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**Dept of Geography and Geoinformation Sciences
GGS 311-001: Intro to Geographic Info Systems – Spring 2025**

**Class time:** Tuesdays and Thursdays from 1:30 pm – 2:45 pm

**Location** 2103 Exploratory Hall, in person/face-to-face

**& Modality:**

**Learning** This course will be hosted on Canvas for the Spring 2025 semester. Please ensure you

**Management** are familiar with accessing and navigating this platform. Resources and support are

**System:** available at: <https://lms.gmu.edu/getting-started-students/> to help you get started. If you have any questions, do not hesitate to reach out to me or contact the [ITS Support Center](https://its.gmu.edu/service/its-support-center/) for assistance.

**Instructor:** Lori Mandable (she/her)

Exploratory Hall, Room 2204
lmandabl@gmu.edu

[Zoom Personal Meeting Room](https://gmu.zoom.us/j/2749469680)

Office: 703-993-3923

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**Learning** Ethan Miles

**Assistant:** Exploratory Hall, Room 2400 C/D

 emiles22@gmu.edu

 Group Me: <https://groupme.com/join_group/105493846/hTWvR86i>

**Graduate** Bonface Osoro

**Teaching** borsoro@gmu.edu

**Assistant:**

**Office hours:** Lori: Monday – Thursday from 3:00pm – 4:00pm in 2204 Exploratory Hall and via [Zoom](https://gmu.zoom.us/j/2749469680) (I’m happy to schedule an appointment if these times don’t work for you – just ask!)

Ethan: Tuesdays from 2:45pm-4pm in classroom or Exploratory Hall Room 2102 (GGS Lab)

Bonface:

# Course Description

GGS 311 is an introductory course in Geographic 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 the textbook and lecture. While this course is not specifically a software course, you must show proficiency with the software to pass the class.

# Course Goals

Welcome to GGS 311! The goals of this course are to help spark your curiosity about what Geographic Information Systems are and how they can be harnessed to answer questions and solve problems. The course is divided into two parts: a lecture component where concepts/theories are described, and a lab component to apply the concepts/theories learned in lecture via hands-on exercises that utilize real world datasets.

* Describe the concepts of GIS – how it is structured, the process flow of solving a problem using GIS, and its analytical capabilities
* Explain how GIS integrates data from GPS and RS to provide meaningful geovisualizations impacting day-to-day life
* Utilize geospatial data and software to analyze data, make basic map products and story maps.

## Mason Impact Course

This course is designated as a Mason Impact Course. Mason Impact courses are part of a Provost initiative “that prepares students to tackle significant global questions and challenges by investigating meaningful questions, engaging multiple perspectives and creating new knowledge within the context of Undergraduate Research, Civic Engagement, Entrepreneurship and Global Activities.”

Learning Outcomes:

* + - 1. Describe the fundamental concepts and basic proficiency in the areas of geoinformation science and technology, gaining an understanding of how data and knowledge are generated and communicated, and how they can be used to address questions or problems in disciplines and in society.
			2. Demonstrate awareness of fundamental remote sensing and spatial analysis techniques and how these techniques provide multiple perspectives working collaboratively across multiple social and environmental contexts, and how to engage ethically with the subject and others.
			3. Investigate a meaningful question: Students will use inquiry skills to articulate a question; engage in an inquiry process; and situate the concepts, practices, or results within a broader context.
* Students will be able to ask increasingly complex questions about significant problems, debates, or challenges.
* Students will be able to evaluate and choose inquiry methods that are appropriate to a project.
* Students will be able to explain how a project has value to local, civic, professional, scholarly, or global contexts.
	+ - 1. Understand how knowledge is visualized and disseminated to the public through basic proficiency in map creation and design principles, including thematic map display, employment of map projections and cartographic design.
			2. Demonstrate how to access different sources of data, demonstrate the process of creating data, and discuss the fundamental concepts of data quality.

