Introduction to GIS - Spring 2021

ID 210 - GIS Center, Scribner Library Room 227

Classes W/F - 1:00 pm to 2:50 pm

Field trip TBD

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Office hours: Thursdays | 11 am - 2 pm
By Appt: calendly.com/bettigole

Course Description:

This course introduces students to the concepts and applications of geographic information systems (GIS). GIS technology is used across academic and professional disciplines in the social and biophysical sciences, humanities, engineering, planning, government, and business. This course will apply technological solutions to a diverse array of real-world geospatial problems.

Objectives:

Students will complete this course with knowledge in spatial data acquisition, field data collection with mobile devices, metadata development, data QA/QC, spatial analysis & modeling, static (e.g. paper) & dynamic (e.g. interactive online) cartographic/data visualization techniques. Students will primarily gain expertise using **QGIS**, with opportunities to engage with other software (Google Earth, ArcGIS).

Communication:

In the interest of learning collectively, all course communications will come through **Slack** - *skidmoregis.slack.com*. This includes class announcements as well as questions for the instructor. Notices will be shared in Slack when assignments go live (posted on theSpring). ***The first assignment can only be found on Slack!*** We will spend some time on the first day of class familiarizing ourselves with this tool. While Slack can accommodate direct messaging to the instructor, I would ask that students post questions to the public channels to enable broad sharing of information. During the day, I will attempt to respond as quickly as possible. I will check slack once in the evenings during the week around 9 pm, and will check in once a day over the weekend. For urgent matters please text me at the number listed above. Try to avoid email communication. Part of your participation grade will include engagement over Slack.

Assignments:

All submissions will be electronic and submitted on theSpring unless noted. You will be graded on the accuracy of your responses, assignment formatting, project management & data organization, and visual layout & design. There are no regular readings, but occasional readings will be sourced from journal articles, and GIS related current events (all available on theSpring).

On time assignments will receive a 2 point bump (e.g. go from 86% to 88%). Assignments more than one day late will lose 3 points a day and will not be accepted beyond 1 week from the original due date

Assignments	56%
Midterm	13%
Final	21%
Participation (incl. quizzes)	10%

Learning Goals:

- Solve geographic problems by finding relevant data and using appropriate analytical techniques using geospatial software and Excel.
- Find more than one solution to complex issues. Be flexible and creative!
- Gain proficiency in data and project management techniques
- Learn to collect, manage, and analyze field data
- Communicate lab work through maps, reports, and presentations. Exercise the artistic side of design and cartography.
- Understand practical applications of GIS across a variety of academic and professional disciplines & learn how you may use GIS in your future careers

How Do Problem Sets Work?

You will have four problem sets (two smaller and one each for midterm and final). Some will be group-based, and some individual. These are two part assignments where you will:

1. Outline how you will find the appropriate data and your workflow for acquiring, processing and analysing this data to answer the question.
2. Implement your plan and provide answers to the question, while also updating your workflow outline.

You will be graded on the answers to your question and your workflow, with the understanding that you may need to demonstrate flexibility while implementing your plan.

How Do Videos and Quizzes Work?

Weekly videos will be posted on the Skidmore GIS YouTube channel and on theSpring. These videos are targeted at skills and techniques critical to success in the course. They are short and informal and are designed to prepare you for lab work and assignments.

You will have 9 short, open-book quizzes throughout the semester. If you watch the videos, they should be straightforward.

How Should I Manage my Data?

There are many ways that GIS users manage their project data, but we will standardize project management for this course. Create a desktop folder named GIS_YOURNAME. ***MAKE SURE THERE ARE NOT SPACES IN THE FOLDER NAME OR ANY OF YOUR FILES!*** Within this, for each assignment or class-based lab, create a folder (e.g. assignment_01) and then create two sub-folders: data, and documents. I will occasionally ask to see screenshots of your data organization as part of graded assignments.

Course Guidelines and Helpful Tips:

- It's cold in here and we can't change the temp, bring a sweater or a lap blanket! I've even seen fingerless gloves.
- Bring a set of headphones to class that you can plug into your computer.
- A USB thumb drive can be handy. Rename the drive to your name or the course name.
- Please do not use cell phones or non-GIS websites, except when asked to do so for class assignments.
- Classes are workshop oriented - I'll try to avoid lecturing, and instead focus on the application of the GIS software
- Finally, this whole GIS thing isn't super intuitive. **Please work together and help each other out** (unless specified otherwise), while keeping labs/exams your own work.

Commonly Used Resources:

- GIS network drive - IntroGIS, GIS Library, GIS Projects
- Other Skidmore cloud storage: Google Drive, datastor, OneDrive, Box
- Slack tutorial
- Skidmore GIS YouTube Channel
- Online GIS resources: ArcGIS Online; Google My Maps; NYS GIS Clearinghouse; NRCS Geospatial Data Gateway; National Map; USGS Earth Explorer; US Census data; CalTopo

Academic Integrity and the Honor Code:

As students of Skidmore College you will be held to the academic and ethical standards outlined in the Academic Integrity Handbook. You should take a moment to review this handbook, in particular the sections on Definitions and Guidelines and the Academic Integrity Checklist. It is your responsibility to become familiar with the standards of Academic Integrity at Skidmore, and violations will not be tolerated in this course.

