

# Geography 241

## Fundamentals of GIS

Department of Geography and Geology  
Syllabus Fall 2017

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**Instructor:** Christine Koeller

**Office location:** Science Building, Room B329

**Office hours:** Wednesday 3:30pm to 4:30pm, Thursday 10:00am to 11:00am or by appointment (e-mail to schedule an appointment)

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**E-mail:** [Christine.Koeller@uwsp.edu](mailto:Christine.Koeller@uwsp.edu)

### **Meeting Times**

- Section 2 meets Thursday, 2:00pm-3:50pm in SCI B328/SCI B228. Class typically meets in SCI B328 and moves to SCI B228 at 3:00pm for hands-on computer learning. Alterations to these meeting times/locations will be announced in class.

## **PART 1: COURSE INFORMATION**

### **Course Description**

Definition and components of GIS for natural resource management. Describe principles and structure of spatial data and cartographic modeling. Spatial data acquisition, manipulation, translation, aggregation, analysis, and presentation.

**Required Text:** Bolstad, *GIS Fundamentals*, 4ed.

**Other Readings:** Supplemental reading materials are made available via D2L. Check the course schedule for a list of required readings each week.

### **Course Objectives**

After successful completion of this course students will be able to:

- List the components and features of a GIS.
- Define GIS, applications of GIS and GIS data structures.
- Leverage GIS technologies to collect, store, manipulate, analyze and present spatially-related data.
- Construct and edit features in a GIS database.

### **Course Grading**

Your overall course grade is dependent upon your performance on a midterm and final examination, practical examination, participation in class, and hands-on exercises (see below):

Graded Item	Percent of Grade (%)
Mid-Term Exam	15
Final Exam	15
Practical Exam	10
Participation	10
Hands-on Exercises	50
Total	100%

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### **Exams:**

There will be two written exams during the course: A mid-term exam and a comprehensive final exam. Written exams are typically administered through D2L in a computer lab and may consist of the following types of questions: true/false, multiple choice, multi-selection, ordering. You must be present in the assigned computer lab during the exam time; failure to be present during an examination will result in an exam grade of 0%. Written exams are closed-book, closed-note. You are not allowed to copy or share exam questions.

There will also be one hands-on, practical examination where you will demonstrate GIS skills learned throughout the semester. You will be expected to complete the practical examination in a timed and supervised environment without assistance from any other persons including your instructor or peers. The practical exam will test your ability to navigate ArcGIS software, create and manage GIS data, and create a map layout.

### **Participation:**

Participation and attendance are mandatory and attendance will be recorded according to the [UWSP attendance policy](#). Two or more unexcused absences or failure to participate in class activities will result in a lowered participation grade for the course.

If you require special exam accommodations through disability services, you must review and adhere to the accommodation request policies set forth by UW-Stevens Point Disability and Assistive Technology Center. Visit the following link for more information.

<http://www.uwsp.edu/disability/Pages/testingAccommodations/default.aspx>

### *Grading Rubric:*

Grade	Minimum Points Required	Percentage
A	93	93%
A-	90	90%
B+	87	87%
B	83	83%
B-	80	80%
C+	77	77%
C	73	73%
C-	70	70%
D+	67	67%
D	63	63%
F	<63	<63

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### **Hands-on Exercises:**

During this course you will complete four, hands-on GIS exercises. You will incorporate what you learn in lectures and readings to each exercise. Grading rubrics are provided with each exercise along with instructions on what to turn in. Most exercises require submitting work to D2L for grading. Failure to upload work to D2L may result in a zero score.

### **Accessing Exercise Data and Saving your Work**

- **Z: Drive:** GIS hands-on exercises are primarily conducted on a UWSP network location. You have been assigned a network folder located within the following server location (aka Z: drive): `z:\uwsp.edu\files\CLS\GEO\classes2`. When working on a graded exercise, you must save all your progress in your Exercise folder on the Z: drive (unless you are working with ArcGIS Online).
- **D2L Dropbox:** Some exercise deliverables will be uploaded to the D2L dropbox for grading. Exercise deliverables are specified in the exercise instructions, please read carefully!
- **ArcGIS Online:** You will be assigned an ArcGIS Online student account to use in this course. You will be asked to join the UW-Stevens Point ArcGIS Online Organizational account and participate in a class group. It is your responsibility to manage your login information, course materials, and sharing permissions. Your ArcGIS Online account and course files will be accessed for evaluation and grading throughout the course. Your ArcGIS Online files will be deleted at the end of the semester.

