

Geography 170

Our Digital Globe: An Overview of GIScience and its Technology

Online course: canvas (<https://canvas.wisc.edu>)

Instructor:

Prof. Qunying Huang

Email: qhuang46@wisc.edu

Tel: 608-890-4946

Online office hours: Monday 1:00 – 3:00 pm ([canvas](#) online chat or emails)

Office hours: By appointment, 355 Science Hall (welcome to send an email for in person meeting)

Teaching Assistant:

Heather Rosenfeld

Email: hrosenfeld@wisc.edu

Online office hours: Wed 10:00 am – 12:00 pm ([canvas](#) online chat or emails)

Additional office hours: By appointment (welcome to send an email for skype or [canvas](#) online chat meeting)

Basic Course Information:

- This is an online version of the 3-unit face-to-face course that meets twice a week for 75 min/class, not including time that is expected for studying in addition to these 2.5 hours per week. You are expected to put in just as much time in this online offering as you would during the face-to-face offering.
- The course can be accessed at any time during the offering period. The course materials are available through [canvas](#) (UW NetID login required).
- Course materials will be posted on [canvas](#) weekly, or more frequently if necessary.
- When writing an E-mail to us, please be sure to follow the format “G170-LastName Question” in the title, otherwise the email may be deleted as junk mail.
- Response time: We will respond to email and the [canvas](#) discussion board once a day during the week. While I will do my best to stay on top of class related emails, I anticipate that some messages will slip under the radar due to time constraints and the large number of students I teach. If you have sent me an email but have not heard back from me within 48 hours, please send me a follow-up email.

Course Overview:

Geography 170 is an introduction to Geographic Information Science (GIScience). It guides you to explore the tools and technologies for acquiring, analyzing, managing,

and displaying geographic information. This course introduces a variety of geospatial technologies and tools, including geographic information systems (GIS), global positioning system (GPS), remote sensing (RS), spatial analysis, and cartography (the science and art of mapmaking). Although Geography 170 is a non-specialist course, it provides a foundation for various upper-level courses which are specifically about GIS, GPS, RS, Cartography and Web-animated cartography.

Course Learning Outcomes:

- Understand fundamental concepts and knowledge in geospatial fields, such as geospatial data, geographic coordinates, geographic coordinate systems, projection, maps etc.
- Develop the skills to analyze and interpret aerial photos and remote sensing images.
- Develop an appreciation for maps.
- Know how to design and make a map using GIS tools (e.g., ArcGIS online).
- Build a solid foundation for more specialized courses on GIS, Cartography, RS and GPS.
- Become familiar with several widely used geospatial software and tools (e.g., Google Earth).

Course Requirements:

No previous experience with map-making or GIS is required; however, students should be comfortable with basic mathematics and interested in working with maps (both paper and digital), satellite imagery and related products.

Course Materials:

No textbook is required; all course materials (e.g., lecture notes, syllabus, exam review sheets, and updates) will be posted at [canvas](#).

Evaluation:

Your grade will be determined based on your performance on the four online quizzes, three assignments and one final exam. The weights assigned to each component are as follows:

| | |
|-----------------------|-----|
| Online quizzes (4) | 40% |
| Assignments (3) | 30% |
| Final exam (1) | 25% |
| Online discussion (5) | 5% |

Grading Scales:

| | |
|-------------|----|
| 90 - 100% | A |
| 87 - 89.99% | AB |

| | |
|-------------|----|
| 83 - 86.99% | B |
| 80 - 82.99% | BC |
| 70 - 79.99% | C |
| 60 - 69.99% | D |
| < 60% | F |

Online quizzes and the final exam: There will be **four quizzes** throughout the semester. Each quiz is designed to test your knowledge on one or two specific learning modules (see the modules covered by this course below in the Tentative Schedule). There will be one final exam at the end of the semester, which covers all topics of this course.

All quizzes and the exam will open for a **48 hour window** beginning at **11AM (Central time)** on the first day scheduled and closing at **11 AM** on second scheduled (see schedule below). You may log into the quiz or exam at any time during the scheduled window. Once logged into the quiz/exam, you have a set time limit to complete it and turn it in. Otherwise, your quiz/exam will be saved by the computer at the time limit and automatically turned in for you. **No make-ups will be given.**

You are expected to treat the online quizzes and exam as you would in a traditional lecture class - in other words, no cheating of any kind (including plagiarism). I, and other administrators, CAN and DO monitor your quiz and exam logs before, during, and after you have taken the quiz or exam - they can detect patterns consistent with **cheating and have the authority to discuss the matter with you immediately and give you a ZERO if they see fit.** Once you have turned in your quizzes, it is automatically graded by the computer. Your grades are then uploaded to your personal gradebook (Report tab) in the following days. Official grades, answers, and explanations for the exam are provided on the course website about 5-6 days following the exam.

The quizzes and exam may consist of multiple-choice, some T/F, many short answer, and some essay questions. All questions are selected at random from a pool of questions. All answer options for each question are also ordered at random. **Please take note that your exam is unique and completely unlike any other student's exam.** Attempting to cheat on these exams is a waste of time AND against University/course policy.

