

GEOG 377: Introduction to Geographic Information Systems

Summer Semester, 2017

Instructor

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Virtual Office Hours: TU 12:30 pm – 2:30pm CST; TU 5pm – 7pm CST

Note

- Please email at least 24 hours ahead to schedule one 15-minute appointment during the office hours with your instructor.
- Virtual Office Hours Link: <https://zoom.us/j/8734868550>
- If you can't make the scheduled appointment, please inform the instructor as early as you can to reschedule or cancel the meeting.

Course Overview

Welcome to Geography 377: An Introduction to Geographic Information Systems!

Geographic Information Systems (GIS) is a technological tool that can be applied to a wide variety of fields spanning, academia, business, government, and non-profit. For example, GIS is used in medical research to track the diffusion of viruses. It is used in the transportation industry to map efficient routes for the delivery of packages. It is used by environmental scientists in the study of human's effects on habitat loss of certain species. Urban planners also use it to analyze land use or zoning requirements. The field of marketing uses GIS to decide where to build another big box store based on the geographic locations of its shoppers.

Many of us use GIS daily (and likely don't even think about it!) to get from point A to point B with a mapping app on our mobile phones. As you can see, GIS is an incredibly useful tool that can be applied to a variety of disciplines. This course will introduce you to how GIS works, what spatial data is all about, as well as a variety of analysis tools that are used with spatial data. Finally, we will finish up the course with a look at GIS applications in both the physical and human geography fields.

Course Learning Objectives

Upon completion of the course modules, the student is expected to:

- Identify the basic structures, concepts, and theories of GIS
- Gain hands-on experience with common GIS operations

Course Materials

- **Textbook:** *There is no required textbook in this course.*
- **Recommended and Additional Reading Material:** Additional reading material will be provided as needed in the modules.

What is expected of you (the student)

You must actively participate throughout the course. You should maintain regular contact with your instructor and log on daily to keep up with the latest postings. Your contributions should be professional, timely, substantive, positive, and energetic. You should complete all course readings, assignments, and quizzes on time. If you face any personal or professional difficulties or require accommodation for a disability, please let me know as soon as possible.

Individual assignments must represent your work and must not be byproducts of a joint work effort.

Most of all, you are expected to take advantage of the resources that are offered in the course and do your best to overcome any obstacles to learning you encounter. In this course and learning programming generally, *you will fail* from time to time. Everyone does. The trick is to pick yourself up and try again rather than getting discouraged. And ultimately, the hope is that you will not just succeed, but *have some fun* in the process.

What you can expect of me (the instructor)

I try to bring passion and enthusiasm to the topics I teach. I intend to lay out expectations in a clear and concise manner through weekly (or more frequent) communications, and will monitor your grades and discussion posts as they come in. Occasionally, you will see me post in class discussion forums in answer to questions or to contribute to a particularly interesting conversation. I will be as responsive as I can to student e-mails; typically, this means I will get back to you within 24 hours (Mon-Fri). Please try to email by Friday, otherwise, I may not get back during the weekend. If for some reason I'm unable to respond to messages within 24 hours, I will set a vacation responder. Barring the unforeseen, we will provide feedback and scores on all assignments within 7 days after they are submitted.

Communication

Course communications will occur mainly through e-mail. I will send all course e-mails through Canvas. You can have course e-mails forwarded to any address you'd like by going into your Canvas profile and adding another e-mail address. Your wisc.edu address should be automatically added. (Canvas should be easy to use). You may e-mail me through Canvas or any e-mail program. If you send me a message from outside of Canvas, please include "Geog 377" somewhere in the subject line.

I will also hold virtual office hours two hours per week through the virtual meeting platform Zoom (see the top of Page 1). Please try to attend my office hours to get questions answered about lecture material, quizzes, and the course in general to for questions regarding the labs. Attending office hours helps you get your questions answered more quickly and thoroughly, and helps us spend less time answering the same questions via e-mail over and over.

Please do not attempt to contact either of us in any way other than our wisc.edu addresses, Canvas, or Zoom.

Course Software

The examples and exercises require specific software, as described in the orientation section of the course. One piece, ArcGIS, will run only on the Windows operating system, and therefore the course assumes students are using a Windows computer. If you use another operating system for part of the course, please remember that it will not work for some topics and that you will need to have access to a Windows computer properly configured with the course software for those topics.

Course Assignments

Mandatory Virtual Meeting with Instructor

Every student is required to meet with the instructor in the mandatory virtual meeting via Zoom during **week 2**. The purpose is for students to know how to contact the instructor online (other than just email) and learn how it can be used for us to communicate better (sharing screens, etc). The meeting will be about **5 minutes** in length, and there will be various time options available. After this initial meeting, students can make a Zoom appointment with instructor during online office hours, but this is not required.

Quizzes

There will be several text-based quizzes, usually consisting of multiple-choice questions and short answers, based on the lecture material. The quiz period **closes at midnight one week after the day of opening**. Once you begin a quiz, you will have **60** minutes to complete it.

NOTE: Students may use course materials, books and internet resources to answer quiz questions. However, they may not consult with other individuals either in person by other means (such as the internet).

Lab Assignments

Labs assignments are designed to apply the lecture material to hands-on programming. In addition to lecture notes, you may use the course text, recommended readings, and any other resources you find online to complete your labs. You *may* copy code you find online if it is legally permissible for you to do so, you give appropriate credit to the original author in

code comments, AND a substantial part (>50%) of the final solution is your own creation. Keep in mind that it is up to you to decide whether to master the skills taught by the labs; failing to do so will only hurt you in the long run. Each lab will take 3-4 hours to complete, so please plan accordingly.

