

# GEOG 2500: Introduction to GIS

Fall 2024

## 1 Course and Instructor Information

**Course Title:** Introduction to Geographic Information Systems

**Credits:** 4

**Class Time:** Tue/Thu 12:30 PM - 1:45 PM

**Classroom:** ROWE 122

**Lab Time**

- Wed 1:20 PM - 3:20 PM (001 Lab)
- Thu 3:30 PM - 5:30 PM (002 Lab)
- Fri 1:25 PM - 3:25 PM (003 Lab)

**Format:** In-person lecture and lab

**Instructor:** Dr. Dan Wanyama

**Email:** [wanyama@uconn.edu](mailto:wanyama@uconn.edu)

**Telephone:** (860) 486-2728

**Preferred Contact:** Email

**Office Hours:** Tue/Thu 11:00 AM - 12:00 PM, or by appointment (in-person and virtual).

**Virtual Office Hours option:** [WebEx](#)

**Office:** Austin Building Room 426

**Correspondence Policy:** Within 24 hours on weekdays; 48 hours on weekends

**Teaching Assistant:** Daniel Kraemer

**Teaching Assistant Email:** [daniel.kraemer@uconn.edu](mailto:daniel.kraemer@uconn.edu)

## 2 Course Materials

### 2.1 Required Materials

This course will focus primarily on ESRI's ArcGIS Pro, which is an improved, more user-friendly, and more advanced version of the ArcGIS Desktop software. The ArcGIS software is provided for you in the Geography Department's GIS lab (AUST 439). Your Husky One Card can be used to provide you access to the GIS lab if the door is locked.

NOTE: If you'd like ArcGIS installed on your personal machine, you can utilize a student license of the software. You will receive an invitation via your UConn email with detailed instructions on how to download, install, and activate ArcGIS Pro using your net ID and password. The link to download ArcGIS Pro using your UConn NetID is [available here](#). If you run into issues installing and licensing ArcGIS, please contact Richard Mrozinski ([mrozinski@uconn.edu](mailto:mrozinski@uconn.edu)) by email. Be sure to include the course number in your email, your instructor's name, and please articulate that you need help installing ArcGIS Pro.

There is also a web-based Windows 10 virtualized environment that you can utilize to use ArcGIS called [AnyWare](#). I'll note that ArcGIS runs incredibly slow on AnyWare.

## 2.2 Required Text

Bolstad, Paul (2023). GIS Fundamentals: A First Textbook on Geographic Information Systems, 7th ed., XanEdu, ISBN: 9780971764750.

Potentially helpful, but not required, textbooks include:

- GIS Tutorial 1: Basic Workbook by Wilpen L. et al. 2016.
- ESRI Guide to GIS Analysis Volume 1: Geographic Patterns & Relationships by Andy Mitchell. 1999.
- ESRI Guide to GIS Analysis, Volume 2: Spatial Measurements and Statistics by Andy Mitchell. 2005.

*When appropriate, additional course readings may be made available via HuskyCT.*

## 3 Catalog Description

Fundamental principles of geographic information systems (GIS). Topics include history of the field, components of a GIS, the nature and characteristics of spatial data, methods of data capture and sources of data, database models, review of typical GIS operations and applications. Laboratory exercises provide experience with common computer-based systems.

## 4 Course Structure

This course will be primarily composed of lecture, **11 hands-on lab assignments, 3 exams, in-class activities** (including group work), and **class participation activities**. A summary of the course grading is included below. Hands-on lab assignment materials will be posted on HuskyCT following the course schedule that is outlined in the following section. Generally, you will have one week to complete each assignment. Due dates for each assignment will be announced when they are assigned on HuskyCT. All due dates are subject to change depending on the overall progress of the class. The three exams will be comprised primarily of multiple choice, true/false, matching, and short essay type of questions. **The exams are computer-based but will be taken in-person in ROWE 122. I do not offer remote exams.** I will hold one review session (for Exam 1) for you to have an idea of how I set my exams. Please note that I do not post my review slides. Exams 1 and 2 will each account for 10% of your final grade while Exam 3 (Final Exam) will account for 15% of the grade. **If you miss an exam, I'll allow you to make it up. However, the make-up exam will be a more difficult version of the original.** Missing exams is therefore discouraged. In-class activities will mainly involve working in groups to complete assigned ESRI web training modules. **All group members are expected to participate. Any member who fails to take part will be assigned a 0 grade for the activity.** Class participation activities will be administered at the end of class and will include you writing key points learnt from the class that day or an answering a question related to GIS.