### **Exercise Expectations:**

- Exercises vary in length. In general, the hands-on exercises take 2-6 hours to complete which will require time outside of class.
- Grading rubrics are provided with each exercise. Review the grading rubric to determine how you will be assessed on your exercises!
- Written composition along with spelling and grammar will be evaluated as part of your grade.
- Lab computers are to be used ONLY for the assignments or approved resources. No other software is permitted to be used during lab exercises including instant messaging, chat, texting, email, Facebook, or any other software not directly related to the exercises.
- You are highly encouraged to seek instructor support during normal class times and office hours. Alternative arrangement can be made by appointment.
- Instructor assistance is not available during weekends and evenings; you must plan accordingly!
- Complete exercises on time and submit work before the due date and time in order to avoid point deductions for late assignments.

**Penalty for late Exercises:** Late exercises will receive a 10% deduction for each day the exercise is late. Only completed assignments that are uploaded to D2L will be graded. Late assignments will only be accepted for one week past the scheduled due date and you must e-mail your instructor when your late assignment is ready for grading.

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## **PART 2: COURSE POLICIES AND MANAGEMENT**

### ***Classroom policies:***

- Mute the sound on all cell phones and electronic devices during class.
- Classes start **promptly** at the assigned time, please show up on time.
- Email is the preferred method of communication outside of our scheduled classes.
- Plagiarism and cheating are **NOT** tolerated. UWSP procedures will be followed if students are suspected of plagiarizing materials or cheating (review academic misconduct outlined at:  
<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>). At a minimum, any assignment, quiz, exercise, or exam in which cheating or plagiarism is found will result in zero credit/points for that assignment, quiz, exercise, or exam. Additional penalties may apply as outlined in chapter 14 of the UWSP Handbook.
- Weekly required readings should be completed before attending class that week.

### ***Disability Services:***

If you require special classroom accommodations, it is your responsibility to contact me within a reasonable timeframe and I will make every effort to accommodate your request. You should also review the UW-Stevens Point Disability and Assistive Technology Center accommodations information page at <http://www.uwsp.edu/disability/Pages/faculty/accomodations.aspx> for additional information and contact them as needed.

### ***D2L, Course Management and Email:***

This course uses the UWSP internet portal, Desire2Learn (D2L) for course management and administration. Course information, grades, lecture information, quizzes, exams, and additional reading materials will be accessed and circulated via D2L. You will also be required to upload most assignments to a D2L dropbox for grading. Course announcements will be communicated via your UWSP email and D2L. Check your UWSP email regularly during this course.

***D2L Discussion board:*** You are encouraged to use the D2L discussion board to post questions related to class activities. A response will be made within 48 hours, unless over a weekend.

***Please Note:*** The instructor maintains the right to change this syllabus and course proceedings as necessary for the course.



### PART 3: UW-Stevens Point Emergency Procedures

- **Medical Emergency.** In the event of a medical emergency call 9-1-1 or use Red Emergency Phone (if available). Offer assistance if trained and willing to do so. Guide emergency responders to victim.
- **Tornado Warning.** In the event of a tornado warning, proceed to the lowest level interior room without window exposure at [e.g. second floor hallways, SCI A224/225]. See [www.uwsp.edu/rmgt/Pages/em/procedures/other/floor-plans.aspx](http://www.uwsp.edu/rmgt/Pages/em/procedures/other/floor-plans.aspx) for floor plans showing severe weather shelters on campus. Avoid wide-span structures (gyms, pools or large classrooms).
- **Fire.** In the event of a fire alarm, evacuate the building in a calm manner. Meet at Parking Lot T. Notify instructor or emergency command personnel of any missing individuals. For more information on fire emergency procedures, review the following: <http://www.uwsp.edu/rmgt/Pages/em/procedures/grounds/fire-explosion.aspx>.
- **Active Shooter/Code React.** Run/Escape, Hide, Fight. If possible, your best option is to run away from the attacker to safety. If trapped hide, lock doors, turn off lights, spread out and remain quiet. Call 9-1-1 when it is safe to do so. Follow instructions of emergency responders. If you are unable to escape, use your best judgment. Review the Active Shooter/CODE REACT procedures on campus at <http://www.uwsp.edu/rmgt/Pages/em/procedures/violence/active-shooter.aspx>.

