

**Department of Geography and Geoinformation Sciences  
George Mason University  
GGIS 311: Introduction to Geographic Information Systems – Fall 2013**

**Class time:** 1:30 – 4:15 pm (Fridays)

**Location:** Exploratory Hall, Room 2103

**Instructor:** Aaron P. Mulhollen  
Exploratory Hall, Room 1102  
[amulholl@masonlive.gmu.edu](mailto:amulholl@masonlive.gmu.edu)

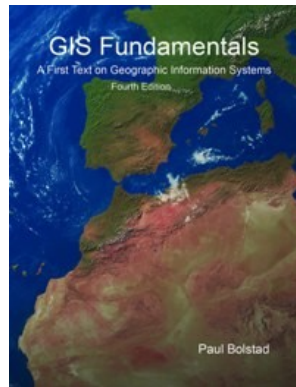
**Office hours:** Wednesdays, 1:00 – 3:00 pm, Exploratory Hall, Room 2102 (GGIS Lab),  
or by appointment

**Required Text:** *GIS Fundamentals: A First Textbook on Geographic Information Systems, 4th Ed.*, Bolstad, Paul V., Eider Press 2012.

Textbook website: <http://www.paulbolstad.net/gisbook.html>

Purchase new for \$39 here: <http://www.atlasbooks.com/marktplc/00729.htm>

**You should do the readings before each Friday class period. It will be much more beneficial to you for lecture, and especially for completing the labs.**



**Required Materials:** USB Drive -2GB or larger of free space.  
Lab instructions and data will be provided on the course Blackboard site. Lab instructional demonstrations may be accessed at:  
[http://www.paulbolstad.net/4thedition/lesson\\_rec.html](http://www.paulbolstad.net/4thedition/lesson_rec.html)

**Special Needs:** If you have a documented learning disability or other condition that may affect academic performance: 1). please let me know; and 2) be sure this documentation is on file with the Office of Disability Services (SUB I, Rm. 2500; 703-993-2474; <http://ods.gmu.edu>) so that they can make a determination about proper accommodations. As a matter of university policy, I cannot provide accommodations without documentation from the ODS.

GGIS 311 is an introduction to geographic information systems. Topics covered include basic data structures, data sources, data collection, data quality, geodesy and map projections, spatial and tabular data analyses, digital elevation data and terrain analyses, cartographic modeling, and cartographic layout. Laboratory exercises provide practical experiences that complement the theory covered in textbook and lecture. While this course is not specifically a software course, you must show proficiency with the software in order to pass the class.

**Grading:** Grades for this course are based on individual performance versus a consistent standard. There is no curve – so if everyone earns an ‘A’, everyone will receive an ‘A’. Grades will be based upon performance in the following areas:

Lab assignments:	50%	200 points (20 points each)
Attendance/Quizzes:	10%	40 points
Exam 1:	10%	40 points
Exam 2:	10%	40 points
<u>Final Exam:</u>	<u>20%</u>	<u>80 points</u>
Total:	100%	400 points

Grades will be determined according to the following scale:

90 – 100%	A
80 – 89.99%	B
70 – 79.99%	C
60 – 69.99%	D
below 60%	F

**Labs Exercises:** Lab exercises will be available on Blackboard in PDF format. I recommend downloading and printing the exercises prior to class. You should read the lab in advance, and review/note new procedures or activities. Labs will typically require more than the time allotted per class period to complete. The computer labs on the top floor of Innovation Hall, those in Exploratory Hall (e.g. 2102), and several in the Johnson Center are open for extended hours, and are equipped with ArcGIS 10.1. Registered students will receive a one-year copy of ArcGIS for use at home. We offer this software as a convenience, but do not provide tech support. For that you must contact ESRI Support at 1-888-377-4575.

All labs assignments are to be submitted via Blackboard. Submit by clicking on the appropriate assignment link to open the answer submission window. Written answers may be typed in, and attachments may be added there. Click “Submit” when complete. You may submit answers as many times as you would like up to the date/time due, though only the final submission will be graded.

Labs will typically be due the Thursday (11.59 p.m.) of the week after your scheduled Lab session, unless otherwise noted. Late labs are docked by 10% per day, and labs won't be accepted if they are more than 5 days late. Makeup labs are possible if the instructor has advance notice, so please anticipate conflicts, and contact the instructor. Labs are only accepted through the Blackboard course site - NOT Email! Labs are to be

submitted as \*.jpg, MS Word, typed text, or \*.pdf. **Please do not send, submit, or attach \*.mdx or shapefiles.**

**Class Format:** This is a weekly course, scheduled for 2 hours and 45 minutes. The typical class period will be broken into three “sessions”, as follows:

- Session 1: Lecture, 50 minutes
- Session 2: Lecture, 45 minutes
- Session 3: Lab, 50 minutes

There will be 5 to 10 minute breaks between sessions, however lab quizzes will be given promptly at the beginning of the third session, so make sure you come back, and on time!!!

