

# Geography 215: Introduction to Geographic Information Sciences

**Lecture:**

Mondays and Wednesdays 10:00 – 10:50am  
BOL B40



**Instructor:** Donna G. Genzmer, GISP  
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**Office:** Bolton 420  
**Office Hours:** Mondays and Wednesdays 11:30am – 12:30pm, or by appointment

**Lab sections:**

Lab 801 M 11:00 am – 12:50 pm LAP 271  
Lab 802 T 1:00 pm – 2:50 pm BOL 289  
Lab 803 W 11:00 am – 12:50 pm BOL 289



**Teaching Assistant (Lab):** Chenxi Lin  
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**Office:** Bolton 446  
**Office Hours:** TBA, or by appointment

**Catalog Description**

“Geographic objects, their representation and analysis. Topics include special nature of spatial data; concepts of space, mapping, spatial relationships; and use of geographic information systems. 2 hrs lec, 2 hrs lab. | Prereq: none.”

**Learning Outcomes**

This course is designed as an introductory Geographic Information Science (GIS) course. GIS is a geospatial technology that is widely used in the public and private sector, and in a range of disciplines. Successful students in this course will learn and understand the basic concepts and techniques associated with GIS, will develop knowledge of what a GIS is, how it works, its data structures, operations and applications, and selected current issues. This course emphasizes the understanding and implementation of GIS theories as well as their relevant applications using ArcGIS software in the laboratory. Attendance at both lecture and lab is critical to your success in this course.

Specific outcomes of this course include:

- an understanding of how the techniques of GIS are used by several disciplines to solve spatial problems;
- an understanding of the nature of geographic data, spatial distributions, areal associations, scales of geographic inquiry and the use of Historic geographic data;
- knowledge of the fundamentals of maps, including methods of location, map

projections, map scale, and map symbolization, as well as the different type of maps;

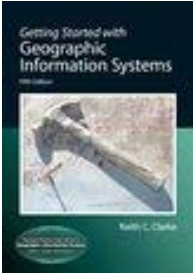
- an understanding of the basic principles of the use of satellite imagery in collecting and analyzing geographic data;
- knowledge of the use of global positioning systems (GPSs) and how they have become integrated into our everyday lives;
- an understanding of the fundamental concepts and uses of GISs and how they act as both an enabling and integrating technology in our society;
- an insight into how spatial analysis is used to solve real-world problems; and
- an appreciation of the wide use of GIS in our society to aid in the solution of everyday problems.

Please read materials several times before class in order to properly grasp the concepts and theories. You will also need to spend sufficient time in the lab to do tutorials and lab assignments, as learning new software is not easy.

**Work Load**

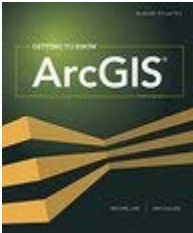
This is a 3-credit course. The in-class time you will spend each week, including both lecture and lab, will be 3.5 hours. For each hour of classroom time, you should anticipate spending approximately 1-3 hours preparing for class or working on assignments. Thus, you should expect to spend approximately 3-10 hours per week outside of class time.

## Course Materials



### **Required Textbook**

*Getting started with Geographic Information Systems*. Keith C. Clarke, Fifth Edition, Prentice Hall. ISBN-13: 978-0131494985\* A copy of the textbook and the lab manual will be available on Reserve in the library.



### **Required Lab Manual**

*Getting to Know ArcGIS, Fourth Edition*. Michael Law and Amy Collins. ESRI Press. ISBN-13: 978-1589483828 Includes 180 day software license.

Available through the UWM Virtual Bookstore <http://uwm.ecampus.com/> or purchase by your preferred method.

All UWM students are eligible for a **free copy of ArcGIS** for their personal computers. Talk to your TA for additional details.