## 4.1 Course Schedule

Changes to the schedule may be necessary, but it is my intention to keep changes to a minimum. All changes will be announced in class and posted on the course website. It is your responsibility to stay apprised of changes to the course schedule.

Week	Dates	Lecture	Readings	Labs
1	Tue 08-27 & Thu 08-29	Introduction to GIS	Ch. 1 p1-21	NO LAB THIS WEEK
2	Tue 09-03 & Thu 09-05	GIS Data Models and Map Basics	Ch. 2 p39-60	Lab 1 (Web Browsing & Intro to ArcGIS Pro)
3	Tue 09-10 & Thu 09-12	Map Projections and Georeferencing	Ch. 3	Lab 2 (Getting Data & Displaying Themes)
4	Tue 09-17 & Thu 09-19	Geographic Databases, Cartography, and Data Classification	Ch. 4 p168-175 & Ch. 8	Lab 3 (Working with Tables & Map Projections)
5	Tue 09-24 & Thu 09-26	Exam 1 Review (Tue), Exam 1 (Thu)	None	NO LAB THIS WEEK
6	Tue 10-01 & Thu 10-03	Geospatial Collections I: Geospatial Data Sources, Entry, and Digital Data	Ch. 4 p147-167 & 7 p293-323	Lab 4 (Creating and Editing Digital Data)
7	Tue 10-08 & Thu 10-10	Geospatial Collections II: Global Positioning Systems (GPS)	Ch. 5	Lab 5 (Cartography: Presenting Spatial Information)
8	Tue 10-15 & Thu 10-17	Geospatial Collections III: Remote Sensing	Ch. 6	Lab 6 (Feature Selection & Analysis of Spatial Relationships)
9	Tue 10-22 & Thu 10-24	Spatial Analysis I: Vector Data Analysis	Ch. 9	Lab 7 (Spatial Joins & Proximity Operations)
10	Tue 10-29 & Thu 10-31	Exam 2 Review in Groups (Tue), Exam 2 (Thu)	None	NO LAB THIS WEEK
11	Tue 11-05 & Thu 11-07	Spatial Analysis II: Raster Analysis	Ch. 10	Lab 8 (Displaying Raster Data & Digital Terrain Analysis)
12	Tue 11-12 & Thu 11-14	Terrain Analysis	Ch. 11	Lab 9 (Spatial Analyst & Raster Analysis)
13	Tue 11-19 & Thu 11-21	Selected Topics: Spatial Estimation	Ch. 12	Lab 10 (Spatial Interpolation)
15	Tue 12-03 & Thu 12-05	Spatial Data Quality and Metadata	Ch. 14	Lab 11 (Suitability Mapping)
16	Tue 12-10 & Thu 12-12	Final Exam (According to University Schedule)	None	NO LAB THIS WEEK

## 4.2 Grade Calculation

Your grade is determined as follows:

Grade	Range	GPA
A	93-100	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	63-66	1.0
D-	60-62	0.7
F	< 60	0.0

Assignment weighting will follow:

Item	Weight
Lab Assignments	45 %
Exams	35 %
In-class Activities	10%
Class Participation	10 %

## 4.3 Feedback and Grades

I will make every effort to provide feedback and grades within a week or so after an exercise, exam, etc. is turned in. However, **there will be times when this is not always possible.**

## 4.4 Due Dates and Late Policy

Due dates will be announced at the time the exercises are assigned. Late submissions will be penalized 5% per day up to 7 days past the submission deadline, unless you have contacted me and made special arrangements. **An assignment submitted more than 7 days after the submission deadline will be accepted but will be graded out of 50%.** If you know you will miss an assignment due to a scheduled conflict (e.g., conference, University event), please contact me no later than two weeks before the scheduled event. This will enable me to help you with accommodations if needed.