# Required Materials

* *GIS Fundamentals: A First Text on Geographic Information Systems,7th Ed*. (either print version or eText) by Paul Bolstad & Steven Manson, ISBN: 9780971764750. The text can be rented or purchased at the GMU Bookstore, 3rd party sites (Amazon, etc.) or via the publisher, XanEdu.
* Textbook website: <http://www.paulbolstad.net/gisbook.html>
* USB Drive -**16GB** or larger of free space or access to MS OneDrive.
* Access to a computer with an operating system of at least Windows 10, Mac OSX 10.13 or higher and a stable broadband internet connection. Students have access to such computers in the GGS Computer Lab, 2102 Exploratory Hall, which is open to students 24/7 via their student ID.
* Your curiosity and desire to learn!

# Grading

Grades for this course are based on individual performance in the following areas:

 Lab Assignments 220 points (20 points each)

 Quizzes: 50 points (10 points each)

 In-Class Activities 60 points (20 points each)

 Exam 1: 45 points

 Exam 2: 45 points

 Final Exam: 80 points

 Total: 500 points

Grades will be determined according to the following schema:

|  |  |  |
| --- | --- | --- |
| Grade | Percentage | Points |
| A+, GPA 4.00 points earned | 97% and above | 485-500 |
| A, GPA 4.00 points earned | 94% - 96.99% | 470-484 |
| A-, GPA 3.67 points earned | 90% - 93.99% | 450-469 |
| B+, GPA 3.33 points earned | 87% - 89.99% | 435-449 |
| B, GPA 3.00 points earned | 84% - 86.99% | 420-434 |
| B-, GPA 2.67 points earned | 80% - 83.99% | 400-419 |
| C+, GPA 2.33 points earned | 77% - 79.99% | 385-399 |
| C, GPA 2.00 points earned | 74% - 76.99% | 370-384 |
| C-, GPA 1.67 points earned | 70% - 73.99% | 350-369 |
| D, GPA 1.00 points earned | 60% - 69.99% | 300-349 |
| F, GPA 0.00 points earned | 59.99% and below | 0-299 |

**Lab Assignments:** Each lecture topic will be connected to a hands-on geoinformation lab assignment, with a total of 13 assigned labs over the course of the semester. Only 11 of those 13 labs will count toward the lab portion of your grade. Each lab is worth 20 points, and I will drop the 2 lowest lab grades from labs 1-12 in computing the score for a total of 200 points. The only exception to this is that Lab 13 is MANDATORY and CANNOT be dropped. It is the final, comprehensive lab of the semester requiring you to utilize all the skills you have developed over the course of the semester in ArcGIS.

Lab exercises will be available on Canvas. I recommend downloading and/or printing the exercises prior to beginning your work. You may complete the exercises in class during lab days listed on the syllabus, in the GGS Computer Lab and/or at home. You should read the lab in advance, and review/note new procedures or activities. Labs will require more than the 1.25-hour class period to complete. One tip: Save the labs along the way – they make excellent references when doing more complex labs during the semester.

The GGS computer lab in Exploratory Hall 2102 has registered copies of ArcGIS Pro, which are accessible 24/7 via your GMU ID. Students registered for this class automatically receive permission to utilize this lab. Registered students also have access to ESRI’s ArcGIS Pro for use at home via their Mason accounts.

All lab assignments are to be completed using ArcGIS Pro, then submitted via Canvas. 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 Assignment” when complete – you should see a bunch of confetti appear on the screen. You may submit answers as many times as you would like up to the time due, though only the final submission will be graded.

Please note you may work together on lab assignments, but **you each must do all parts of each lab individually** and **submit your own work for the entire portion of each lab assignment**. Your grade is for individual effort. Shared/copied files/maps from other students will be construed as cheating, with all parties involved reported to the Office of Academic Integrity in accordance with university policy.

Lab due dates are listed on the syllabus and students have until **11:59pm** of that date to submit their labs. Makeup labs will not be given, so please anticipate conflicts and contact the instructor in advance of an absence. Labs are only accepted through the Canvas course site! Labs MUST BE submitted as **pdf, docx or jpeg files**. **Please do not send files of any other type – Canvas CANNOT read them, and it will result in a grade of 0 points.**

**Quizzes:** Quizzes on course topics will be given at random and can best be prepared by answering the questions at the back of each chapter.

