

# **GGG 463 / 653: GIS Analysis and Application**

## **Course Syllabus, Fall 2020, 3 Credits**

### **INSTRUCTOR**

Name: Dr. Timothy Leslie  
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### **COURSE BASICS**

Meeting time(s): T 1:30 – 2:45pm  
Location: 100% Online  
Modality: 50% synchronous, 50% asynchronous  
Course URL: mymasonportal.gmu.edu

**PRE-REQUISITES** GGS 300 - Spatial Quantitative Methods  
GGG 311 - Geographic Information Systems

**TEXTBOOK(S)** No required textbook. Readings will be available electronically.

### **OVERVIEW & OBJECTIVES**

Applying GIS through analysis is the art and science of investigating and sharing patterns in spatial data. An emphasis is placed on how geographic information analysis is used in the larger process of conducting scientific research. Material will cover how geographic information and GIS are used throughout the research process, as well as more advanced GIS topics such as spatial statistical analysis, temporal analysis and data visualization. The goal is to teach you how to think about how to answer geographic problems in a robust and scientific manner.

Throughout the course, students are required to complete a rigorous, high-quality research project of their own choosing to apply quantitative data to real world problems and accurately state what the data tells us about the problem at hand. 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.

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. The undergraduate offering of this class qualifies as a Mason Impact *Research & Scholarship Intensive* course.

## INSTRUCTOR AVAILABILITY

I do not have specific office hours for this course. Office hours will be managed through Navigate ([navigate.gmu.edu](http://navigate.gmu.edu)). To schedule an appointment, first login. On the home page, click “Get Assistance”. On the following page choose “Academic Advising” for the type of appointment, “Faculty office hours” for the meeting type, and “Geography Course Office Hours” for the Major/Program/Service. In the third page, choose “Department of Geography & Geoinformation Science” as your location, and then type my last name (it should pop up after a few letters) in the Staff member box. The next page lets you pick a time slot, and the final page confirms the appointment. If you are having trouble seeing my availability, please check that you are in the proper semester in the drop-down box in the upper right corner of the screen.

Students who e-mail me Monday - Thursday can ordinarily expect a response within 24 hours. Students who e-mail after 4 PM on Friday or over the weekend can ordinarily expect a response by noon on the following Monday. As email accessibility can be variable during the day, questions regarding course elements due the same day should be sent with tempered expectations.

## COURSE ASSESSMENT

You will be assessed in your attainment of the course learning outcomes through several methods. The groupings and weights of those assessments are listed below.

Activity	Undergraduate Weight	Graduate Weight
Module Quizzes & Exercises	40%	30%
Discussion / Class Engagements	20%	20%
Project Milestones	40%	50%

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.

If the campus closes or class is canceled due to weather or other concern, modifications to any changes to events or assignments for class will be announced via Blackboard. Assignments due on a closure or delay date are still due on that day unless otherwise specified.

Each student will participate in a course project. Evaluation of the project will be distributed throughout several updates and submissions. This class will teach the technical application elements in ESRI products, the dominant software deployment used in the United States. You are free to use open source (QGIS), command line (R), or other software as you see fit.

## **STUDENT EXPECTATIONS**

When part of this course, 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. Coming late to class disturbs class activities and the learning process.

- You are expected to come to class prepared to learn and engage.
- You are expected to refrain from engaging in activities that are unrelated to the class during course time. Cell phones and other communicative devices are not generally part of the pedagogical elements of this course.
- Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions

## **EXTRA CREDIT**

I do not generally offer or entertain requests for extra credit opportunities in this class. Extra credit is extra work, and students who are having difficulty completing the required coursework seldom have the time to complete additional assignments. Students who perform poorly on course assignments may not be devoting adequate time and effort to their academic responsibilities.

If extra credit opportunities arise throughout the course of the semester, they will be announced and provided equitably to the entire class.

## **ELECTRONIC RESOURCES**

Activities and assignments in this course will regularly use the Blackboard learning system, Students are required to have regular, reliable access to a computer with an updated operating system and a stable broadband Internet connection. Elements of the course may also incorporate web-conferencing software such as Blackboard Collaborate and Zoom. For these sessions, students are required to have a device with a functional camera and microphone.

Students seeking to use proprietary software off-campus and/or on non-Windows machines are directed to the Citrix Virtual Lab, for which instructions are provided on the course website. Software keys for self-installation are not provided.

You will likely want some form of portable (or easily accessible) electronic storage. Many of the files we will use are very large. I strongly suggest using a cloud service such as OneDrive or dropbox.com. Please save frequently while working in the lab (lab2a, lab2b, lab2c, for example) and keep separate backups. Saving your work to a Mason machine or virtual machine is NOT a reliable storage method. The ability to manage files without assistance is an underlying requirement in nearly every electronic workflow.

All submissions will be done through Blackboard.

