GGS 463: Applied GIS

Fall 2017
Course Syllabus

Class Time:
T & TH 1:30 – 2:45 p.m.
Exploratory Hall 2103

Required Text:
None, readings by topic

Instructor:
Timothy Leslie
Associate Professor
tleslie@gmu.edu

Office: Exploratory 2207

Pre-Requisites

- GGS 300 (Quantitative Methods) and 311 (Intro GIS) must have been taken previously to enrollment in this course. *These are hardcoded requirements, and students missing these courses without instructor approval will be removed from the course.*
- GGS 310 (Cartography) is recommended.

Objectives and Outcomes

This class is a Students as Scholars *Research & Scholarship Intensive* course that focuses on the application of GIS within the context of geographic research. Instruction and class time will interweave the learning of geographic methods alongside active research activity. This research activity involves The Creation of an Original Scholarly Project, which includes:

(a) Articulating and Refining a Geographic Research Question,
(b) Gathering and Managing the Spatial Data Necessary to Answer this Question
(c) Executing the Appropriate Spatial Methods and
(d) Applying Appropriate Scholarly and Cartographic Conventions in Presentation.

You will work through this research project as a GIS project team, present your findings in the form of a research poster at the GGS Department's GIS Day on November 15, and submit a follow-up paper/report.

Expectations

- This class is upper division course designed for students with an understanding of geographic information systems, and your work should show **attention to detail.** When your lab work and research products are evaluated, the grading emphasis will be on the 'last 10%.'
- I expect you to be able to access the electronic resources of the University. Blackboard will be used for the distribution of lectures and assignments. I will occasionally use e-mail to distribute messages related to class, so you should either regularly check your Mason e-mail, or have it forwarded somewhere you do check.

- While this is a computer classroom, this is for the purposes of doing GIS and associated data gathering and write-up. You are expected to be respectful of your peers and your instructor and to not engage in activities that are unrelated to the class.

Evaluation

Grades will be weighted from assessments from the following categories:

Research Poster	30%	Lab Assignments	30%
Research Follow-Up Paper	10%	Course Participation	20%
Research Milestones	10%		

Grades generally follow 90/80/70/60 with plus/minus being within 3 percent of the cutoffs. I reserve the right to alter the exact boundaries at the end of the semester. Homework assignments will set up the analysis completed in each problem set, and are due 10 minutes before the start of class. Late assignments will be docked 50% for the first class period they are late, after which they will no longer be accepted.

Academic Integrity

The integrity of the University community is affected by the individual choices made by each of us. GMU has an Honor Code with clear guidelines regarding academic integrity. Three fundamental and rather simple principles to follow at all times are that: (1) Labs are to be done individually; (2) when using the work or ideas of others, including fellow students, give full credit through accurate citations; and (3) if you are uncertain about the ground rules on a particular assignment, ask for clarification.

Plagiarism means using the exact words, opinions, or factual information from another person without giving the person credit. Writers give credit through accepted documentation styles, such as parenthetical citation, footnotes, or endnotes. Paraphrased material must also be cited, using MLA or APA format (or similar). A simple listing of books or articles is not sufficient. Plagiarism is the equivalent of intellectual robbery and cannot be tolerated in the academic setting. If you have any doubts about what constitutes plagiarism, please see me. No grade is important enough to justify academic misconduct, and ignorance is not an excuse.

Diversity

George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs, policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth. An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging,

and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected.

Disability Accommodations

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474, http://ods.gmu.edu. All academic accommodations must be arranged through the ODS.

Tentative Course Schedule:

	Lecture	Activity
29-Aug	Introduction to GIS Research (1)	Group Formation, Lab Assigned (L1)
31-Sep	Introduction to GIS Data (2)	Topic Selection
5-Sep	Statistics Baseline (3)	
7-Sep	Open Lab Time	Due: Topic & Project Plan (M1)
12-Sep	Spatial Middle (4)	
14-Sep	Clustering I (SA, NN) (5)	Lab Assigned (L2)
19-Sep	Regression – Basics (6)	
21-Sep	Open Lab Time	Due: Group Contract (M2)
26-Sep	Regression II – Interpretation (7)	Lab Assigned (L3)
28-Sep	Inequality & Convergence (8)	Lab Assigned (L4)
3-Oct	Clustering II (Grouping, Categorical) (9)	Lab Assigned (L5)
5-Oct	Open Lab Time	Due: Method Summary (M3)
10-Oct	*No Class – Fall Break*	
12-Oct	Regression III – Variables (10)	
17-Oct	Presenting GIS Research (11)	
19-Oct	Working with Academic Literature (12)	
24-Oct	Importance of Design (13)	
26-Oct	Open Lab Time	Due: Relevant Lit (M4)
31-Oct	Discussing Statistics (14)	Due: Draft Posters (M5)
2-Nov	Draft Poster Presentations	
7-Nov	GIS As a Career w/ Guest Speaker	
9-Nov	Open Lab Time	
14-Nov	*No Class – Prepare for GIS Day*	
15-Nov	**GIS Day Presentations**	
16-Nov	*No Class - GIS Day Follow-Up*	
21-Nov	*Out-Of-Class Assignment*	Lab Assigned (L6)
23-Nov	*No Class - Thanksgiving*	
28-Nov	Interpolation & Kernel Density (15)	Lab Assigned (L7)
30-Nov	Network Analysis (16)	Lab Assigned (L8)
5-Dec	Course Summary (17)	
7-Dec	Open Lab Time	
Final Exam	Paper Presentations	Due: Papers