**USB Flash Drive:** for lab data; doesn't need to be big. (These are sometimes called a thumb drive.)

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## Technical Help/UWM Help Desk

Web site: <http://uwm.edu/technology/help/>

Phone: 414-229-4040

Walk-in Help Desk:

Bolton 225 and Library Learning Commons

Submit Online Help Request:

[GetTechHelp.uwm.edu](http://GetTechHelp.uwm.edu)

For a handout on accessing D2L visit:

<http://uwmltc.org/?p=870>

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## Tutoring

**Panther Academic Support Services:**

<http://uwm.edu/pass/>

Has tutoring specific to this course.

## Course Work

### **Exams**

- ✓ Two mid-term exams and one final exam. See course schedule section for the dates. Advance notice will be given if exam date is changed.
- ✓ The exams are closed-book and closed-note, and will consist of true/false and multiple choice questions, based on material from lectures, readings, and labs.
- ✓ **NO make-up exams** will be allowed without emergency reasons, religious observances, or military leave substantiated with written proof. You must contact me as soon as the issue arises.

### **Lab**

Lab is a required component of the course and constitutes a significant portion of your grade for the course. Successful students keep up with lab assignments and turn them in on time, as points will be deducted for late assignments. Please refer to the lab syllabus for further information on lab assignments, grading, and other lab-related policies.

### **Lecture**

Participation is graded. You are expected to submit a short answer weekly to the dropbox. Your short answer will address 1) the least clear concept for the week and 2) something you learned that week, in class or in general. (Week 1 you should submit your information sheets.) The dropbox will be available starting at 10 am Monday and is due Sunday at noon. While the dropbox will close at 10 am Sunday, late submissions will only get half credit.

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## Course Site

The course Desire to Learn (**D2L**) site is located at <http://d2l.uwm.edu/>. To reach the site, simply log in using your Panther ID and password, and then follow the instructions to find the course site. If you need help getting access to the site or to D2L, please use the UWM Help Desk (hours listed at <http://uwm.edu/technology/help/>), which should be your first point of contact for any technical issues you encounter:

***Please check the course D2L site regularly for news, updates, or other important course-related information***

**Assessment (Grading)**

Your final grade for the course will be calculated based on the percentage as below.

Participation	Lecture (5%) Lab (5%)	10%
Exam 1		15%
Exam 2		15%
Final Exam		20%
Lab assignments		40%
	Total	100%

**Grading Scale**

A = 90-100%, A- = 87-89.99%  
 B+ = 83-86.99%, B = 80-82.99%, B- = 77-79.99%  
 C+ = 73-76.99%, C = 70-72.99%, C- = 67-69.99%  
 D+ = 63-66.99%, D = 60-62.99%, D- = 57-59.99%  
 F = 0-56.99%

Grades, once given, are final except in cases of clerical error. A detailed description of the UWM College of Letters and Science Grade Appeal Policy may be found at: <http://uwm.edu/letters-science/advising/answers-forms/policies/appeal-procedure-for-grades>

Students registered on a **credit/no credit option** must achieve a 'C' or better to receive credit. Incomplete grades are given on rare occasion and need instructor approval. An incomplete may be given in lieu of a final grade to a student who has carried the coursework successfully throughout the majority of the semester but whom, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of term work. An incomplete is not given unless you prove to the instructor that you were prevented from completing the course requirements for just cause as indicated above.

**Email**

I may send important course information by email. Thus, it is imperative that you **check your UWM email regularly**.

UWM recommends that you **do not forward your UWM email to a private email account**, because private email providers sometimes block incoming UWM email. If you choose to use a private email account despite this recommendation, it will be your responsibility to set up the account to receive email forwarded from your UWM email account. "I didn't receive the email" is not an acceptable excuse.

Email is the best way to contact me outside of class. Please use your UWM email account to send me emails. I make every effort to respond to emails within 48 hours. If you don't hear from me after that, please forward your original email to me again or come talk to me after lecture. In your email **subject line, please include "Geog 215" and YOUR NAME**.