## 4.5 Accommodations for Illness or Extended Absences

Please stay home if you are feeling ill and please go home if you are in class and start to feel ill. If illness prevents you from attending class, it is your responsibility to notify your instructor as soon as possible. You do not need to disclose the nature of your illness, however, you will need to work with your instructor to determine how you will complete coursework during your absence.

If life circumstances are affecting your ability to focus on courses and your UConn experience, students can email the Dean of Students at [dos@uconn.edu](mailto:dos@uconn.edu) to request support. Regional campus students should email the Student Services staff at their home campus to request support and faculty notification.

# 5 Other Important Information

## 5.1 Student Code of Conduct

You are responsible for acting following the University of Connecticut's Student Code. Review and become familiar with these expectations. Particularly make sure you have read the section that applies to you on [Academic Integrity: Academic Integrity in Graduate Education and Research](#).

Cheating and plagiarism are taken very seriously at the University of Connecticut. As a student, it is your responsibility to avoid plagiarism. If you need more information about the subject of plagiarism, use the following resources:

- [Plagiarism: How to Recognize it and How to Avoid It](#)
- [University of Connecticut Libraries' Student Instruction](#) (includes research, citing, and writing resources)

## 5.2 Adding or Dropping a Course

If you should decide to add or drop a course, there are official procedures to follow:

- Matriculated students should add or drop a course through the Student Administration System. Non-degree students should refer to Non-Degree Add/Drop Information located on the registrar's website.
- You must officially drop a course to avoid receiving an "F" on your permanent transcript. Simply discontinuing a class or informing the instructor you want to drop does not constitute an official drop of the course.

## 5.3 Important Dates and The Academic Calendar

There are important dates and deadlines for each semester and session classes that are offered.

**September 9<sup>th</sup>** - Last day to add or drop courses without additional signatures

**November 11<sup>th</sup>** - Last day to withdraw from course

See the [Academic Calendar](#) for more information.

## 5.4 Students with Disabilities

Students needing special accommodations should work with the University's [Center for Students with Disabilities \(CSD\)](#). You may contact CSD by calling (860) 486-2020 or by emailing [csd@uconn.edu](mailto:csd@uconn.edu). If your accommodation request is approved, CSD will send an accommodation letter directly to your instructor(s) so that special arrangements can be made. (Note: Student requests for accommodation must be filed each semester.)

## 5.5 Policy Against Discrimination and Harassment

The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community – students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for maintaining an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate romantic relationships can undermine the University's mission when those in positions of authority abuse or appear to abuse their authority. To that end, and following federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate romantic relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Refer to the Policy against Discrimination, Harassment, and Inappropriate Romantic Relationships for more information.

## 5.6 Sexual Assault Reporting

To protect the campus community, all non-confidential University employees (including faculty) are required to report assaults they witness or are told about to the Office of Diversity & Equity under the Sexual Assault Response Policy. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with the University officials who can help. Refer to the Sexual Assault Reporting Policy for more information.

## 5.7 Resources for Students Experiencing Distress

The University of Connecticut is committed to supporting students in their mental health, their psychological and social well-being, and their connection to their academic experience and overall wellness. The university believes that academic, personal, and professional development can flourish only when each member of our community is assured equitable access to mental health services. The university aims to make access to mental health attainable while fostering a community reflecting equity and diversity and

understands that good mental health may lead to personal and professional growth, greater self-awareness, increased social engagement, enhanced academic success, and campus and community involvement. MH, students can make an appointment with a mental health professional and engage in confidential conversations or seek recommendations or referrals for any mental health or psychological concern. Mental health services are included as part of the university's student health insurance plan and also partially funded through university fees. If you do not have UConn's student health insurance plan, most major insurance plans are also accepted. Students can visit the [Student Health and Wellness-Mental Health](#) office located in Storrs on the main campus in the Arjona Building, 4th Floor, or contact the office at (860) 486-4705 or [online](#) for services or questions.

## 6 Final Thoughts

This document is a roadmap for our semester. We will learn together about geographic information systems. Like all your classes, you will get out what you put into this course. Asking for help from one another and your instructor is important, don't be afraid to ask a question about something you don't know or if you want to check your knowledge about something you think you know.

**If this document is updated, a copy will be supplied to you via HuskyCT and changes will be announced in class.**