

Instructor: Dr. Marcos Luna
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Class Time:
Class Room:
Office Hours:
Website: Canvas (<http://www.salemstate.edu/elearning/>)

Course Description:

Geographic Information Systems (GIS) are powerful forms of spatial information processing. Incorporating analytic geographic techniques to capture, maintain, analyze, and display data, GIS generate unique spatial information widely used by both the public and private sectors. Specifically, this course details the analytical and technical development and the applied uses of GIS for business, environmental, and social applications. Three lecture hours per week. Not open to students who have received credit for GGR320. Required of B.S. Cartography. *This course also qualifies as an elective for the **Information Technology in the Arts and Sciences (ITAS) Minor**. See www.salemstate.edu/itas for more information.*

Course Goals:

- Students will gain theoretical understanding and practical experience with Geographic Information Systems and related technologies.
- Students will explore GIS technology in the context of critical inquiry and scientific investigation.
- Students will gain practical experience with leading GIS software applications and hardware technologies through laboratory and field-based exercises.

Learning Objectives:

- Understand basic GIS concepts: geospatial data models, topology, projections, coordinate systems, georeferencing and metadata
- Apply analytic skills in GIS-based spatial analyses: perform basic spatial measurements, database and spatial queries, locational analysis, and error determination.
- Independently develop and execute a substantive, goal-based GIS project and communicate the purpose, methods, and results of this project.

Required Materials:

- Maribeth Price. *Mastering ArcGIS*, 6th Edition. (New York: McGraw-Hill, 2014).
- Personal storage device (i.e. flash drive/thumb drive/USB drive)

Course Policies:

- Students are responsible for studying all material found in the posted readings, multimedia and lectures.
- All quizzes and assignments are due before the assigned due dates. Late assignments will not be accepted unless discussed with the professor at least 48 hours BEFORE the due date OR with a documented emergency.
- Students who have questions about readings, lectures, or assignments are strongly encouraged to use the appropriate class discussion forums, or to communicate with the instructor directly, whether by phone, email, or in-person during office hours.
- All students agree to abide by the course Honor Code: “My answers to homework, quizzes and exams will be my own work (except for assignments that explicitly permit collaboration). I will not make solutions to homework, quizzes or exams available to anyone else. This includes both solutions written by me, as well as any official solutions provided by the course staff. I will not engage in any other activities that will dishonestly improve my results or dishonestly improve/hurt the results of others.”
- Salem State University is committed to providing equal access to the educational experience for all students in compliance with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act and to providing all academic accommodations, aids, and adjustments. Any student who has a documented disability requiring an accommodation, aid or adjustment should communicate with the instructor immediately. Students who have not done so should provide documentation to and schedule an appointment with the Office for Students with Disabilities and obtain appropriate services.
- **The instructor reserves the right to change the course content and syllabus at any time during the semester.**

- **Grading**

Reading Quizzes, Surveys & Participation	20%
Chapter Exercises	40%
Final Project*	40%
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Total:	100%

NOTE: In the event of a university declared critical emergency, Salem State University reserves the right to alter this course plan. Students should refer to <http://www.salemstate.edu/> for further information and updates. The course attendance policy stays in effect until there is a university declared critical emergency.

In the event of an emergency, please refer to the alternative educational plans for this course located in Canvas. Students should review the plans and gather all required materials before an emergency is declared.

* This project will require peer reviews after submission.

Some detail about the assignments:

Please see the detailed reading and assignment schedule below for due dates. If you have questions about any assignment or your grades, please send me an email or come see me.

Reading Quizzes, Surveys & Participation

Each week there will be a reading quiz based on the week's reading, videocast, or other delivered content. Unless indicated otherwise, you may take the reading quiz as many times as you like before the due date.

Periodic surveys in the course serve to gather information or feedback. You will receive credit for taking these surveys. Participation is evaluated through regular, punctual attendance and readiness to participate in class activities.

Chapter Exercises

Most weeks will conclude with exercises that assesses your understanding of the delivered content AND the skills you practice for that week. These exercises may require significant time to work through. Most weekly exercise assignments follow the general format of their respective questions in the textbook. For exercises organized like quizzes, you may submit answers up to three (3) times and keep the highest score before the due date. Some exercises require the upload of a file, or open-ended answers. The latter require careful review and will only be graded once.

Final Project

In the latter part of the semester, you will work to conduct a GIS analysis and produce a poster for public display. More information will be provided at a later date. This product will be shared with the class and each person will conduct peer reviews of the work of at least two to three classmates.