**In Class Activities:** We will have a combination of 3 required in class activities that each will count 20

points for a total of 60 points.

**Exams:** There will be three exams for this course. Exam 1 will cover Chapters 1-6 of the text, and Exam 2 will cover Chapters 7-10 of the text. The Final Exam will be comprehensive, with more emphasis on Chapters 11-15 of the text. All exams will be given online via Canvas.

**Course Evaluations:** There is one group opportunity to earn bonus points, through completion of the course evaluation at the end of the semester. If the class has a submission rate of 80%, each student will be awarded an additional 5 bonus points. If the class has a submission rate of 90%, each student will be awarded an additional 10 bonus points. If there is 100% participation in the course evaluation, then each student will receive 15 bonus points.

Course Policies

Technology Information

* **How do I access course material?** You can access Canvas through <https://canvas.gmu.edu>. After logging in with your Mason ID and password, look on the far left and select the Courses tab. Our course will be listed, so click on the course to access material.

Attendance

* **What is the attendance policy?** We highly encourage students to attend all live and recorded sessions of class. Scientific studies conclusively correlate academic success with regular class attendance. While the instructor does not take attendance, there are fifteen graded class participation activities that are meant to aid in learning the material and function as an incentive to attend class regularly. Note: some of the activities are not listed in the Course Schedule!
* **What happens if I miss classwork because I have car issues, am sick, live with someone who falls ill or takes care of someone who falls ill?** If you must miss a class, please email the instructor **PRIOR** to class starting for that day. It is the **student’s responsibility** to meet with the instructor and/or Learning Assistant to follow up on any missed material. Again, class participation activities **CANNOT** be made up.
* **What if I am unable to make it to class for an extended period?** If students have an extended absence (i.e., beyond one week or one that includes the submission of a major assignment), they should consult the professor to develop a work plan.

Late Work

* The best way to deal with late assignments is to avoid turning them in late! Time management, course planning and following the schedule are intended to help students submit assignments in a timely fashion. However, there will be circumstances in which assignments might be late.
* **When is my lab assignment late?** Late lab assignments are determined by Canvas. If Canvas says it was submitted after the due date and time, then it is late.
* **What if my lab assignment is submitted and it is within 48 hours of the due date/time?** This is the grace period. Your lab assignment is still eligible for full credit, but it will not feature feedback (only a grade).
* **What if my lab assignment is turned in 48 hours after the due date/time?** Your lab assignment will receive zero points with no feedback.
* **What if I have ODS accommodations that state I can have extra time on work?** If you have ODS accommodations, please submit them to the professor as soon as possible. If your accommodations state that you have extra time, please inform the professor that you need the extra time **PRIOR** to the due date of the quiz, in class participation activity, lab assignment or exam.

Communication

* **Communication in this course is highly encouraged and is a two-way street**. The instructor, Graduate Teaching Assistant, and Learning Assistant are here to help you learn and we all benefit from hearing from students when they have questions and/or concerns. Please feel free to contact any/all of us in class, during office hours, in the hallway, via email, Discord, Zoom or MS Teams.
* **Name and pronoun use:** If you wish, please share your name and gender pronouns with me and indicate how best to address you in class and via email. I use she/her/hers for myself and you may address me as Lori in email and verbally. You can also use this guide (<https://registrar.gmu.edu/updating-chosen-name-pronouns/>) to change pronouns and your chosen name in Canvas.
* **Can I use interpretative dance to communicate with you?** While a dance would be entertaining, I ask (and the Commonwealth stipulates that you are required) for students to use their official GMU email account to communicate, to lessen issues with miscommunication. 😊
* **How do you feel about asking questions during class?** I welcome them! Feel free to interrupt to ask questions!
* **What about class discussions – what are the expectations?** Discussions will regularly occur in class. Please be kind and respectful to fellow students, the Learning Assistant(s), and the Professor. Remember your audience and use proper professional etiquette and language. We all bring our wonderful and unique experiences and perspectives to class. A foundation of respect and acknowledgement of diverse perspectives enables everyone to benefit from our collected insights.
* **What if I need to take a phone call in class?** Please mute cell phones prior to class commencing. If you do need to receive an incoming call during the class period, please step outside the classroom to take the call.
* **What if that amazing item I have been wanting for months goes on sale during class and I must use my computer to buy it?** We will frequently be using the internet to go over ArcGIS Pro functionality. Please be respectful of your peers and your instructors and do not engage in activities that are unrelated to the class on the class computers and any private electronic devices brought into the classroom – remember that others can also peer over your shoulder and can see what you are doing! Such disruptions show a lack of professionalism.
* **When do you answer email?** The instructor will return emails and text messages as quickly as possible, Monday through Friday from 10:00am-6:00pm. If you send an email on Saturday or Sunday, it could be a full 24-48 hours before the instructor is able to respond.

