

Syllabus is subject to change, so check Blackboard for the most up to date version!

**GEOL 303 & 553/GGS 308/EVPP 503
FIELD MAPPING TECHNIQUES FALL 2018**

Prerequisites	30 Credits including MATH 105 or equivalent and GEOG 102 or GEOL 101
Class Meeting Times	Section 201: Wednesdays, 1:30pm-2:45pm in Exploratory 1309 AND Fridays, 1:30pm-5:45pm in Exploratory 1309 Section 202: Wednesdays, 10:30am-11:45am in Exploratory 1005 AND Fridays, 9:00am-1:15pm in Exploratory 1005
Instructors	Lori Mandable, 3417 Exploratory Hall Email Address: lmandabl@masonlive.gmu.edu Cell Phone: 703-966-5316 Dr. Julia Nord, 3453 Exploratory Hall Email Address: jnord@gmu.edu Office Phone: 703-993-3395
Office Hours	Lori: Wednesdays from 12:00pm – 1:15pm AND Fridays from 5:45pm-6:30pm Other times by appointment Julia: by appointment
Text	No text. Selected readings will be given out in class and are considered assigned material.

IMPORTANT - ALL STUDENTS NEED TO READ AND UNDERSTAND THIS SYLLABUS!!!!

- The objectives of this course are to enable you to make field measurements efficiently, assess the precision and accuracy of these measurements, and convert these data into a contextually appropriate map. By the end of the semester, the goal is to have you feel comfortable with the concepts of field mapping as well as developing the habits of performing field reconnaissance, mission planning, equipment preparation, data collection, data processing and the ability to present/communicate the data as well as its significance within the context of existing research.
- Projects are due as designated. If submitted late, your grade will be reduced by one point for each physical day (not class day) after the due date, which are specified on the syllabus and must be handed in by the end of the class period.
- For projects 1-9, if students receive a low grade these projects may be repeated and re-submitted. If this is done, they will be re-graded, however, the maximum possible score for repeated labs will be half the difference between the original grade and the maximum possible grade. Original graded work must be re-submitted with the repeated work. **Please note:** This does **NOT** apply to the final project and presentation, **Project 11.**

- For each Project, please hand-in the following:
 - A short summary of the Project objective
 - A **readable** Xerox copy of your field notes that includes your name, team members, project date(s)/times(s), equipment used (including equipment #), measurements/field work conducted, and sketched (not to scale) map (do NOT prepare a separate copy of your data on a computer - your notes MUST BE HANDWRITTEN)
 - A final, drafted copy of the Project map
 - An analysis of the precision and accuracy of your results, and the sources of error inherent in this type of mapping, when noted in the project assignment
 - A reflection on the assignment noting learning outcomes that were achieved, concepts that were mastered and what you would do differently next time – if requested.
- Projects will be graded on the basis of completeness, accuracy, error analysis, and final presentation. Remember to spell and grammar check all submissions! A rubric will be provided to detail the grading process for each Project.
- All students will have ID card access to the GGS Computer Lab located in Exploratory Hall 2102, which has current copies of ArcGIS, a black and white printer and a color laser printer.

Necessary Field Equipment

- Field Notebook (waterproof)
- Pencils, hardness of at least 2
- Waterproof, thin ink pen – don't spend more than \$15 on this! 😊
- Protractor – 180° is sufficient, but many students prefer a 360° style
- Clipboard with Cover
- **Engineers** Rule (inches) needs to be graduated in 10ths, 20ths, 30ths, 40ths, 50ths, and 60ths.
- Smartphone (iOS or Android platform) – if this is a hardship, please see Prof. Mandable
- Global Mapper Mobile App (Free)
- Calculator (with Trig Functions)
- Field Boots or Sturdy Shoes & Weather appropriate clothing (layers, rain gear, etc.)
- Sunscreen
- Water bottle
- Hat
- Bug repellent
- Rain Gear - a poncho or jacket is best
- Snacks

You are personally responsible for any equipment checked out in your name. Please treat the equipment as if it were your own. Final grades will not be assigned to anyone who has not returned all field equipment.