See UW-Stevens Point Emergency Procedures at [www.uwsp.edu/rmgt/Pages/em/procedures](http://www.uwsp.edu/rmgt/Pages/em/procedures) for details on all emergency response at UW-Stevens Point.



**PART 4: LECTURE AND HANDS-ON EXERCISE SCHEDULE, READINGS AND DUE DATES**

- You are expected to complete the required readings before attending class.

COURSE SCHEDULE			
Wk	Week of	Weekly Topics	Required Readings / Due Dates
1	9/4	What is GIS? Course Management Overview Exercise 1	Bolstad: Chapter 1 Niemann et al. Ch. 11 (D2L) Fundamentals of GIS Workflows (Koeller)
2	9/11	What is GIS? GIS Data Models Exercise 1	Bolstad: Ch. 2, pp. 25-54 <b>Exercise 1 Part 1 Due 9/13/17 at 11:59PM</b>
3	9/18	GIS Data Models Exercise 1	Fundamentals of GIS Workflows (Koeller)
4	9/25	Data Creation and Data Capture Exercise 2 - Part 1	Longley et al. Chapter 9 (D2L) <b>Exercise 1 Part 2 Due 9/27/17 at 11:59PM</b>
5	10/2	GPS / GNSS Exercise 2 - Part 2	Bolstad: Chapter 5 How GPS Works poster (D2L) <b>Exercise 2 Part 1 Due 10/4/17 at 11:59PM</b>
6	10/9	Exercise 2 - Part 2 Group Field Data Collection (Schmeeckle Reserve)	Fundamentals of GIS Workflows (Koeller)
7	10/16	Earth Measurement Exercise 2 - Part 2	Bolstad: Chapter 3: pp. 71-94 Fundamentals of GIS Workflows (Koeller)
8	10/23	Map Projections and Coordinate Systems Exercise 3	Bolstad: Chapter 3, pp. 101-123 Brewer: Chapter 1, pp. 16-19 (D2L) <b>Exercise 2 Part 2 Due 10/25/17 at 11:59PM</b>
9	10/30	<b>Midterm Exam</b>	

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Wk	Week of	Topics	Required Readings
10	11/6	Class Online (WLIA Fall Regional Meeting, La Crosse, WI) Metadata / PLSS	Bolstad: Chapter 4 pp. 171-175 Bolstad: Chapter 3 pp. 120-122 WI DNR: PLSS Tutorial (D2L)
11	11/13	Attribute data and data tables  Exercise 3	Bolstad: Chapter 8  <b>Exercise 3 Due 11/17/2017 at 11:59PM</b>
12	11/20	No Class (Thanksgiving Break)	
13	11/27	Spatial data analyses  Exercise 4	Bolstad: Chapter 9 pp. 347-389  Fundamentals of GIS Workflows
14	12/4	Cartographic Fundamentals  Exercise 4	Bolstad: Ch. 4 pp. 164-171 Robinson et al: Chapter 18 pp. 330-339 (D2L) <b>Exercise 4 Due 12/8/17 at 11:59PM</b>
15	12/11	<b>GIS practical Exam</b>	
16	12/18	<b>Final Exam: Wednesday, December 20 2:45pm-4:45pm (SCI B228)</b>	

*\* The instructor maintains the right to change the course schedule based on actual course progress. Changes will be announced in class and by e-mail.*