Grading

* **How should I cite a source on the maps I submit?** Each map submitted for grading is required to have a source of information identified. In many cases, the first page of the lab will discuss where the data originated, but if it does not provide that information, you may cite the text as your source (ex. Source: Bolstad Text). For Lab 5, you will be collecting the data using Trimble GPS devices, so you will reference Trimble GPS TDC6 #XX (with XX being the number on the device).
* **When should I cite a source in written work?** If you do not already have first-hand knowledge of the subject matter and/or data, you need to **fully cite your source in APA format** and not as a website nor hyperlink. Failure to do so will result in being reported as a violation of Academic Standards, which are outlined [here](#AcademStd).
* **How do you manage the use of Generative-AI in grading?** Use of Generative-AI tools should be used following the fundamental principles of the Honor Code. This includes being honest about the use of these tools for submitted work and **including citations** when using the work of others, whether individual people or Generative-AI tools.

Please remember that Generative AI (GenAI) tools have limitations: they can hallucinate (create incorrect statements and provide fake citations), create inaccurate code, and provide offensive images or examples. They have been trained on limited sources that may contain biases and create biased output. The use of these tools creates other ethical quandaries: the algorithms rely on work done by other humans and do not give credit to their sources, and the algorithm adjustments are often completed by workers who may not be fully compensated for their labor and emotional stress. Lastly, reliance on these tools may stifle your own creativity and impede the learning process. Your decision to use Generative-AI tools should always consider these limitations.

* **What if I have a question about my grade?** If you have a question about a graded assignment, please email the professor with **specific** concerns. I am happy to provide additional feedback so that you can improve your performance on the next assignment. Unless there is a calculation error or unmistakable evidence that aspects of criteria were overlooked, your grade will stay the same.
* **When should I expect to receive my graded assignment back?** The turnaround time is usually one week.

University Policies

* **Catalog:** The University Catalog (http://catalog.gmu.edu) is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at [http://universitypolicy.gmu.edu/.](http://universitypolicy.gmu.edu/) All members of the university community are responsible for knowing and following established policies.
* **Inclement Weather and Class Cancelation:** GMU posts closings on its website (www.gmu.edu.). You can receive notification from Mason Alerts via email or text to a cell phone; please let the instructor know if you need more information.

If the campus closes, or if a class meeting needs to be canceled or adjusted due to weather or other concern, students should check Canvas [or other instruction as appropriate] for updates on how to continue learning and for information about any changes to events or assignments.

* **Registration:** Instructors do not have the capacity to remove students from class enrollment, therefore students are responsible for any changes in enrollment.
* **George Mason Diversity Statement**:

*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.*

*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 outreach.*

*Acknowledging that the attainment of diversity and inclusion are dynamic and continuous processes, and that the larger societal setting has an evolving socio-cultural understanding of diversity and inclusion, Mason seeks to continuously improve its environment. To this end, the University promotes continuous monitoring and self-assessment regarding diversity. The aim is to incorporate diversity and inclusion within the philosophies and actions of the individual, group, and organization, and to make improvements as needed.*

* **Academic Standards:**

*Academic Standards exist to promote authentic scholarship, support the institution’s goal of maintaining high standards of academic excellence, and encourage continued ethical behavior of faculty and students to cultivate an educational community which values integrity and produces graduates who carry this commitment forward into professional practice.*