**Compose** your emails in a professional manner. This is not a text message. End your email with your full name. "[How to Email Your Professor \(without being annoying AF\)](#)" is an excellent resource. Take advantage of the opportunity to hone this skill you will need in the workplace!

**Accessibility**

Your instructors for GEOG215 are committed to making this course accessible to all enrolled. If you need accommodations, please contact the instructor or your TA as soon as possible. We will assist you directly or help you find the services you need on the UWM campus. Your instructors are happy to work with the Accessibility Resource Center (ARC) with respect to your learning accommodations. It is to your advantage to register with ARC at your earliest convenience. See <http://uwm.edu/arc/> for the services provided by the ARC.

### **Additional Course Policies**

This course abides by UWM's official policies on disabilities, religious observations, active military duty, incompletes, discriminatory conduct, academic misconduct, complaint procedures, and grade appeal procedures. See

<http://uwm.edu/secu/wp-content/uploads/sites/122/2016/12/Syllabus-Links.pdf>

There is zero tolerance for cheating, plagiarism, or any other form of **academic misconduct**. Cheating on exams or plagiarism are violations of the academic honor code and carry severe sanctions, including failing a course or even suspension or dismissal from the University. Please refer to UWM's policies at <http://uwm.edu/studenthandbook/student-handbook/student-expectations/uws-14/> for more information on what constitutes academic misconduct.

If you have questions, please speak with me after class, during my office hours, or contact me by email. If you are unable to make it to my office hours, feel free to email me to arrange an alternate time to meet. My office hours are set aside to answer any questions you have and/or to help you understand and learn the course material.

Please do not ask for make-up assignments or extra credit. Please refer to UWM's policy on "special considerations" if you have any questions:  
<http://www4.uwm.edu/secu/docs/other/S29.htm>. Extensions may be granted where circumstances beyond the student's control inhibit the ability to complete work by the due date, and are done only at the discretion of the instructor.

All **electronic devices** must be switched to silent mode during class. This includes cell phones, tablets, laptops, and the like. It is in your best interest that you refrain from using electronic devices during lecture, except for those students wishing to use a laptop or similar device for note-taking purposes only.