- Unless otherwise specified, only assignments submitted as PDF or Microsoft doc(x) files will be graded.
- For assignments with multiple submissions in Blackboard, only the grade of the most recent submission will be graded / counted.
- For assignments with a stated deadline, no late work (even by a minute) will be accepted for grading without a documented excuse. Documentation examples could include a calendar of religious observances, a conference program that includes your presentation, a letter from your coach that specifies the days on which you will need to miss class because you are away from campus for a competition, an obituary or funeral program, or a note from your doctor. In the case of illnesses or emergencies for which it is impossible to provide advance notice, you should contact the instructor as soon as possible via email and then provide documentation as soon as you are able.
- Your work should be done neatly, professionally, and show attention to detail. Grading emphasis will focus on the quality and completeness of your submissions.
- Unless otherwise stated, you have *one* attempt to take any quiz or exam.

There are no accommodations for personal power outages, internet blackouts, software glitches, or hardware malfunctions.

I do not serve as technical support.

## **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 and dishonest practices. 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.

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). It is your responsibility to understand what constitutes plagiarism and familiarize yourself with the Honor Code. Under no circumstances is it permissible to cheat, plagiarize, steal, or lie in matters relating to academic work.

With independent submission, you may discuss your ideas with others and conference with peers on drafts of the work; however, it is not appropriate to give your paper to someone else to revise. You are responsible for making certain that there is no question that the work you hand in is your own. If only your name appears on an assignment, your professor has the right to expect that you have done the work yourself, fully and independently. With collaborative work, names of all the participants should appear on the work.

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. It is my policy that all Honor Code referrals recommend a sanction of at least course failure. The official GMU policies are available from the Office of Academic Integrity:

<https://oai.gmu.edu/>

Some kinds of participation in online study sites violate the Mason Honor code: these include accessing exam or quiz questions for this class; accessing exam, quiz, or assignment answers for this class; uploading of any of the course materials or exams; and uploading any of your own answers or finished work.

## **DIVERSITY**

George Mason University supports and recognizes that an inclusive and welcoming community is linked to our strategic goals and key to building a sense of belonging and well-being. 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, where diverse opinions, backgrounds, and practices have the opportunity to be voiced, heard and respected. Such an environment fosters growth and productivity among students, faculty and staff.

The reflection of Mason's commitment to diversity and inclusion goes beyond policies and procedures to focus on behavior at the individual, group and organizational level. The implementation of this commitment to diversity and inclusion is found in all settings, including individual work units and groups, student organizations and groups, and classroom settings; it

is also found with the delivery of services and activities, including, but not limited to, curriculum, teaching, events, advising, research, service, and community engagement. Notably, individuals are asked not to speak for the experience of others, nor to ask others to explain ‘the mindset’ of an identity they may have.

The University enables students and employees to use a chosen first name and indicate their pronouns where possible, except when use of a legal name is required by University policy or state/federal law. I use male pronouns (he/him), and my last name is pronounced LESS-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—I encourage to let me know as well as to update your Mason file in Patriotweb. The Mason Code of Student Conduct expects that students will use the preferred name of their classmates and instructor.

The University promotes continuous monitoring and self-assessment regarding diversity. Please contact me immediately if any elements of the class are inconsistent with the University’s aspirations so that they may be remedied.

## **PRIVACY**

Student privacy is governed by the Family Educational Rights and Privacy Act (FERPA) and is an essential aspect of any course.

- All course materials posted to Blackboard or other course site are private; any materials that identify specific students (via their name, voice, or image) must not be shared with anyone not enrolled in this class.
- Live Video Conference Meetings (e.g. Collaborate or Zoom) that include audio or visual information from other students must be viewed privately and not shared with others in your household.
- As your instructor, I cannot discuss your educational record with your parents, your friends, or anyone except for you without explicit written permission. Because your GMU email is the only one that can be identified as belonging to you, the only way to communicate with you via email is through your GMU address. If you send communications from a non-GMU email account, you will receive a response telling you to use your GMU email.
- Outside video and/or audio recording is permitted only with the prior written consent of the professor or if recording is part of an approved accommodation plan. Recordings of class meetings that include audio or visual information from other students are private and must not be shared.

## **SEXUAL HARASSMENT, MISCONDUCT, AND INTERPERSONAL VIOLENCE**

George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students who believe that they have been sexually harassed, assaulted or subjected to sexual misconduct to seek assistance and support.

As a faculty member and designated “Mandatory Reporter,” I am required to report all disclosures of threats or occurrences of sexual assault, interpersonal violence, and stalking to Mason’s Title IX Coordinator. If you wish to speak with someone confidentially, please contact the Student Support and Advocacy Center (703- 380-1434), Counseling and Psychological Services (703-993-2380), Student Health Services, or Mason’s Title IX Coordinator (703-993-8730; [cde@gmu.edu](mailto:cde@gmu.edu)).

## **OFFICE OF DISABILITY SERVICES**

I committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations for this class related to any sort of disability, please first visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Students who suspect that they have a disability, temporary or permanent, but do not have documentation are encouraged to contact DS for advice on how to obtain appropriate evaluation.

I encourage students who are considering using their accommodations to declare and discuss them with me as soon as possible, as I can only provide accommodations after receiving the authorizing documentation from Disability Services.

## **OTHER GMU RESOURCES**

There are numerous campus resources that are available to help you succeed. For more details, please see a list of some of these resources online at <http://ctfe.gmu.edu/teaching/student-support-resources-on-campus/>. A few of these include

- Counseling and Psychological Services
- Mason Food Pantry
- Student Support and Advocacy Center