*As members of the George Mason University community, we are committed to fostering an environment of trust, respect, and scholarly excellence. Our academic standards are the foundation of this commitment, guiding our behavior and interactions within this academic community. The practices for implementing these standards adapt to modern practices, disciplinary contexts, and technological advancements. Our standards are embodied in our courses, policies, and scholarship, and are upheld in the following principles:*

* + ***Honesty:*** *Providing accurate information in all academic endeavors, including communications, assignments, and examinations.*
	+ ***Acknowledgement:*** *Giving proper credit for all contributions to one’s work. This involves the use of accurate citations and references for any ideas, words, or materials created by others in the style appropriate to the discipline. It also includes acknowledging shared authorship in group projects, co-authored pieces, and project reports.*
	+ ***Uniqueness of Work:*** *Ensuring that all submitted work is the result of one’s own effort and is original, including free from self-plagiarism. This principle extends to written assignments, code, presentations, exams, and all other forms of academic work.*

*Violations of these standards—including but not limited to plagiarism, fabrication, and cheating—are taken seriously and will be addressed in accordance with university policies. The process for reporting, investigating, and adjudicating violations is* [*outlined in the university's procedures*](https://academicstandards.gmu.edu/)*. Consequences of violations may include academic sanctions, disciplinary actions, and other measures necessary to uphold the integrity of our academic community.*

*The principles outlined in these academic standards reflect our collective commitment to upholding the highest standards of honesty, acknowledgement, and uniqueness of work. By adhering to these principles, we ensure the continued excellence and integrity of George Mason University's academic community.*

***Student responsibility:*** *Students are responsible for understanding how these general expectations regarding academic standards apply to each course, assignment, or exam they participate in; students should ask their instructor for clarification on any aspect that is not clear to them.*

* **Accommodations for Students with Disabilities**

*Disability Services at George Mason University is committed to upholding the letter and spirit of 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, please visit* [*https://ds.gmu.edu/*](https://ds.gmu.edu/) *for detailed information about the Disability Services registration process. Disability Services is in Student Union Building I (SUB I), Suite 2500. Email:* *ods@gmu.edu**. Phone: (703) 993-2474.*

***Student responsibility****: Students are responsible for registering with Disability Services and communicating about their approved accommodations with their instructor in advance of any relevant class meeting, assignment, or exam.*

* **FERPA and Use of GMU Email Addresses for Course Communication**

*The* [*Family Educational Rights and Privacy Act (FERPA)*](https://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html) *governs the disclosure of* [*education records for eligible students*](https://registrar.gmu.edu/ferpa/) *and is an essential aspect of any course.* ***Students must use their GMU email account*** *to receive important University information, including communications related to this class. Instructors will not respond to messages sent from or send messages regarding course content to a non-GMU email address.*

***Student responsibility****: Students are responsible for checking their GMU email regularly for course-related information, and/or ensuring that GMU email messages are forwarded to an account they do check.*

* **Title IX Resources and Required Reporting**

*As a part of George Mason University’s commitment to providing a safe and non-discriminatory learning, living, and working environment for all members of the University community, the University does not discriminate based on sex or gender in any of its education or employment programs and activities. Accordingly,* ***all
non-confidential employees, including your faculty member, have a legal requirement to report to the Title IX Coordinator, all relevant details obtained directly or indirectly about any incident of Prohibited Conduct*** *(such as sexual harassment, sexual assault, gender-based stalking, dating/domestic violence). Upon notifying the Title IX Coordinator of possible Prohibited Conduct, the Title IX Coordinator will assess the report and determine if outreach is required. If outreach is required, the individual the report is about (the “Complainant”) will receive a communication, in the form of an email, offering that person the option to meet with a representative of the Title IX office.*

*For more information about non-confidential employees, resources, and Prohibited Conduct, please see* [*University Policy 1202*](https://universitypolicy.gmu.edu/policies/sexual-harassment-policy/)*: Sexual and Gender-Based Misconduct and Other Forms of Interpersonal Violence. Questions regarding Title IX can be directed to the Title IX Coordinator via email to**TitleIX@gmu.edu**, by phone at 703-993-8730, or in person on the Fairfax campus in Aquia 373.*

***Student opportunity****:  If you prefer to speak to someone* ***confidentially****, please contact one of Mason’s confidential employees in Student Support and Advocacy (*[*SSAC*](https://ssac.gmu.edu/)*), Counseling and Psychological Services (*[*CAPS*](https://caps.gmu.edu/)*), Student Health Services (*[*SHS*](https://shs.gmu.edu/)*), and/or the* [*Office of the University Ombudsperson*](https://ombuds.gmu.edu/)*.*

* **Additional Support Services:** Several departments exist to aid students in a wide variety of ways and are listed on the last pages of this syllabus.