When working in the field, please adhere to the following:

- **COME PREPARED.** Have the proper equipment, and be sure it is in proper working order. Know beforehand what you are supposed to accomplish, and be familiar with the techniques and equipment involved.
- **WORK IN TEAMS** and **BE PROFESSIONAL.** Be mindful that the vast majority of work in this class is done in teams and classmates as well as the instructor may not appreciate foul language, snide remarks and inappropriate jokes. If you have a conflict with a team member or instructors, it is best to communicate with that person directly regarding any issues you have in a constructive manner. If necessary, the instructors can aid in the process of constructively

- **WORK SAFELY.** Never work alone, especially in rugged terrain. Always tell someone where you will be, just in case you don't return. Wear proper field clothes. Always keep your wits about you. Remember to drink plenty of fluids and eat!
- **WORK EFFICIENTLY AND BUDGET YOUR TIME.** Develop a way to do your fieldwork in a comfortable, but efficient manner. Keep in mind there is a limited amount of time in which to complete the Project. Leave enough time after fieldwork to prepare the report.
- **PLOT YOUR RESULTS IN THE FIELD.** Get in the habit of collecting data, calculating, compiling, and plotting results while at the field site. This is the most important way to check your work for accuracy. **This may save you from making unnecessary trips back to the field.**

Students as Scholars Class

This class is listed as a *Students as Scholars* Inquiry-level course, where students learn about the recursive process of scholarly inquiry through teamwork with weekly projects and a large-scale, original final project. We expect that you will learn content and skills that make you capable of evaluating scholarly work as well as prepare you to conduct your own scholarly research and/or projects in the future. Specifically, in this course you will:

- Articulate scholarly questions related to map products
- Engage in the elements of the scholarly process through research into background context and best methodologies used to produce a map
- Situate the concepts, practices and results of scholarship within a broader context and be able to communicate the importance and value of your projects to others.

For more information on *Students as Scholars* and undergraduate research please go to <http://oscar.gmu.edu/>.

General Policies

- **Attendance:** You are expected to attend every class session and to be there on time. If you must miss a class please let the instructor know ahead of time. Most Projects are team-based and your colleagues will miss you!
- **Academic Integrity:** GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When in doubt (of any kind) please ask for guidance and clarification. For information on avoiding Plagiarism please visit: <http://writingcenter.gmu.edu/?p=499#more-499>
- **GMU Email Accounts** Students must use their Mason email accounts to receive important University information, including messages related to this class.
- **Office of Disability Services** If you are a student with a disability and you need academic accommodations, please contact the instructor and contact the Office of Disability Services

(ODS) at 993-2474. All academic accommodations must be arranged through the ODS.
<http://ods.gmu.edu>

- University Policies: 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/>. All members of the university community are responsible for knowing and following established policies
- Other Useful Campus Resources:
 - Writing Center: A114 Robinson Hall; (703) 993-1200; <http://writingcenter.gmu.edu>
 - University Libraries "Ask a Librarian" <http://library.gmu.edu/mudge/IM/IMRef.html>
 - Counseling and Psychological Services (CAPS): (703) 993-2380; <http://caps.gmu.edu>
- Cell phones: As a courtesy to your classmates, professor and guest speakers, please turn your cell phone off during class lectures. If you are experiencing a medical or family situation where you need to receive an incoming call, please let us know, mute the ring on your phone, and feel free to exit the class to receive your call. You will be able to use your phone for class related issues when in the field.
- Inclement Weather: We will hold class rain or shine, and at any temperature so long as Mason is officially in session.
- Inclement Weather and Class Cancellation: GMU posts closings on its website (www.gmu.edu.) You can receive notification from Mason Alerts you via email or text to a cell phone; please let us know if you need more information. However, please use your common sense about weather conditions in your area. If you do not feel safe traveling to class please do not attempt the journey.

Course Schedule

Date	Topic	Projects/Assign
August 29	Course Overview	
August 31	Maps: Types, Context, Style, Lat/Long, UTM, Projections Topo Maps	Project 1: Maps & Topo Maps Project 1 DUE: 9/14/2018
September 5	Safety & Equipment Field Notes/Notebooks	Safety Presentation
September 7	GPS	Project 2: Geocaching Project 2 Due in Class
September 12	Mapping Projects	
September 14	Mapping Mason Pond with a GPS/First fieldwork	Project 1 Due Project 3: Mapping Mason Pond Project 3 DUE: 10/5/2018
September 19	Mapping Projects, ArcGIS Trigonometry Overview	Math 1 – Trig Overview Math 1 DUE: 10/5/2018
September 21	Mapping Project: Mason Pond	Continue with Project 3 on ArcGIS
September 26	Global Mapper/Mapping Apps	
September 28	Global Mapper Project	Project 4: Mapping Mason Pond with Global Mapper Project 4: DUE 10/12/2018
October 3	360° Math/Coordinates Brunton Compasses Check-In 1	Math 2 – 360° Math/Coordinates Math 2 DUE: 10/10/2018
October 5	Clocks, Flamingoes & Orienteering, Oh My!	Project 3 Due Math 1 Due Project 5: Clocks, Flamingos & Orienteering, Oh My! DUE 10/17/2018
October 10	Measurement Precision & Accuracy Bruntons Part II	Math 2 Due Math 3 Math 3 DUE: 10/24/2018
October 12	Pace & Compass	Project 4 Due Project 6: Pace and Compass in front of Exploratory Hall Project 6 DUE: 10/26/2018

