class.

## Campus Resources

Resources are available on campus for students with personal problems or who need a clearer career and academic goals that interfere with their academic performance. These resources are available on campus for students. These resources include:

### **Health and Wellness:**

*U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center:* [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

*Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#)

*University Police Department:* [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

*UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).

*GatorWell Health Promotion Services:* For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-273-4450.

### **Academic Resources:**

*E-learning technical support:* Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

[Career Connections Center:](#) Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

[Library Support:](#) Various ways to receive assistance with respect to using the libraries or finding resources. Call 866-281-6309 or email [ask@ufl.libanswers.com](mailto:ask@ufl.libanswers.com) for more information.

[Teaching Center:](#) 1317 Turlington Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

[Writing Studio:](#) Daytime (9:30am-3:30pm): 2215 Turlington Hall, 352-846-1138 | Evening (5:00pm-7:00pm): 1545 W University Avenue (Library West, Rm. 339). Help brainstorming, formatting, and writing papers.

*Academic Complaints:* Office of the Ombuds; [Visit the Complaint Portal webpage](#) for more information.

*Enrollment Management Complaints (Registrar, Financial Aid, Admissions):* [View the Student Complaint Procedure webpage for more information](#).

### **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 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>. If you buy it through the link, it will not only give you the Adobe Suite but will also make it available on UF Apps. Another option is signing 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. This legislation requires that all students with disabilities be guaranteed a learning environment that reasonably accommodates their disabilities. If you believe you have a disability requiring accommodation, don't hesitate to contact Student Services before bringing your request to the instructor.

## Grade Cutoffs

92.0 - 100%	A (4.00)
90.0 - 91.9%	A- (3.67)
87.0 - 89.9%	B+ (3.33)
81.0 - 86.9%	B (3.00)
80.0 - 80.9%	B- (2.67)
77.0 - 79.9%	C+ (2.33)
71.0 - 76.9%	C (2.00)
70.0 - 70.9%	C- (1.67)
67.0 - 69.9%	D+ (1.33)
61.0 - 66.9%	D (1.00)
60.0 - 60.9%	D- (0.67)
0 - 59.9%	E (0.00)

See link for more information: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies>

## Course Summary:

Date	Details	Due
Mon Jun 30, 2025	<a href="#">Welcome to "Geovisualization Map Design"</a>	12am
Tue Jul 1, 2025	<a href="#">Lab Setup</a>	due by 11:59pm
Sun Jul 6, 2025	<a href="#">AI Interview</a>	due by 11:59pm
	<a href="#">Course Intro Quiz</a>	due by 11:59pm
	<a href="#">Graphics Quiz</a>	due by 11:59pm
	<a href="#">Job Ads</a>	due by 11:59pm

	<a href="#">Make Your Own Social Media Banner Graphic</a>	due by 11:59pm
	<a href="#">Spatial Thinking</a>	due by 11:59pm
	<a href="#">Spatial Thinking Quiz</a>	due by 11:59pm
	<a href="#">Tell Me about Yourself Quiz</a>	due by 11:59pm
	<a href="#">Week 1 - Introductions</a>	due by 11:59pm
	<a href="#">Week 1 - Professional Development</a>	due by 11:59pm
	<a href="#">Week 1 - Spatial Thinking and Graphics</a>	due by 11:59pm
	<a href="#">Your Resume</a>	due by 11:59pm
Sun Jul 13, 2025	<a href="#">Choropleth Mapping</a>	due by 11:59pm
	<a href="#">ESRI's Make a Map with ArcGIS Pro</a>	due by 11:59pm
	<a href="#">ESRI: Basics of Geographic Coordinate Systems</a>	due by 11:59pm
	<a href="#">Make a simple map with ArcGIS Pro</a>	due by 11:59pm
	<a href="#">Projections and Coordinate Systems Quiz</a>	due by 11:59pm
	<a href="#">Week 2 - Illustrator and Choropleth Mapping</a>	due by 11:59pm
	<a href="#">Week 2 - Mapping</a>	due by 11:59pm
	<a href="#">Week 2 - Projections</a>	due by 11:59pm
Sun Jul 20, 2025	<a href="#">What is a Map Quiz</a>	due by 11:59pm
	<a href="#">Colorize the Cover for your Portfolio</a>	due by 11:59pm
	<a href="#">ESRI: Getting Started with StoryMaps</a>	due by 11:59pm
	<a href="#">ESRI: Labeling Features Using ArcGIS Pro</a>	due by 11:59pm
	<a href="#">Illustrator: Designing a Monogram</a>	due by 11:59pm
	<a href="#">Make a Story Map</a>	due by 11:59pm
	<a href="#">RGB UF</a>	due by 11:59pm
	<a href="#">Type Effect with Clipping Mask</a>	due by 11:59pm
	<a href="#">Typography Quiz</a>	due by 11:59pm
	<a href="#">Week 3 - Colors</a>	due by 11:59pm
	<a href="#">Week 3 - Fonts</a>	due by 11:59pm
	<a href="#">Week 3 - StoryMaps</a>	due by 11:59pm
Sun Jul 27, 2025	<a href="#">COVID County Impact Infographic</a>	due by 11:59pm

	<a href="#">Creating a Google Map</a>	due by 11:59pm
	<a href="#">ESRI: Map Design Fundamentals</a>	due by 11:59pm
	<a href="#">Extracting data from a Graph</a>	due by 11:59pm
	<a href="#">Florida Hand Drawn Map</a>	due by 11:59pm
	<a href="#">Mental Mapping Assignment</a>	due by 11:59pm
	<a href="#">Week 4 - Infographics and Data Extraction</a>	due by 11:59pm
	<a href="#">Week 4 - Mental Maps</a>	due by 11:59pm
	<a href="#">Week 4 - Neogeography</a>	due by 11:59pm
Sun Aug 3, 2025	<a href="#">ESRI: 3D Visualization Using ArcGIS Pro</a>	due by 11:59pm
	<a href="#">ESRI: Creating and Sharing Animation in ArcGIS Pro</a>	due by 11:59pm
	<a href="#">Final Portfolio</a>	due by 11:59pm
	<a href="#">Revisiting my Resume</a>	due by 11:59pm
	<a href="#">Week 5 - Fun with Maps</a>	due by 11:59pm
	<a href="#">Week 5 - Not your typical Maps</a>	due by 11:59pm
	<a href="#">Week 5 - Portfolio</a>	due by 11:59pm
	<a href="#">What's wrong with these maps?</a>	due by 11:59pm
Fri Aug 8, 2025	<a href="#">Course Evaluation</a>	due by 11:59pm
	<a href="#">Final Exam</a>	due by 11:59pm
	<a href="#">Week 6 - Final Exam</a>	due by 11:59pm