Grading

During Fall 2020 semester, students who opt for the S/U mode of grading will earn the grade of "CR" (credit) if they receive a C-, D+, or D for their coursework.

Academic Services:

The Office of Student Academic Services (located on the first floor of the Starbuck Center) offers a wide variety of services to improve academic skills and help students take full advantage of the academic opportunities available at Skidmore. For example, curret services include (but are not limited to): peer tutoring; one-on-one or small group academic support; support for students with disabilities; ESL support (including additional professional tutoring support to the Writing Center); support to some studennts on waivers, returning from medical leaves, and recipients of Unsatisfactory Work Notices.

If you are a student with a disability and believe you will need academic accommodation, you must formally request accommodation from Meg Hegener, Coordinator for Student Access Services. You will also need to provide documentation which verifies the existence of a disability and supports your request. For further information, please call 580-8150 or stop by the office of Student Academic Services in Starbuck Center.

Title IX Statement and Reporting Responsibilities:

Skidmore College considers sexual and gender-based misconduct to be one of the most serious violations of the values and standards of the College. Unwelcome sexual contact of any form is a violation of students' personal integrity and their right to a safe environment and therefore violates Skidmore's values. Sexual and gender-based misconduct is also prohibited by federal regulations. Skidmore College faculty are committed to supporting our students and upholding gender equity laws as outlined by Title IX. If a student chooses to confide in a member of Skidmore's faculty or staff regarding an issue of sexual or gender-based misconduct, that faculty or staff member is obligated to tell Skidmore's Title IX Coordinator or Title IX Deputy Coordinator. The Title IX Coordinator or Deputy Coordinator will assist the student in connecting with all possible resources for support and reporting both on and off campus. Identities and details will be shared only with those who need to know to support the student and to address the situation through the college's processes. If the student wishes to confide in a confidential resource, The Counseling Center Staff, Health Services, and Victim Advocates are all options available.

More information can be found at Skidmore's Sexual and Gender-Based Misconduct Resources and Information or by contacting the Title IX Coordinator or Deputy Coordinator.

COVID-19 Specific Guidelines

Learning Pods: All students will sign up for a learning pod with one of our GIS Center student lab assistants. Pods will be assigned during the first week. You will meet at least once a week (in person or zoom) for a minimum of 30 minutes, but lab assistants will be available for an entire hour for your pod. These pods are designed to foster collaborative learning and problem solving. Group project work will take place within pods.

Hybrid Class Structure: For our first two classes we will all be remote. I will try to largely keep classes in-person, but we will occasionally need to meet over Zoom. All classes **will be recorded for asynchronous learning,** although it is my preference that all students participate synchronously (in-person or zoom if we're remote). A lab assistant should be on-call to help answer questions whether in person or over zoom.

Use of the GIS Center: Unlike in the past, the lab **will not be open to the public**. You will be on a list held by library staff at the front desk. You will need to check in en route to class and anytime you head to the lab. You do not need an appointment for either class or lab-time, although you WILL need an appointment if you choose to remain in the library after class/lab.

Office Hours: Charlie will be available for ad hoc meetings on Thursdays from 11 am - 2 pm and scheduled meetings throughout the week. Signup for meeting times (including during lab hours) with calendly.com/bettigole. Zoom will be the preferred method, but meeting in-person in the lab is occasionally possible.

Open Lab: The lab will be staffed when possible by our student lab assistants. You must **sign up in advance** for time slots as space is limited to 10 students at a time. Schedule and signup

Personal Computers: It is highly recommended that you use a personal laptop computer for this class. If you do not have a personal computer, Charlie will work with you to find a solution. You will be asked to install QGIS software on your machine, which works with both Mac and PC. You will NOT be allowed to use the lab computers, as they will be locked for use by the advanced GIS class. All PC's on campus have QGIS installed, so you should have access to those on the Library 1st floor and Case.

NO Food or Drink: Food and drink will not be allowed in class. **Even if you need to drink some water** (and thus lower your mask), please step outside the lab.

Desks and Workstation Cleaning On your way into class, you'll sanitize your hands and grab a wipe. You'll wipe down your desk area. At the end of class, you will be dismissed four at a time, starting at the back of the class. Again, you will grab a wipe, wipe down your surfaces, and then hand-sanitize on your way out the door.

Masks Masks are mandatory. You will not be admitted upstairs without a properly fitting mask. You will be asked to leave class if you are not using a mask. To the best of your abilities, you will also maintain a six foot distance from all other students in the class.

Illness If you are feeling ill, even more so than in the past, **please do not come to class**. Participate over Zoom synchronously, or watch the recordings.

If We Have To Go Online: In the event that we need to temporarily/permanently shift the semester online, this course will shift to a mix of synchronous and asynchronous modules. Much of the material will become available as pre-recorded videos, but we will still maintain shorter, but active live Zoom sessions, paired with expanded online office/lab hours.

Seating charts and attendance: You will keep the same seats throughout the semester. Attendance is important but my primary concern at this time is your health and well-being. I ask that you only miss class when necessary (no explanation is needed). If you do need to miss class, I will work with you to the extent possible.

theSpring and Zoom Classes: I will post Zoom recordings of class to theSpring. Please give me a hard time if you notice I haven't done so right after class.

Zoom Code of Conduct: We'll build this together in the first day of class.