

GGG 463: GIS ANALYSIS AND APPLICATION

COURSE SYLLABUS, FALL 2022, 3 CREDITS

INSTRUCTOR

Name: Dr. Timothy Leslie
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COURSE STRUCTURE

Meeting time(s): T 4:30 – 5:45pm
Location: Exploratory Hall 2103
Modality: 50% synchronous, 50% asynchronous
Course URL: mymasonportal.gmu.edu
Pre-Requisites: C or better in GGS 300, GGS 311
Textbook(s): No required textbook. All external content will be available electronically.

SECTION I – COURSE GOALS

Applying GIS through analysis is the art and science of investigating and sharing patterns in spatial data. 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.

An emphasis is placed on how to use geographic information analysis in strategic ways to build a set of technical and transferable skills. Students will work with a topic of their choosing, preferably focused on a meaningful real-world problem. This process begins through coursework to meet **Objective 1: Articulating and Refining a Geographic Research Question.**

To support your continued development as a GIS analyst, we will investigate the process of identifying and acquiring the information necessary to support a geographic project. These skills are core to **Objective 2: Gathering and Managing the Spatial Data Necessary to Answer a Geographic Research Question.**

With the necessary datasets in place and a relevant geographic question, a substantive portion of class will delve into topics such as spatial statistical analysis, temporal analysis, and data visualization. Here you will think about how to answer geographic problems in a robust and scientific manner. The expertise in these methodological areas will allow to achieve **Object 3: Identifying the Appropriate Spatial Method and Executing it Properly.**

The course concludes this scholarly project through the creation of research poster that accurately conveys what the data and analysis tells us about the world around us. This poster brings together the academic context, spatial methods, and presentation of results in a way that useful for disciplinary scholars and external stakeholders. The presentation and engagement here is critical to achieving **Objective 4: Applying Appropriate Scholarly and Geospatial Presentation Conventions.**

The content of this course was developed in alignment and with the support of the Mason Impact *Research and Scholarship Intensive* curriculum. This curriculum emphasizes the importance of student-led research projects and the development of the associated critical thinking and analysis skills.

SECTION II – LEARNING ACTIVITIES IN THIS COURSE

Students will work toward the course learning objectives in both online and in-person spaces.

Online modules provide the most direct course modality of course instruction. Through these modules you will demonstrate expertise across a range of knowledge bases after engaging relevant lectures and external materials. This class will teach the technical application elements in ESRI ArcPro. You are free to use open source (QGIS), command line (R), or other software. The points garnered through these online modules represent 45% of your overall grade.

We will meet weekly to and work through challenges and opportunities in GIS applications. Throughout the semester, students will make presentations on GIS applications that they have found beyond the course boundaries and will bring it back to the class. While much of the learning in our in-person meetings does not directly map to your course grade, in-class presentations represent 5% of your overall grade.

Finally, each student will participate in a course project. Evaluation of the project will be distributed throughout several updates and milestone submissions that come together to make a cohesive product. Each milestone submission is accompanied by a conversation and discussion with the course instructor. These milestones collectively account for 50% of your course grade.

TENTATIVE SCHEDULE (subject to change)

WEEKS	IN-CLASS
Week 1, AUG 23	Course Overview, Specification Grading
Week 2, AUG 30	Meta-discussion: Course Project and Context
Week 3, SEPT 6	Project Data Extravaganza
Week 4, SEPT 13	Reading Discussion: Programming's and GIS
Week 5, SEPT 20	“Let's Progress, not Regress”
Week 6, SEPT 27	Meta-discussion: What Makes Research Geographic?
Week 7, OCT 4	Meta-discussion: Feedback and Failure
OCT 11	NO CLASS - FALL BREAK
Week 8, OCT 18	The Matters of Presentation
Week 9, OCT 25	Meta Discussion: Multi-Method Research
Week 10, NOV 1	Reading Discussion: Geoprivacy
Week 11, NOV 8	NO CLASS - VETERANS DAY
Week 12, NOV 15	The Co-Location Quotient Story
Week 13, NOV 22	NO CLASS - THANKSGIVING
Week 14, NOV 29	Meta-discussion: Next Steps
Final Exam Period, DEC 13	NO CLASS - Project Submissions

SECTION III – SHARED ELEMENTS OF THE LEARNING PROCESS

MENTAL EXPECTATIONS

When part of this course, you are expected to be respectful of your peers and your instructor in both words and actions. This has several components:

- Make the decision to come to class. There is a strong positive correlation between the percentage of classes a student has attended in the course and the student's final grade for the semester. Do what it takes to come on time, as coming late to class disturbs class activities and our learning process.
 - George Mason's policy is that if the instructor does not arrive within 15 minutes that the course meeting for the day is cancelled. This seems like an anachronism, so instead I will inform students via e-mail in advance of class (with as much notice as possible) if class is cancelled for the day. I will also contact our departmental support staff if something happened on the way to work. Failing that, assume the worst happened to me. I ask that students make sure that my story gets the proper treatment on a *Law-and-Order* episode, and that I be played by James Spader.
 - No unauthorized guests will be permitted in class.
- Bring a desire to participate. Learning is an active exercise in engaging the material. Focus on class and refrain from activities that are unrelated to the class during course time, regardless of the screens present. Cell phones and other communicative devices are not generally part of the pedagogical elements of this course.
- Manage your time proactively and provide space for unexpected surprises. Keeping track of course deadlines and the upcoming assignments leads to substantially increased submission quality and lower stress levels. Allow for the fact that some assignments can take more time than expected, and that your classmates may work at a faster or slower pace than you do.