## GGS 311 - Course Outline 1

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| --- | --- | --- | --- |
| Week | Date | Chapter(s) Covered | Due Dates\*\* |
| 1 | Tues 1/21 | Course Introduction |  |
| Thur 1/23 | Chapters 1-2: Intro to GIS & Data Models |  |
| 2 | Tues 1/28 | Lab 1: Intro to ArcGIS Pro |  |
| Thur 1/30 | Chapter 3: Geodesy, Datums, Map Projections & Coordinate Systems |  |
| 3 | Tues 2/4 | Finish Chapter 3 Lecture | **Lab 1 Due** |
| Thur 2/6 | Lab 2: Projections |  |
| 4 | Tues 2/11 | Chapter 4: Maps, Data Entry, Editing & Output |  |
|  | Thur 2/13 | Lab 3: Digitizing | **Lab 2 Due** |
| 5 | Tues 2/18 | Finish Chapter 4 Lecture |  |
| Thur 2/20 | Lab 4: Topology | **Lab 3 Due** |
| 6 | Tues 2/25 | Chapters 5-6: Global Satellite Navigation & Aerial/Satellite Images |  |
|  | Thur 2/27 | Lab 5: Data Collection with Smartphones |  |
| 7 | Tues 3/4  | Exam 1 Review | **Lab 4 Due** |
| Thur 3/6 | **ONLINE (Canvas) Exam 1 – Chp 1-6 – No In Person Class** |
| 8 | Tues 3/11 | **SPRING BREAK** |
| Thur 3/13 |
| 9 | Tues 3/18 | Chapter 7: Digital Data | **Lab 5 Due** |
| Thur 3/20 | Lab 6: Digital Data & Tables |  |
| 10 | Tues 3/25 | Chapter 8: Attribute Data & TablesLab 7: Tables |  |
|  | Thur 3/27 | Finish Chapter 8 LectureChapter 9: Basic Spatial Analysis | **Lab 6 Due** |
| 11 | Tues 4/1 | Finish Chapter 9 Lecture Lab 8: Spatial Selection, etc. | **Lab 7 Due** |
| Thur 4/3 | Lab 9: Buffering & Overlay |  |
| 12 | Tues 4/8 | Chapter 10: Raster Analyses | **Lab 8 Due** |
|  | Thur 4/10 | Lab 10: Topics in Raster AnalysisExam 2 Review | **Lab 9 Due** |
| 13 | Tues 4/15 | **ONLINE (Canvas) Exam 2 – Chp 7-10 – No In Person Class** |
| Thur 4/17 | Chapter 11: Terrain Analyses | **Lab 10 Due** |
| 14 | Tues 4/22 | Lab 11: Terrain Analysis |  |
|  | Thur 4/24 | Chapter 12: Spatial EstimationLab 12: Interpolation Techniques |  |
| 15 | Tues 4/29 | Chapter 13: Spatial Models & ModelingLab 13: Intro to Cartographic Modeling | **Lab 11 Due** |
| Thur 5/1 | Chapters 14 & 15: Data Standards & Data Quality; New Developments in GIS and Final Exam Review | **Lab 12 Due** |
| 16 | May 6-12 | **Comprehensive FINAL EXAM (Chp 1-15)****ONLINE (Canvas)** | **Lab 13 and Final Exam Due May 12th, 2025** |

**\*Notes:** 1This is a flexible course outline. The instructor reserves the right to make changes when necessary. Students will be notified of any changes.\*\* Items that are due must be submitted by 11:59pm Eastern Time on the dates indicated above for grading consideration.