***Every day you learn something  
new is a good day!***

**Course Schedule - Lecture** (with textbook chapter reference)

\*See lab syllabus for lab schedule

Week	Date	Content	Textbook (Clarke)	Lab Topic (Textbook: Law & Collins) (point value)	Lab Due Date (point value)
1				<b>NO LAB</b>	
	9/6	L1: Syllabus and Introduction	Chapter 1		
2	9/11	L2: Introduction	Chapter 1	Lab 1: Syllabus and Introductions to ArcMap and ArcCatalog (Ch. 3&4) (15 pts)	due at end of Lab 2 (15 pts)
	9/13	L3: Map projections and coordinate systems	Chapter 2		
3	9/18	L4: Map projections and coordinate systems	Chapter 2	Lab 2: Map Projections & Coordinate Systems (Ch. 6) (15 pts)	due at end of Lab 3 (15 pts)
	9/20	L5: Map projections and coordinate systems	Chapter 2		
4	9/25	L6: GIS data models and data types	Chapter 3	Lab 3: Displaying Data: categorical and quantitative (Ch. 7&8) (20 pts)	due at end of Lab 4 (20 pts)
	9/27	L7: GIS data models and data types	Chapter 3		
5	10/2	L8: GIS data models and data types	Chapter 3	Lab 4: Displaying Data: labeling (Ch. 9) (10 pts)	due at end of Lab 5 (10 pts)
	10/4	L9: GIS data models and data types & Review	Chapter 3		
6	<b>10/9</b>	<b>Exam 1</b>		Lab 5: Creating and Editing Data: Building Geogdatabases and Geocoding (Ch. 11&14) (20 pts)	due at end of Lab 6 (20 pts)
	10/11	L10: AGSL lecture: Library 3rd floor, east wing	Chapter 4		
7	10/16	L11: GIS data input	Chapter 4	Lab 6: Creating and editing features and attributes (Ch. 12&13) (20 pts)	due at end of Lab 7 (20 pts)
	10/18	L12: GIS data input	Chapter 4		
8	10/23	L13: Data management models, database	Chapter 5	Lab 7: Querying data by attribute and location (Ch. 15&16) (20 pts)	due at end of Lab 8 (20 pts)
	10/25	L14: Data management models, database	Chapter 5		
9	10/30	L15: Data management models, database	Chapter 5	Lab 8: Joining and relating tables (Ch. 17) (20 pts)	due at end of Lab 9 (20 pts)
	11/1	L16: Spatial Analysis and Operation	Chapter 6		
10	11/6	L17: Spatial Analysis and Operation	Chapter 6	Lab 9: Geoprocessing (Ch. 18&19) (20 pts)	due at end of Lab 10 (20 pts)
	11/8	L18: Spatial Analysis and Operation	Chapter 6		
11	11/13	<b>Exam 2</b>		Lab 10: <b>Attend something at GIS Day</b> and write a reflection (TBD pts)	due at end of next week's lab period (TBD pts)
	11/15	<b>UWM GIS Day - Meet in AGSL</b>			
12	11/20	L19: Terrain data	Chapter 7	<b>NO LAB</b>	
	<b>11/22</b>	<b>Thanksgiving - No class</b>			
13	11/27	L20: Terrain data	Chapter 7	Lab 11: Learning the Spatial Analyst Extension (20 pts)	due at end of Lab 12 (20 pts)
	11/29	L21: GIS Output (Maps)	Chapter 8		
14	12/4	L22: GIS Output (Maps)	Chapter 8	Lab 12: Creating Map Products (Ch. 10) and Geovisualization (20 pts)	due at end of next week's lab period (20 pts)
	12/6	L23: GIS in Action	Chapter 10		
15	12/11	L24: The Future of GIS	Chapter 11	<b>TENTATIVELY NO LAB</b>	
	12/13	L25: GIS and Ethics	Chapter 11		
16	12/20	<b>Final Exam --12:30-2:30 PM</b>			

\*\*\*Class content can be changed by the instructor during the semester. You will be notified, IN CLASS if any changes are made\*\*\*

 University final exam policy: <http://uwm.edu/registrar/students/final-exam-schedule-information/fall-final-examination-schedule/>

<b>Important Dates<sup>1</sup></b>	
September 4	Last day to withdraw (drop all classes) for the term without charge or for full refund.
September 5	First day of classes. Start of the Late Enrollment Period - \$50.00 late enrollment fee assessed for students enrolling in classes for the first time in the term.
September 8	Deadline for Fall graduation applications for undergraduate students. Submit application via PAWS.
September 18	Last day to add full-term classes, change sections, or change the grading basis for classes (e.g., graded to credit/no credit or audit, or vice versa) without approval. See the One Stop Student Services website for more information.
September 19	Deadline for Fall graduation applications for graduate students. Submit applications via PAWS.
October 2	Last day to drop full-term courses without a "W" on record. Tuition and fees apply.
October 27	Last day to drop or withdraw from full-term courses. Tuition and fees apply.
November 22-26	Thanksgiving Recess - No Classes (UWM offices are open on Wednesday & Friday).
December 14	Last day of classes.
December 15	Study day.
December 16, 18-23	Final Exam Period.
December 17	Graduation Ceremony.
December 23	Last day of the Fall term. Date of degree conferral for Fall graduates.
December 29	Final entry deadline for instructor grading (final grade run date). All grades not entered into PAWS by 4:30 pm will result in a value of NR, or not reported. After this point, all grade entries need to be submitted as a grade change. More information on instructor grading on the <a href="#">Registrar's Office website</a> .

<sup>1</sup> Information obtained from the UWM Registrar's Office: <http://uwm.edu/registrar/students/dates-deadlines/important-dates-by-term/>