Assignments: There will be **three assignments** throughout the semester. Each assignment is designed to help you reinforce the concepts learned through the lectures. Within each assignment, you may need to use a geospatial tool (e.g., GIS software) to import, map, visualize or interpret geospatial data. Please note that, each assignment is due at **11 AM CDT** on the indicated due date. If you are unable to complete an assignment by the deadline, the instructor must be noticed at least **1 week** before the deadline. Do not assume you will be granted an extension. Only in extreme cases, such as verified illness, family or personal emergencies, or other extenuating circumstances (accompanied by appropriate documentation), the late submission can be accepted without penalty. Otherwise, a late submission will be

assessed a 10% penalty per 24-hour period beyond the deadline (e.g., 1 day late = -10%, 2 days late = -20%, etc.).

Online discussions: Students are expected to participate in online discussions related to geospatial technologies. You will use the [canvas](#) discussion forum (found on the [canvas](#) site under the **Discussions**). This class covers 5 modules over 14 weeks; for each of the modules the instructor will post a topic on the discussion board, which you will reply to. **To receive full credit (5% of your grade for the class) you must contribute 5 posts of least 100 words each, one for each module.** When each module's required topic is posted you will receive an email reminding you to read it and respond with at least 100 words. Note: In addition to responding to the topics posted by us, you are also encouraged to start new relevant topics and respond to your peers. We have created forums for this purpose that are separate from the required ones.

Tentative Schedule and Due Dates

| Week | Date | Module | Lecture | Quizzes | Assignments |
|------|------|----------------------------------|--|----------------------------|---|
| 1 | 1/22 | Geospatial Data & Representation | Getting started; Introduction to Geospatial Technology | Quiz#1* 2/15 – 2/17 | |
| 2 | 1/29 | | Geographic Information and Representation | | HW#1 given |
| 3 | 2/5 | | Geodetics and Geometrics; Projection | | |
| 4 | 2/12 | | Coordinate Systems; Map Scale | | OnlineDicussion#1 due, 2/12 |
| 5 | 2/19 | GPS | GPS and applications | Quiz#2* 3/8–3/10 | HW#1 due, 2/24; HW#2 given |
| 6 | 2/26 | RS | Aerial Photos and Satellite Imagery | | |
| 7 | 3/5 | | Remote Sensing | OnlineDicussion#2 due, 3/5 | |
| 8 | 3/12 | GIS | Intro to GIS | Quiz#3* 4/12–4/14 | HW#2 due, 3/17; HW#3 given |
| 9 | 3/19 | | GIS Analytics I: Spatial analysis and statistics | | |
| 10 | 3/26 | | Spring recess | | |
| 11 | 4/2 | | GIS Analytics II: Analyzing spatial patterns | | |
| 12 | 4/9 | | Making a Map with GIS I: Map elements, mapping procedures | | OnlineDicussion#3 due, 4/9; HW#3 due, 4/14 |
| 13 | 4/16 | Cartography | Thematic Maps I : Thematic amps, qualitative & quantitative Data | Quiz#4* 5/3–5/5 | |
| 14 | 4/23 | | Thematic Maps II: Qualitative maps | | |
| 15 | 4/30 | | Thematic Maps III: Quantitative maps | | OnlineDicussion#4 due, 4/30 |
| 16 | 5/7 | | Study & Review | Final Exam*: 5/9-5/11 | OnlineDicussion#5 due, 5/7 |

Due Dates

- Quiz#1: 2/15 (11 am CDT) – 2/17 (11 am CDT)

- Quiz#2: 3/8 (11 am CDT) – 3/10 (11 am CDT)
- Quiz#3: 4/12 (11 am CDT) – 4/14 (11 am CDT)
- Quiz#4: 5/3 (11 am CDT) - 5/ 5 (11 am CDT)
- HW#1: 1/29 (11 am CDT) - 2/24 (11 am CDT)
- HW#2: 2/24 (11 am CDT) - 3/17 (11 am CDT)
- HW#3: 3/17 (11 am CDT) - 4/14 (11 am CDT)
- Online discussion #1: due 2/12 (11 am CDT)
- Online discussion #2: due 3/5 (11 am CDT)
- Online discussion #3: due 4/9 (11 am CDT)
- Online discussion #4: due 4/30 (11 am CDT)
- Online discussion #5: due 5/7 (11 am CDT)
- Final exam: 5/9 (11 am CDT) – 5/11 (11 am CDT)

*All Quizzes and the final exam are open for **48** hours starting at **11 AM** (Central time) the first day and closing at **11 AM** (Central time) the third day scheduled. Keep in mind that changes to the syllabus and due dates may occur throughout the semester. If changes need to be made, you will be informed via the course website and news announcement. Please check the course website at canvas to obtain this information.

Scholastic Dishonesty:

Academic honesty and integrity are expected. All work, including assignments, quizzes and exams, must be completed independently. It is expected that the work submitted by a student reflects his or her original ideas and responses.

Submissions that reflect substantially similar work among more than one student, or similar to certain online sources, will be regarded as an act of scholastic dishonesty. As a result, credits will be deducted. Scholarly dishonesty includes: “cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one’s own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas, etc.” Please refer to the “Student Academic Misconduct Policy & Procedures” document produced by Student Advocacy & Judicial Affairs division of the Offices of the Dean of Students for further information.