**Student Support Services:**

|  |  |
| --- | --- |
| NAME OF RESOURCE | DESCRIPTION OF RESOURCE |
| [Academic Advising](https://advising.gmu.edu/) | [www.advising.gmu.edu](http://www.advising.gmu.edu)  |
| [Assistive Technology Initiative](https://ati.gmu.edu/) | **Aquia Building Rm. 238 703-993-4329** [**www.ati.gmu.edu**](http://www.ati.gmu.edu)Manages the production of accessible text for Mason students with disabilities. They also ensure access to information technology and communications to the entire university community using adaptive equipment and provision of technical assistance. |
| [Center for Culture, Equity, and Empowerment (formerly ODIME and LBGTQ+)](https://ccee.gmu.edu/) | **SUB I Room 2400 703-993-2700** [**www.ccee.gmu.edu**](http://www.ccee.gmu.edu)Leverages programs and services focused on advocacy and direct student support to strengthen equity and inclusion at George Mason University. Our advising fosters opportunities for identity development, cross-cultural engagement, and inclusive learning communities, affirming the indivisible aspects of all our identities. Our three areas: [Student Access and Equity (SAE)](https://ccee.gmu.edu/sae/), [Student Engagement for Racial Justice (SERJ)](https://ccee.gmu.edu/serj/), and [LGBTQ+ Resources](https://ccee.gmu.edu/lgbtq-resources/), serve as resources to those in the Mason Community who seek to meaningfully engage and interact with people with different identities and intersections to co-create an equitable campus environment. |
| [Counseling and Psychological Services](https://caps.gmu.edu/) | **SUB I Room 3129 703-993-2380** [**www.caps.gmu.edu**](http://www.caps.gmu.edu)Students can take advantage of psychological services, a variety of learning services, multicultural services, and educational programs that support students’ educational goals. |
| [Disability Services](https://ds.gmu.edu/) | **SUB I Room 2500 703-993-2474** [**www.ds.gmu.edu**](http://www.ds.gmu.edu)Implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. |
| [International Programs and Services](https://oips.gmu.edu/) | **SUB I Room 4300 703-993-2970** [**www.oips.gmu.edu**](http://www.oips.gmu.edu)Provides guidance to students and scholars studying and working at George Mason University on immigration, employment and taxation, and adjustment issues, while fostering cross-cultural understanding through programs highlighting global themes. |
| [Learning Services](https://learningservices.gmu.edu/) | **SUB I Room 3129 703-993-2380** [**www.learningservices.gmu.edu**](http://www.learningservices.gmu.edu) Provides a variety of experience-based learning opportunities through which students explore a wide range of academic concerns. Services include support to students with learning differences, individual study skills counseling, individualized programs of study, and provision of tutoring resources. Presentations on a variety of academic skill topics are available to the university community. The programs are open to all George Mason University students free of charge. Services are confidential and use of these services does not become part of the student’s academic record. |
| [Mason Student Services Center](https://masonec.gmu.edu/) | **SUB I Room 1003** [**www.mssc.gmu.edu**](http://www.mssc.gmu.edu)Provides one-stop, integrated information and referrals regarding admissions, registrar, student accounts, and financial aid. |
| [Mathematics Tutoring Center](http://math.gmu.edu/tutor-center.php) | **Exploratory Hall 703-993-3622** [**www.science.gmu.edu/academics/departments-units/mathematical-sciences/math-tutoring**](http://www.science.gmu.edu/academics/departments-units/mathematical-sciences/math-tutoring)Offers tutoring on a walk-in basis for all George Mason University students who are enrolled in math courses up to MATH 290. |
| [Office of Academic Integrity](https://oai.gmu.edu/) | **SUB I Room 4100 703-993-6209** [**www.oai.gmu.edu**](http://www.oai.gmu.edu)Provides information on the honor code and resources for students and faculty. |
| [Office of Coalition Building and Diversity Education (CBDE)](https://cbde.gmu.edu/) | **SUB I Room 2400 703-993-2700** [**www.cbde.gmu.edu**](http://www.cbde.gmu.edu)Through collective and collaborative work with campus and community partners, supports, builds, and enhances the understanding of interpersonal identities to respond to systemic inequities, through engagement, advocacy, and education. CBDE aims to be a catalyst for change by creating, promoting, and sustaining an inclusive and equitable campus community. |