**Attendance:** Attendance is required for all lectures, including the lab sessions. Daily sign-in sheets will be recorded. Additionally, weekly quizzes on lab topics will be given at the beginning of each lab session. No make-up quizzes will be given except for university-approved excused absences (e.g. athletics), religious holidays, and in cases where absences have been communicated clearly with the instructor.

Two points will be awarded per day of attendance, for a total of 26 points. Twelve lab quizzes will be worth 1.5 points each (0.5 per question), for a total of 18 points. **If you attend every class, and score perfect on every quiz, you will earn +4 points to be added to your overall score at the end of the semester.**

**Exams:** There will be three exams for this course. Exams 1 and 2 will cover current sections of the course, while the Final Exam will be comprehensive. Make-up exams will not be given without prior arrangement with the instructor, documented illness, or university-approved excused absences.

**Honor Code:** The George Mason University Honor Code is in effect for this course. Please consult the university catalog for a complete statement of the Honor Code, and see the instructor if you need further clarification.

Please note you may work together on labs, but **you each must do every part of each lab**, and **turn in entirely your own work**. That means each of you should perform every step indicated in the lab instructions. Your grade is for individual effort. Copied files/maps from other students will be construed as cheating; and will be reported to the Honor Committee and the Office of Academic Integrity in accordance with university policy.

Pursuant to OAI policy, for any cases of cheating I must give two recommendations for sanctions, for first and second offenses. My recommendations will be as follows:

1<sup>st</sup> Offense: ‘F’ for the course and academic probation

2<sup>nd</sup> Offense: Expulsion from the university

**Course Schedule:**

Week	Lecture Topic & Reading Prep	Lab Topic	Lab Due
Week 1: Aug. 30	<b>**** Labor Day Weekend - No Class ****</b>		
Week 2: Sept. 6	Chapter 1: Intro to GIS (also, a course introduction)	Lab Introduction	
Week 3: Sept. 13	Chapter 2: Data Models	Lab 1: Introduction to ArcGIS	Sept. 19
Week 4: Sept. 20	Chapter 3: Geodesy, Datums, Map Projections, and Coordinate Systems (pp. 71-91; 101-123)	Lab 2: Projections	Sept. 26
Week 5: Sept. 27	Chapter 4: Maps, Data Entry and Editing (pp. 131-152)	Lab 3: Digitizing	Oct. 3
Week 6: Oct. 4	Chapter 4: Maps, Data Entry and Editing (pp. 153-175)	Lab 4: Georeferencing	<b>Oct. 13*</b>
Week 7: Oct. 11	<b>Exam 1 (Chpts. 1-4)</b>	Chapter 7: Digital Data	Lab 6: Digital Data and Tables Oct. 17
Week 8: Oct. 18	Chapter 8: Attribute Data and Tables	Lab 7: Tables 1	Oct. 24
Week 9: Oct. 25	Chapter 9: Basic Spatial Analysis (pp. 347-376)	Lab 8: Spatial Selection, etc.	Oct. 31
Week 10: Nov. 1	Chapter 9: Basic Spatial Analysis (pp. 377-398)	Lab 9: Buffering and Overlay	<b>Nov. 10*</b>
Week 11: Nov. 8	<b>Exam 2 (Chpts. 7-9)</b>	Chapter 10: Topics in Raster Analysis	Lab 10: Raster Analyses Nov. 14
Week 12: Nov. 15	Chapter 11: Terrain Analysis	Lab 11: Terrain Analyses	Nov. 21
Week 13: Nov. 22	Chapter 12: Spatial Estimation	Lab 12: Interpolation	Dec. 5
Week 14: Nov. 29	<b>**** Thanksgiving Break - No Class ****</b>		
Week 15: Dec. 6	Chapter 14: Data Standards and Quality	Open Lab - Catch up (no quiz)	
Week 16: Dec. 13	<b>Final Exam (1:30 - 4:15 pm) (Comprehensive)</b>		

**\*Notes:**

<sup>1</sup>This is a flexible course outline. The instructor reserves the right to make changes when necessary.

<sup>2</sup>The current “official” copy of the syllabus/course outline will be kept on Blackboard. Students will be notified of any changes.