Course Survey

There will be a course survey open throughout whole semester. The purpose of the survey is to help us to understand your learning experiences and investigate ways to improve this course for future learners. Your responses will be confidential, and we encourage your participation to make this program better!

Late Assignments

Late lab assignments will be accepted, but are penalized **10%** per day, including weekends. Assignments will not be accepted more than 4 days after the due date. If you cannot submit a lab by the deadline because of a valid excuse or emergency, you must contact the TA before the deadline. Late quizzes will not be allowed without a prior excuse.

Grading

| Assignments | Percentage of Grade |
|---|---------------------|
| Mandatory Virtual Meeting with Instructor | 4% |
| Quizzes (6) | 24% |
| Lab Assignments (6) | 72% |

Grade Assignment:

Listed below are the minimum percentages required for each letter grade, after rounding.

| | | | |
|----|-------|---|-------|
| A | > 90 | C | 70-77 |
| AB | 87-90 | D | 60-70 |
| B | 80-87 | F | < 60 |
| BC | 77-80 | | |

Requests for grade changes must be submitted in writing (via email) within 24 hours of receiving your feedback.

Grade Point Average:

Please be advised that a minimum grade-point average of 3.00 for all graduate level coursework done at the University is required for graduation and to maintain good academic standing. In other words, a student who completes all course requirements for a degree program but who

does not earn at least a 3.00 grade-point average (in all graduate courses taken) will not be awarded the degree by the University.

Plagiarism: Academic Integrity

All assignments must be completed on your own; plagiarism is not tolerated. Plagiarism is defined as copying someone else's work and giving the impression that it was created by you. Note that in the open-source software world, this works a little differently than when writing papers. As noted above, you *may* copy someone else's code you find online, provided any license included with the code allows you to do so, you give proper credit to the original author, AND a substantial part of the final product is still your own work. You will often find that you *have to* change and adapt others' code to your own purposes; indeed, this is itself a programming skill. What we will not tolerate is receiving identical copies of a lab solution from multiple students; this will result in a 0 on the assignment for all students involved and disclosure of the impropriety to the Department and University.

Canvas Technical Requirements

| | |
|---|---|
| Operating System | Windows 7 or newer; Mac OS X 10.6 or newer; ChromeOS, Linux |
| Mobile Operating System Native App Support | iOS 7 and newer Android 4.2 and newer |
| Processor | 1 GHz or higher |
| Memory | 256 MB of RAM |
| Hard Drive Space | 500 MB free disk space |
| Browser | <ul style="list-style-type: none"> ● Internet Explorer 11 and Edge ● Chrome 50 and 51 ● Safari 8 and 9 ● Firefox 46 and 47 (Extended Releases are not supported) ● Flash 20 and 21 (used for recording or viewing audio/video and uploading files) <hr/> <p>To determine if your browser fits this criteria and for advice on downloading a supported version, please refer to the following Canvas Knowledgebase article.</p> |
| Plug-ins | Adobe Reader [Download from Adobe] Flash Player [Download from Adobe] |
| Additional Software | Microsoft Office (2003 or later) iTunes/QuickTime |
| Internet Connection | Broadband (cable or DSL) connection required |
| Printer | Access to graphics-capable printer |
| DVD-ROM | Not-required |
| Sound Card, Microphone, and Speakers | Required |
| Monitor | Monitor (Capable of at least 800 x 600 resolution) |

University Policies

The University of Wisconsin - Madison is dedicated to a safe, supportive and non-discriminatory learning environment. It is the responsibility of all undergraduate and graduate students to familiarize themselves with University policies regarding Network Use, Disability Accommodations, Academic Misconduct, Religious Beliefs Accommodation, FERPA, and Copyright.

Network Use Policies

Please read the UW-Madison's [Responsible Use of Information Technology Policy](#).

Disability Accommodations

The University of Wisconsin - Madison is dedicated to a safe, supportive and non-discriminatory learning environment. Students requesting special accommodations should contact the McBurney Disability Resource Center as soon as possible regarding a Verified Individualized Services and Accommodations plan (VISA). Once your accommodation plan has been determined and approved, you will need to contact your professor. Additional information is available at the McBurney Disability Resource Center: <http://www.mcburney.wisc.edu/students/howto.php>.

Academic Misconduct

The University believes that academic honesty and integrity are fundamental to the mission of higher education and of the University of Wisconsin System. The University has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students who violate these standards are subject to disciplinary action. UWS Chapter 14 identifies procedures to be followed when a student is accused of academic misconduct. For additional information, please refer to the section in the Student Handbook entitled Student Academic Disciplinary Procedures.

Please review the [Student Academic Misconduct Policy and Procedures](#) and the [Student Nonacademic Misconduct Policy](#).

Religious Beliefs Accommodation

Board of Regents policy states that students' sincerely held religious beliefs shall be reasonably accommodated with respect to scheduling all examinations and other academic requirements. Students must notify the instructor within the first three weeks of the beginning of classes (or within the first week of summer session and short courses) of the specific days or dates on which they will request accommodation from an examination or academic requirement. For additional information, please refer to [Chapter UWS 22: Accommodation of Religious Beliefs](#).

FERPA

FERPA – the Family Educational Rights and Privacy Act of 1974, as amended – is a federal law that governs the privacy of student educational records, access to those records, and disclosure of information from them. For more information, please refer to [Student Privacy Rights \(FERPA\)](#).