| [Office of Compliance, Diversity and Ethics](https://diversity.gmu.edu/) | **Aquia Building Room 373 703-993-8730** [**www.cde.gmu.edu**](http://www.cde.gmu.edu)The Office of Compliance, Diversity and Ethics provides leadership and support on matters relating to equity, diversity, access, respect, and inclusiveness for all members of the George Mason University community.  |
| [Office of Military Service](https://military.gmu.edu/support/services) | **SUB I 703-993-1316** [**www.military.gmu.edu**](http://www.military.gmu.edu)Assists U.S. Military veterans, their dependents, and survivors with navigating the complex benefits process. Also provides career assistance and social opportunities for military and veteran students. |
| [Safe Zone](https://lgbtq.gmu.edu/safe-zone/) | **SUB I Room 2200 703-993-2702** [**www.lgbtq.gmu.edu/safe-zone/**](http://www.lgbtq.gmu.edu/safe-zone/) Creates a safer, more welcoming and inclusive campus environment to strengthen community and encourage networking among faculty, staff, and students toward the goal of supporting the well-being of LGBTQ people. |
| [Social Action and Integrative Learning (SAIL)](https://sail.gmu.edu/) | **Enterprise Hall Room 442 703-993-2900** [**www.sail.gmu.edu**](http://www.sail.gmu.edu)Fosters experiential learning opportunities on campus, regionally, and globally for the Mason community with a particular emphasis on effecting positive social change. SAIL is Mason’s home for service-learning initiatives. |
| [Student Conduct](https://studentconduct.gmu.edu/) | **SUB I Room 4100 703-993-6209** [**www.studentconduct.gmu.edu**](http://www.studentconduct.gmu.edu) Provides information about university policies, the student conduct process, and resources for faculty related to addressing student behaviors of concerns and other disruptive behaviors. |
| [Student Health Services](https://shs.gmu.edu/) | **SUB I Room 2300 703-993-2831** [**www.shs.gmu.edu**](http://www.shs.gmu.edu)Provides high quality health care, counseling, education, and prevention services in support of student learning and retention. |
| [Student Support and Advocacy Center](https://ssac.gmu.edu/) | **SUB I Room 3200 703-993-3686** [**www.ssac.gmu.edu**](http://www.ssac.gmu.edu)Provides comprehensive services for students to foster the safety and well-being of the Mason community. SSAC services include assisting students who are encountering barriers to their academic success or personal growth, interpersonal violence prevention, alcohol and drug education, health promotion/healthy relationships, student crisis intervention, and connecting students with appropriate campus and off-campus resources. |
| [University Career Services](https://careers.gmu.edu/) | **SUB I Room 3400 703-993-2370** [**www.careers.gmu.edu**](http://www.careers.gmu.edu)Provides information on career choices, internships and employment, and graduate and professional school. |
| [UNIV Courses and Programs](https://transitions.gmu.edu/) | [**www.transitions.gmu.edu**](http://www.transitions.gmu.edu)Serves as a resource and development center for undergraduates, providing courses, programs, and services to facilitate students’ personal and academic success. |
| [University Life](https://ulife.gmu.edu/) | **Merten Hall Room 5200 703-993-8760** [**www.ulife.gmu.edu**](http://www.ulife.gmu.edu)Enhances students’ in- and out-of-class experiences, in addition to facilitating interactions among faculty, staff, and other students. These resources help students achieve academically, stay healthy, get involved with campus life, find jobs, and identify resources to enrich their learning. |
| [University Writing Center](https://writingcenter.gmu.edu/) | **Johnson Ctr Room 227E 703-993-1200** [**www.writingcenter.gmu.edu**](http://www.writingcenter.gmu.edu)Offers free individual writing consultations for students, who choose between meeting a tutor on Zoom or submitting a draft for the tutor’s written feedback. Also offers online writing guides on specific genres of writing, citation style, and other topics. Additionally, the Writing Center aids faculty who are interested in holding in-class writing workshops, developing effective writing assignments, or evaluating students’ writing. |