Peer Review

For some assignments, you will be required to peer review the work of your classmates after making your own submission. After uploading your own submission for a given lab or assignment, you will be assigned to peer review the work of your classmates. You will be provided with a clear rubric that enables you to assess and comment on your classmates' work. Peer reviews will be due a week after the due date of the original lab or assignment. **You will only receive credit for your own assignment after you have completed the assigned peer reviews by the given due date.**

Week	Date	Readings	Assignments
Week 1: Course Orientation			
1	Fri. 1/23		
Week 2: GIS Data			
2	Thu. 1/29	1. "Introduction" and Ch1 "GIS Data" 2. Watch Episode 1 of "Geospatial Revolution" 3. Review the Study Guide	DUE by noon: Ch1 Reading Quiz
	Fri. 1/30		
Week 3: Mapping GIS Data			
3	Wed. 2/4		DUE by midnight: Chapter 1 Exercises
	Thu. 2/5	1. Ch 2 "Mapping GIS Data" 2. Watch the LECTURE VIDEO 3. Review the Study Guide	DUE by noon: Ch2 Reading Quiz
	Fri. 2/6		
Week 4: Presenting GIS Data			
4	Wed. 2/11		DUE by midnight: Ch2 Exercises
	Thu. 2/12	1. Read Ch3 "Presenting GIS Data" 2. Watch the LECTURE VIDEO 3. Review the Study Guide	DUE by noon: Ch3 Reading Quiz
	Fri. 2/13		
Week 5: Attribute Data			
5	Wed. 2/18		DUE by midnight: Ch3 Exercises
	Thu. 2/19	1. Read Ch4 "Attribute Data" 2. Watch the LECTURE VIDEO 3. Review the Study Guide	DUE: Ch4 Reading Quiz
	Fri. 2/20		
Week 6: Queries			
6	Wed. 2/25		DUE by midnight: Ch4 Exercises
	Thu. 2/26	1. Read Ch5 "Queries" 2. Watch the LECTURE VIDEO 3. Review the Study Guide	DUE by noon: Ch5 Reading Quiz
	Fri. 2/27		

Week	Date	Readings	Assignments
Week 7: Raster Analysis			
7	Wed. 3/4		DUE by midnight: Ch5 Exercises
	Thu. 3/5	1. Read Ch8 “Raster Analysis” 2. Watch the LECTURE VIDEO 3. Review the Study Guide	DUE by noon: Ch8 Reading Quiz
	Fri. 3/6		DUE: Personal geodatabase
Week 8: Spatial Joins			
8	Wed. 3/11		DUE by midnight: Ch8 Exercises
	Thu. 3/12	1. Read Ch6 “Spatial Joins” 2. Watch the LECTURE VIDEO 3. Review the Study Guide	DUE by noon: Ch6 Reading Quiz
	Fri. 3/13		DUE: Elevation raster
Week 9: SPRING BREAK			
9	Fri. 3/20	SPRING BREAK – NO CLASS	
Week 10: Map Overlay and Geoprocessing			
10	Wed. 3/25		DUE: Ch6 Exercises
	Thu. 3/26	1. Ch7 “Map Overlay and Geoprocessing” 2. Watch the LECTURE VIDEO 3. Review the Study Guide	DUE by noon: Ch7 Reading Quiz
	Fri. 3/27		DUE: Map and Stats of Areas Affected
Week 11: Coordinate Systems			
11	Wed. 4/1		DUE by midnight: Ch7 Exercises
	Thu. 4/2	Ch11 “Coordinate Systems”	DUE by noon: Ch 11 Reading Quiz
	Fri. 4/3		DUE: Map and Stats of Infrastructure Affected
Week 12: Modeling Sea Level Rise			
12	Wed. 4/8		DUE by midnight: Ch11 Exercises
	Fri. 4/10		DUE: Map and Stats of People Affected
Week 13: Modeling Sea Level Rise			
13	Fri. 4/17	LAST DAY TO WITHDRAW	Poster Draft #1 Due
Week 14: Modeling Sea Level Rise			

Week	Date	Readings	Assignments
14	Fri. 4/24		Poster Peer Reviews Due
Week 15: Modeling Sea Level Rise			
15	Fri. 5/1	LAST DAY OF CLASS	
16	Fri. 5/8		Revised Poster Due by midnight