RESPECTING NAME PREFERENCE

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 institutional 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 to be addressed—including certain pronouns—I encourage you 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.

TECHNICAL CONSIDERATIONS

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.

- All course materials posted to Blackboard or other course site are private; any materials that identify specific students (via their name, voice, or image) are not to be shared with anyone not enrolled in this class.
- Live Video Conference Meetings (e.g. BB Collaborate, Zoom) that include audio or visual information from other students are to be viewed privately and not shared with others in your household.

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 for usage when they are speaking. At other times, I do not require cameras to be turned on but do appreciate it.

The ability to manage files without assistance is an underlying element of completing the course activities.

- You will likely want some form of portable (or easily accessible) electronic storage, as some of the files can become very large and numerous. I strongly suggest using a cloud service such as [OneDrive](#) (provided by Mason) or [Dropbox](#). Saving your work to a Mason machine or virtual machine is NOT reliable.
- Organizing your digital space is crucial to reliable progress and submission. I encourage developing a subfolder and naming convention that relies on something consistent such as dates or revision number (e.g. avoid “project-draft-TL-15_submitted_final_final”, instead try something along the lines of “ProjectText_Jan3”). Please save frequently while working on any assignments and keep separate backups.

Students seeking to use ESRI 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. Adobe products are limited to on-campus usage. Software keys for self-installation are not provided for any software.

When posting in an electronic space, where it is in the classroom chat or course discussion board, be cognizant of your grammar, spelling, diction, and tone. The same rules established for face-to-face discussions apply in these electronic spaces. Emoji or acronyms and abbreviations should be used judiciously.

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 are not to be shared.

Students must use their Mason email account to receive important University information, including messages related to this class.

- The Family Educational Rights and Privacy Act (FERPA) means that 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.

For elements of the course website not related to unlocking / viewing course content or direct laboratory material, I cannot serve as your technical support, and redirect you to [Mason ITS](#).

GRADING STRUCTURE

Each student in a course will be afforded the same opportunities, held to the same requirements, and evaluated according to the same criteria, except as required by university policies on the accommodation of students with disabilities. The expected grade breaks are the following:

A	A-	B	B-	C	D
100 - 92	91.9 - 87	86.9 - 82	81.9 - 77	76.9 - 71	70.9 - 65

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 or bring up concerns.

In general, there are no offers for extra credit opportunities in this class, and requests are not entertained. Extra credit is extra work, and students who are having difficulty completing the required coursework seldom have the

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

SUBMISSION CONSTRAINTS

All submissions will be done through Blackboard.

- For assignments with multiple submissions in Blackboard, only the grade of the most recent submission will be graded / counted.
- Assignments due on a university closure or delay date are still due on that day unless otherwise specified.
- Assignment submission occasionally causes students to demonstrate unusual behavior. Do not simultaneously email your submission to the instructor to 'verify that it's in.' Instead, you can view or download your files after uploading to confirm they are readable and is the complete and intended version.
- Unless otherwise specified, you have **one** attempt to take any quiz or exam. In person, no tests will be handed out after the first person to finish has turned in their exam.
- Unless otherwise requested, assignments should be submitted as PDF, with in-line text and tables (not screenshots).
- No links to documents stored on services such as Google Docs / Drive will be accepted, only the actual file will be graded.
- Students have 7 days after an assignment is graded to ask for reviews on the grade. All requests for grade considerations must be done via email.
- Drafts are not given feedback or graded unless students come to office hours with specific questions regarding written drafts.
- Students are responsible for ensuring that their submitted files are readable. Any corrupted file is treated as a non-submission.
- Blackboard is not a good mechanism for feedback. If you are interested in more detailed feedback on graded material, please follow up either in class or through a scheduled meeting.
- Students can expect to have grades on submitted material within 4 business days of submission. Please wait to contact the instructor for at least that long.

LATE SUBMISSIONS

Due dates are a part of all elements of the course. As a general policy, late submissions are penalized, and in some cases not permitted. Bad things can happen at the last minute, and I encourage you to avoid planning for submissions at deadlines. While students will not be responsible for (documented) campus or blackboard problems that disallow submission, there are no accommodations for personal power outages, software glitches, or hardware malfunctions. Missing assignments are scored with a zero.

- The standard late work penalty is a 5% deduction for submissions less than 24 hours late, with a small but undisclosed grace period on submissions around the due date time. The penalty grows to 15% after 24 hours of the due date. These deductions are based on the total points possible for the relevant submission.
- There are posted end-of-semester cutoffs for all submissions to be graded, late or otherwise.

