

George Mason University
Department of Geography and Geoinformation Sciences
GGIS 311: Introduction to Geographic Information Systems – Spring 2018

Class time: 12:00 pm – 1:15 pm (MW)

Location: Exploratory Hall, Room 2103

Instructor: Lori Mandable
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Office hours: Mondays and Wednesdays from 1:30 pm - 2:45 pm, 3417 Exploratory Hall & by appointment

Overview: GGIS 311 is an introduction to geographical 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 to pass the class.

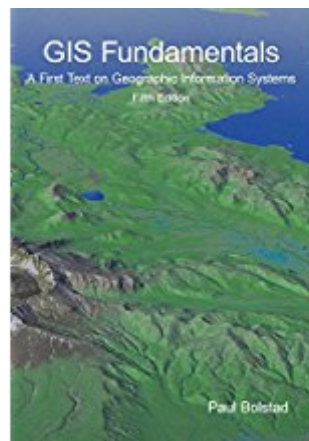
Required Text: *GIS Fundamentals: A First Text on Geographic Information Systems, 5th Ed.*, Bolstad, Paul. Eider Press 2016.

ISBN: 978-1-50669-587-7

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

Available via Amazon in print form or via XanEdu in digital form

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



Required Materials: USB Drive -2GB or larger of free space.

Lab instructions will be provided on the course Blackboard site. Lab data will be provided during the initial lab session.

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)
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 schema:

A+, GPA 4.00 points earned	97% and above
A, GPA 4.00 points earned	93% - 96.99%
A-, GPA 3.67 points earned	90% - 92.99%
B+, GPA 3.33 points earned	87% - 89.99%
B, GPA 3.00 points earned	83% - 86.99%
B-, GPA 2.67 points earned	80% - 82.99%
C+, GPA 2.33 points earned	77% - 79.99%
C, GPA 2.00 points earned	73% - 76.99%
C-, GPA 1.67 points earned	70% - 72.99%
D, GPA 1.00 points earned	60% - 69.99%
F, GPA 0.00 points earned	59.99% and below

Lab Exercises: There will be 12 assigned labs over the course of the semester, with 10 of those 12 labs counting for the lab portion of your grade. Each lab is worth 20 points, and I will drop the 2 lowest lab grades in computing the score for a total of 200 points.

Lab exercises will be available on Blackboard in PDF format. I recommend downloading and printing the exercises prior to beginning your work. You may complete the exercises in labs or at home. You should read the lab in advance, and review/note new procedures or activities. Labs will require more than the one-hour period to complete.

The GGS computer lab in Exploratory Hall 2102 has registered copies of ArcGIS 10, which are accessible 24/7 via your GMU ID. Students registered for this class automatically receive permission to utilize this lab. Registered students will also 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. Students who wish to utilize Apple Mac products can download an open source software package called QGIS. Labs can be submitted via Blackboard using either ArcGIS or QGIS products.

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 time due, though only the final submission will be graded.

Lab due dates are listed on the syllabus and students have until 11:59pm of that date to submit their labs. 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 submitted as *.jpg, MS Word, typed text, or *.pdf. **Please do not send *.mdx or shapefiles.**

Attendance: Attendance is required for all lectures and lab sessions. If you are unable to make it to a class, you **MUST** email the instructor as soon as possible informing her of the reason for your absence and to discuss how to make up any missed material covered in class.

Quizzes: Additionally, quizzes on course topics will be given at random and can best be prepared for by answering the questions at the back of each chapter. No make-up quizzes will be given except for university-approved excused absences (athletics), religious holidays, and documented illness.

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.

General Information and Policies

GMU Policy: The University Catalog (<http://catalog.gmu.edu>) is the central resource for university policies impacting student, faculty and staff conduct in university academic matters. Other policies are available at <http://universitypolicy.gmu.edu/>. All members of the community are responsible for understanding and following established policies.

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 faculty must give two recommendations for sanctions, for first and second offenses. My recommendations will be as follows:

- 1st Offense: 'F' for the course and academic probation
- 2nd Offense: Expulsion from the university

Special Needs: If you have a documented learning disability or other condition that may affect academic performance: 1) Inform the professor; and 2) Consult with the Office of Disability Services (SUB I, Rm. 2500; 703-993-2474; <http://ods.gmu.edu>) so that they can document the issues and determine about proper accommodations. As a matter of university policy, faculty cannot provide accommodations without documentation from the ODS.

E-Mail: This class will only utilize Blackboard and GMU e-mail accounts to distribute important information, including messages related to this class.

Cell Phones: As a courtesy to your classmates, professor and guest speakers, please turn your cell phone to silent during class lectures. If you are experiencing a medical or family situation in which you need to receive an incoming call, please let the professor know in advance and exit the class to receive your call.

Weather: GMU posts delays and closings on its website. You can receive notification from Mason Alerts via email and/or text message to your cell phone. However, please use common sense about weather conditions in your area. If you do not feel safe traveling to class in inclement weather, please do not attempt the journey and inform the professor as soon as possible regarding your absence.

Course Schedule:

Week	Monday	Wednesday	Lab Due
Week 1: Jan 22, 24	Course Introduction	Lab Introduction & Chapter 1: Intro to GIS	N/A
Week 2: Jan 29, 31	Chapter 2: Data Models	Lab 1: Introduction to ArcGIS	Feb 12
Week 3: Feb 5, 7	Chapter 3: Geodesy, Datums, Map Projections, and Coordinate Systems	Lab 2: Projections	Feb 19
Week 4: Feb 12, 14	Chapter 4: Maps, Data Entry and Editing	Lab 3: Digitizing	Feb 28
Week 5: Feb 19, 21	Chapter 4: Maps, Data Entry and Editing (cont.)	Lab 4: Georeferencing	Mar 5
Week 6: Feb 26, 28	Exam 1 (Chpts. 1-4)	Chapters 5-6: GNSS, Coordinate Surveying & Imagery	N/A
Week 7: Mar 5, 7	Chapter 7: Digital Data Chapter 8: Attribute Data and Tables	Lab 6: Digital Data and Tables	Mar 19
Week 8: Mar 12-18	**** Spring Break ****		
Week 9: Mar 19, 21	Chapter 8: Attribute Data and Tables (cont.)	Lab 7: Tables 1	Apr 2
Week 10: Mar 26, 28	Chapter 9: Basic Spatial Analysis	Lab 8: Spatial Selection, etc.	Apr 9
Week 11: Apr 2, 4	Chapter 9: Basic Spatial Analysis (cont.)	Lab 9: Buffering and Overlay	Apr 16
Week 12: Apr 9, 11	Exam 2 (Chpts. 7-9)	Chapter 10: Topics in Raster Analysis Lab 10: Raster Analyses	Apr 23
Week 13: Apr 16, 18	Chapter 11: Terrain Analysis	Lab 11: Terrain Analyses	Apr 30
Week 14: Apr 23, 25	Chapter 12: Spatial Estimation Chapter 13: Spatial Modeling	Lab 12: Interpolation Lab 13: Intro to Cartographic Modeling	May 2
Week 15: Apr 30 - May 2	Chapter 14: Data Standards & Quality	Chapter 15: Developments in GIS	N/A
Week 16: May 14	Final Exam (10:30 am -1:15 pm) (Comprehensive)		

***Notes:**

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

²The current "official" copy of the syllabus/course outline will be kept on Blackboard. Students will be notified of any changes.