October 17	Triangulation Prep for Manassas	Project 5 Due Project 7: Where is the JC on campus? DUE 10/31/2018
October 19	Manassas Field Trip	Project 8: Plotting the Cannons at the Battlefield Project 8 DUE: 11/2/2018
October 24	Transits/Differential Leveling Check-In 2	Math 3 Due Math 4 Math 4 DUE: 10/26/2018
October 26	Transit of Mason Pond with Transit Equipment	Project 6 Due Math 4 Due Project 9: Transit of Mason Pond Part 1 Project 9 DUE: 11/28/2018
October 31	Transits with GPS & GM	Project 7 Due FEEL FREE TO COME TO CLASS IN COSTUME! 😊
November 2	Transit of Mason Pond with GPS & GM	Project 8 Due Project 9: Transit of Mason Pond Part 2 Project 9 DUE: 11/28/2018
November 7	Contours & Angles/Making Contour Maps Check-In 3	Math 5 Math 5 DUE: 11/28/2018 Contour Map Worksheets Contour Map Worksheets DUE: 11/28/2018
November 9	Contour Map of Mason Pond w/Transit Equipment	Project 10: Contours of Mason Pond Part 1 Project 10 DUE: 12/5/2018
November 14	GIS Day - Enjoy the Festivities!	
November 16	Contour Map of Mason Pond w/GPS & GM	Project 10: Contours of Mason Pond Part 2 Project 10 DUE: 12/5/2018
November 17 & 18	Northern Virginia Mineral Show at GMU (HUB/SUB II Upstairs) Saturday 10am-6pm; Sunday 10am-4pm Free Admission with GMU ID	
November 21	Thanksgiving Break – Enjoy the Holidays! ☺	
November 23		
November 28	Project 10 Requirements, Planning Project 10	Project 9 Due Math 5 Due Contour Map Worksheets Due
November 30	Visit Final Project Field Site	Initial Planning Visit to Environmental Science on the Piedmont
December 5	Field Work Prep/Planning	Project 10 Due
December 7-8	Field Trip – Overnight!!!!	Project 11 Field Work Project 11 & Presentation DUE: December 17, 18 or 19, 2018 (TBD)
December 10 -14	Work on Final Project	Rough Draft of Paper and Map Due at 5pm on Friday, December 14, 2018 via Blackboard
December 17, 18 or 19 (TBD)	Final Presentations Check-In 4	Project 11 Presentations and Work Due

Grading

Item	Points
Project 1	15
Project 2	10
Check-In 1	5
Project 3	15
Math 1	5
Math 2	5
Project 4	15
Project 5	15
Math 3	10
Check-In 2	5
Project 6	15
Math 4	10
Project 7	10
Project 8	20
Check-In 3	5
Project 9	20
Math 5	10
Contour Map Worksheets	10
Project 10	20
Check-In 4	5
Project 11 Paper	35
Project 10 Presentation	20
Total	280

Graduate Students taking GEOL 553 or EVPP 503 will need to do a Graduate Research Project in addition to the Project work assigned as stated above. This Project will need to be original and students will need to meet with Dr. Julia Nord to have the topic approved. This Project will be graded in two parts: a proposal detailing the Project objectives, equipment needed, timeframes, etc. that is worth 15 points and the actual Project with an Executive Summary, Project outline and maps that is worth 30 points. This will make the graduate student total points possible 325 instead of the 280 shown in the chart above for undergraduate students.

Grading Schema

A+, GPA 4.00 points earned	97% and above
A, GPA 4.00 points earned	93% - 96.99%
A-, GPA 3.67 points earned	90% - 92.99%
B+, GPA 3.33 points earned	87% - 89.99%
B, GPA 3.00 points earned	83% - 86.99%
B-, GPA 2.67 points earned	80% - 82.99%
C+, GPA 2.33 points earned	77% - 79.99%
C, GPA 2.00 points earned	73% - 76.99%
C-, GPA 1.67 points earned	70% - 72.99%
D, GPA 1.00 points earned	60% - 69.99%
F, GPA 0.00 points earned	59.99% and below