- If a student will miss classes due to a religious observance or participation in a University activity, they are obligated to notify the instructor within the first two weeks of the semester (University Policy AP.1.6.1). In such cases, a reasonable alternative opportunity will be provided.
- Valid documentation that could justify full credit for late submissions could include a conference program that includes your presentation, military obligations, or conflicts with university-sanctioned activities documented by an appropriate university official.

LETTERS OF RECOMMENDATION

I can only write a letter of recommendation for you if you have completed a semester in an upper division or graduate course I have taught with a B or above.

CONTACTING ME

I am available for support outside of class through two mechanisms: (1) appointments through zoom, and (2) email. Appointments are better suited for answering questions along the lines “How do I do ___” or “What are your thoughts on ___”, while email is for responses that are yes/no in nature. If I believe your emailed concern is sufficiently complex that an email response will be insufficient, I will generally ask you to schedule a meeting or discuss it with me in class.

1) I use Zoom for outside-of-class appointments rather than relying on fixed office hours. To schedule into my available time, use Calendly at <https://calendly.com/tleslie-gmu/office-hours>. However, if you still cannot find an appointment that aligns with your availability, please email me with at least three possible meeting times and we will find a mutually convenient alternative.

2) My email is listed at the top of this syllabus. **I am usually quick to respond to student e-mails**, within reason. Students who e-mail me Monday - Thursday can ordinarily expect a response within 24 hours, often sooner. Students who e-mail after 5 PM on Thursday 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.

Student e-mails tend to do several things that try my patience. My policy is that I will not respond to certain e-mails students send. These include emails surrounding:

- The student could answer his/her own inquiry by reading the syllabus, watching the relevant videos, or reading the instructions fully. I have endeavored to provide useful content – if there are missing elements, please let me know and remedies will be applied.
- The student missed or will miss class. I do not need to know the exact reason for a missed class, and trust that you are making the best decision for you. An e-mail is likely unnecessary unless the absence involves an exam.
- The student wants to know what topics were missed during a class that was missed. The answer is always “you missed what was on the syllabus.”
- The student is protesting a grade without reference to specific points of objection. Students interested in improving their knowledge of material should schedule a meeting.
- The student is requesting that a module be made accessible without meeting the necessary requirements. The answer is “no”.
- The student is asking to round up a grade. The answer is “no”.
- The student is asking for an extra credit opportunity, often one that is specific to them. This is addressed elsewhere in the syllabus, the answer is “no”.

DIVERSITY AND INCLUSION

George Mason University supports and recognizes that an inclusive and welcoming community is linked to our strategic goals and key to a high-quality education. 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. I share this vision and am committed to its implementation at all levels and in all ways.

Diversity is broadly defined to include such characteristics as, but not limited to, race, economic status, ethnicity, gender expression and identity, military service, national origin, first language, familial circumstances, religion, age, and disability. Diversity also entails different viewpoints, philosophies, and perspectives.

We welcome and value individuals for their unique contributions, as every student has contributions that no one else can make. Attention to the breadth of diversity will help promote a culture of inclusion and belonging, where diverse opinions, backgrounds, and practices can be voiced, heard, and respected. All aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. 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 content presented in this course comes from an academic history that is overwhelming white and male. I will do what is within my power to identify and step beyond racial, gender, and other boundaries in this shared educational space. All members of the learning environment are encouraged to engage with the material personally, but to also be open to opportunities to grow and learn from experiences different than their own. You are responsible for the energy, words, and behaviors you bring into the classroom.

The University promotes continuous monitoring and self-assessment regarding inclusivity. Please contact me immediately if any elements of the course or institution, including my own statements or actions, are inconsistent with the aspirations listed here, so that remedies can be implemented.

OFFICE OF DISABILITY SERVICES

I am committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people.

Federal law mandates the provision of services at the university-level to qualified students 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, detailed information about the Disability Services registration process is posted on their website. 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.

SEXUAL HARASSMENT, SEXUAL 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 to promote

community well-being and student success. We encourage any community member who believes that they have been sexually harassed, assaulted, or subjected to sexual misconduct to seek assistance and support.

As a faculty member and designated “Responsible Employee,” 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).

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. There is not sufficient space here to list every possible behavior or action that constitutes cheating. Any action that undermines the academic integrity of the course, the students, or the university may constitute a violation of the policy. Three fundamental and rather simple principles to always follow:

- (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 established style). 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.

Even with independent submissions, 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. If the assignment involves collaborative work, the names of all contributors should appear on the work.

Participation in some kinds of 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. Posting any course materials on any web site or providing any course content to someone who is not a current student without my written permission will be treated as academic misconduct, regardless of intent.

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. Honor Code referrals on exams or course elements worth more than 10% of the overall grade will recommend a sanction of at least course failure, with other referrals recommending at least a 0 on the relevant assignment and letter grade deduction. The official GMU policies are available from the [Office of Academic Integrity](#).

MODIFICATIONS

Occasionally circumstances that arise during the semester that necessitate changes. Should they occur, any syllabus changes or additions will be communicated and considered final.