Geography 170

Our Digital Globe:

An Overview of GIScience and its Technology

Online course: Learn@UW (https://learnuw.wisc.edu/)

Instructor:

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Teaching Assistant:

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Online office hours: M 12:30 -1:30 PM, F 1:30-2:30 PM *(*learn@uw *online chat or emails)*

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 Learn@UW (UW NetID login required).
- Course materials will be posted on Learn@UW weekly, or more frequently if necessary.
- When writing an E-mail to us, be sure to follow the format "G170-LastNameQuestion" in the title, otherwise the email may be deleted as junk mail.
- Response time: We will respond to email and the discussion board once a day during the week.

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 Goals:

- Discover the different fields in GIScience and the related geospatial technologies.
- Build a solid foundation for more specialized courses on GIS, Cartography, RS and GPS.
- Develop an appreciation for maps.
- Become familiar with several widely used geospatial software and tools.

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, including lecture notes, presentation slides and lecture videos will be posted at learn@uw.

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%

Grading scales:

90 - 100%	A
87 - 89.9%	AB
83 - 86.99%	B

80 - 82.99%	BC
75 - 79.99%	C
70 - 74.99%	DC
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 24 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 exam, 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 3-4 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. All assignments should be submitted to ***Dropbox*** on the *learn@uw*. Please note that, each assignment is due at **11:59 PM CDT** on the indicated due date. If you are unable to complete an assignment by the deadline, the instructor must be noticed at least 24 hours 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 on different topics related to geospatial technologies. The topics will be posted on *learn@uw* discussion forum at the beginning of each module (see the tentative schedule below) to spark thought provoking conversion, increase peer interaction and reinforce your understanding of course topics. In addition to respond the topics posted by us, you are also encouraged to start new relevant topics, and respond to the discussions and questions posted by your peers. Every student is expected to contribute at least **five blog entries with each including at least 100 words** to describe your thoughts on the topic throughout the entire semester.

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.

Plagiarism

Plagiarism More specifically, a very important issue with online classes is plagiarism. As defined, plagiarism is the effort to fundamentally use someone else's ideas as your own. Studies show that plagiarism is very common at most universities (including UW-Madison), but is an even bigger problem in online classes since it is easy to copy directly from the website and put those exact words, or most of the words, in an answer. This is a potential problem in the case of the exams with essay questions and in the case of writing assignments. It is essential that you provide references when needed (i.e., you cite information (not just wording) that did not originally come from you) and that your responses are phrased in your OWN, original words. **This also means that "borrowing" parts of other students' responses is TOTALLY and COMPLETELY unacceptable; doing this will result in a ZERO, no questions**

asked. If your Instructor suspects that a part or all of an answer has been plagiarized, the student will be contacted immediately - plagiarized content is given **0 points**.

Please see the example below for clarification

THE QUESTION ASKED:

> How do humans influence species populations and ecosystems?

THE WEBSITE MATERIAL:

> "Increased human population often leads to greater influence on the environment and sharper declines in species and ecosystems. According to the authors of the human footprint study, however, land transformation probably poses the single greatest threat to biodiversity, resulting in habitat loss and/or fragmentation for wild species. Beyond its effects on the nearby area, it can have global consequences, such as worldwide changes in soils and increased demand for fresh water for irrigation.
>
> The authors also found that the greater the human access through roads, rivers, and coastlines, the greater the likelihood of resource extraction, pollution, and the introduction of invasive species. Both human access and land transformation have been fueled by increased power infrastructure (access to fossil fuel and electrical power) over the last century. Throughout most of human history, impact on the environment was constrained by raw human and animal muscle power. But today, one person with a bulldozer can match the power of 300 horses." (The Human Footprint, NASA-EO, 2003)

A PLAGIARIZED STUDENT ANSWER:

> Increased human population can lead to declines in species populations and ecosystems. Land transformation probably poses the greatest threat, resulting in habitat loss and fragmentation for species. While land transformation can affect the nearby area, it can have global consequences, like global changes in soils and increased demand for fresh water for irrigation. Also, the greater the human access through roads, rivers, and coastlines, the greater the likelihood of resource extraction, pollution, and the introduction of invasive species. Both human access and land transformation have been fueled by increased power infrastructure over the last century.

When reading the above example, the instructor cannot tell whether this student learned anything from answering this question, or if they just looked for key words and then copied a few sentences into their answer. This is the main reason why you

must be sure to read the website, think through the information, and then answer the question in your own words. The example below is a good answer. The information is basically the same, but the sentences are not the same as the website sentences. It is obvious when grading this question that the student has thought through the information before answering. Furthermore, a reference is provided to support the student's answer.

AN EXAMPLE OF A GOOD WAY TO REWORK THIS INFORMATION INTO YOUR OWN ANSWER:

> Humans can negatively influence species populations and ecosystems through land transformations. As humans transform previously "wild" lands they may encourage habitat loss or habitat fragmentation, both of which may lead to ecosystem degradation and a decline in species populations. Land transformations affecting large areas may even change an ecosystem's soil properties or alter water resources. Humans can also negatively influence species populations and ecosystems through increased access into "wild" lands as more roads are constructed or rivers and coastal areas are more heavily traveled. (Web reference: The Human Footprint, NASA-EO, 2003, http://earthobservatory.nasa.gov/Study/footprint/)

Please be conscientious of this potential problem as you work through the course, and do not hesitate to contact your Instructor if you have any questions. All students are required to read this syllabus. By doing so and remaining enrolled in this course, you have agreed to uphold our policies concerning academic honesty.

Tentative Schedule

Week	Date	Module	Topics	Quizzes	Assignments
1	1/18	**Geospatial Data & Representation**	Getting started; Introduction to Geospatial Technology	Quiz#1* Feb13 – 14	
2	1/25		Geographic Information and Representation; Map Scale		
3	2/1		Geodetics and Geometrics; Projection		HW#1 given
4	2/8		Coordinate Systems		
5	2/15	**GPS**	GPS and applications	Quiz#2* March 4– 5	
6	2/22	**RS**	Aerial Photos and Satellite Imagery		HW#1 due, 2/28 HW#2 given
7	2/29		Remote Sensing		
8	3/7	**GIS**	Intro to GIS	Quiz#3* April 2 – 3	
9	3/14		GIS Analytics I: Spatial analysis and statistics		HW#2 due, 3/20 HW#3 given
	3/21		**SPRING BREAK**		

10	3/28		GIS Analytics II: Analyzing spatial patterns		
11	4/4		Making a Map with GIS I: Map elements, mapping procedures		
12	4/11	**Cartography**	Thematic Maps I : Thematic amps, qualitative & quantitative Data	Quiz#4* April 30 – May1	HW#3 due, 4/17
13	4/18		Thematic Maps II: Qualitative maps		
14	4/25		Thematic Maps III: Quantitative maps		
15	5/2		Study & Review		
			Final Exam*: May 7-8		

*All Quizzes and the final exam are open for 24 hours starting at 11 AM (Central time) the first day and closing at 11 AM the second day scheduled. It is your responsibility to log into your quiz/exam with enough time to successfully submit by 11 AM on the second day.

Keep in mind that changes to the syllabus may occur throughout the semester. If changes need to be made, you will be informed via the course website. It is your responsibility to check the course website at learn@uw to obtain this information.