GGS 463: (RS) Applied Geographic Information Systems
Course Syllabus, Fall 2018, 3 Credits

INSTRUCTOR

Name:	Dr. Timothy Leslie
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COURSE BASICS

Meeting times:	Tues / Thurs 1:30 - 2:45pm
Location:	2103 Exploratory Hall
Web location:	Blackboard (courses.gmu.edu)
Office hours:	Thurs 12-1pm, or by appt

PRE-REQUISITES

- GGS 300 (Quantitative Methods) and 311 (Intro GIS) **must** have been taken previously to enrollment in this course. Students missing these courses without instructor approval will be removed from the course.

- GGS 310 (Cartography) is strongly recommended.

OVERVIEW & OBJECTIVES

Applying GIS comes in many shapes and forms. This class is a Students as Scholars *Research & Scholarship Intensive* course that focuses on the application of GIS to answer a relevant geographic question. Applying GIS requires both a systematic purpose and a set of tools to use on that purpose. 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 in November, and submit a follow-up paper/report. At the end of the course, each student will have a greater grasp of the research process, a deeper understanding of the ways in which spatial analysis can be implemented, and insight into a particular geographic problem. A number of assignments and an exam will assess your understanding of the conceptual material.

ASSIGNMENTS & EXPECTATIONS

All assignments will be available and submitted through Blackboard. The milestones and assignments are due in clusters as a way for you to pace yourself (and your group). I expect you to use this flexibility to increase personal success, not merely as a way to maximize procrastination. While unlimited submissions are permitted in Blackboard, only the most recent submission will be graded. No late work will be accepted without a documented excuse.

You are expected to be respectful of your peers and your instructor in both words and actions. This ranges from classroom interactions to the simple act of showing up to class on time. 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.

My last name is pronounced LES-LEE. My preference is that you address me as "Professor," "Professor Leslie" or "Dr. Leslie." If there is a specific way that you would like me to address you—including certain pronouns—please notify me as soon as possible.

This class is upper division course designed for students with an understanding of geographic information systems, and your work should show **attention to detail.** Grading emphasis will focus on both the completion of the

assignment as well as the quality of the submitted document.

GRADING SCHEMA

Assessment	Points	% (of final grade)	Assessment	Points	% (of final grade)
Research Poster	60	30%	Exam	60	30%
Research Milestones	20	10%	Assignments	40	20%
Research Reflection	20	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.

If you are not satisfied with your progress during the semester, please see me as early as possible; do not wait until the end of the semester to address these concerns.

Evaluation of the Research Poster will incorporate feedback from other GMU faculty at the GIS Day event.

STUDENTS AS SCHOLARS

Students as Scholars is GMU's award-winning initiative to give students the opportunity to conduct undergraduate research. If you are interested in conducting research or simply learning more about the program, check out oscar.gmu.edu or stop by the Office of Student Scholarship, Creative Activities, and Research to learn about the many programs available to GMU students.

GGS COMPUTER LAB ASSISTANCE

All students in GGS courses should receive "swipe" access (using your Student ID) to the GGS Student Computer Lab (Room 2102, Exploratory Hall) upon registering for the course. If you are having problems with door access, please e-mail GGS administrator Sam Cooke (scooke4@gmu.edu) with SWIPE ACCESS in the subject line of your email.

If you need a license key for a self-installed copy of ArcGIS, please e-mail Professor Leslie.

If you experience problems with the computers (e.g., software or hardware issues) in the GGS Student Computer Lab, please email College of Science IT (cosit@gmu.edu) for technical assistance.

Please copy Dr. Leslie on any e-mail correspondence to outside parties if it is related to this course.

GMU EMAIL ACCOUNTS

Students must use their MasonLive email account to receive important University information, including messages related to this class. See http://masonlive.gmu.edu for more information.

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) all work submitted be your own; (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.

The principle of academic integrity is taken seriously, and violations are treated gravely. No grade is important enough to justify academic misconduct, and ignorance is not an excuse. Please see the University Catalog for a full description of the code and the honor committee process.

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. Notably, individuals are asked not to speak for the experience of others, nor to ask others to account for an entire demographic of which they may belong.

OFFICE OF DISABILITY SERVICES

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.

OTHER GMU RESOURCES

The Writing Center: http://writingcenter.gmu.edu

University Libraries, Ask a Librarian: http://library.gmu.edu/ask

Counseling and Psychological Services: http://caps.gmu.edu

University Catalog: http://catalog.gmu.edu

University Policies: http://universitypolicy.gmu.edu

OUTLINE & TENTATIVE SCHEDULE (subject to change)

		LECTURE TOPIC	SUPPLEMENT	DUE
1	28-Aug	Introduction	Fotheringham et al, Chp 3 Learning Styles 3 Stages of Failure	
2	30-Aug	Spatial Data	Fotheringham et al, Chp 2	
3	4-Sep	Research Design	Methods Chp 2 by Gatrell and Flowerdew	
4	6-Sep	Descriptive Statistics	Burt et al Chp 3 & 4	Lab 1, 1pm

5	11-Sep	Point Patterns	Fotheringham et al, Chp 6	
6	13-Sep	Academic Literature	Methods Chp 4 by Flowerdew	
7	18-Sep	Regression Basics	Burt et al Chp 12	
8	20-Sep	Spatial Autocorrelation	Getis Reflection O'Sullivan & Unwin Chp 7 & 8	
9	25-Sep	Regression Interpretation	Burt Et Al Chap 13	
10	27-Sep	Inequality & Convergence	Sen Et Al Chap 2	
11	2-Oct	Ethics	Agnew Presidential Column Van der Velden et al, 2018	
	4-Oct	Open Lab Time		
	9-Oct	No Class – Fall Break		
	11-Oct	No Class – Fall Break		
12	16-Oct	Regression Finesse		Research Milestones, 3pm
13	18-Oct	Presenting Research	Gosling Chp 2, 3, 5, 6, 7, & 8	
14	23-Oct	Presenting Statistics		Labs 2-5, 1 pm
	25-Oct	**Exam**		
	30-Oct	Open Lab Time		
	1-Nov	Draft Poster Presentations		Draft Posters, 11:00 am
15	6-Nov	GIS as a Career	TBD	
16	8-Nov	GIS as a Career		
	13-Nov	No Class – Prepare for GIS Day		
	14-Nov	**GIS Day Presentations**		Job Position Lab, 8am
17	15-Nov	GIS Day Debrief		
18	20-Nov	Automating GIS		
19	22-Nov	Grouping Analysis	Jain 2010, Kupfer et al 2012	
20	26-Nov	Interpolation &	O'Sullivan & Unwin Chp 9 & 10	

		Kernel Density		
	29-Nov	No Class – Thanksgiving Break		
21	4-Dec	Reflections		
22	6-Dec	Summary	Brooks et al, Chp 16 Anselin Lecture	Labs 6 - 8, 1 pm
	18-Dec	No Class – Reflection Papers due at 1:30		