

Syllabus for Math 302

Fall 2018

Instructor: Rebecca R.G.

Call me: Rebecca or Dr. R.G.

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Office: Exploratory Hall 4406 (to find it, go through the Math Office and turn left at the second hallway).

Office Hours: TBD based on surveys. But you should also feel free to email me to make an appointment at another time!

Class Meetings: MW 1:30-2:45pm in Innovation Hall 131.

Description: This course will concentrate on using axiomatic systems to study geometry, and on building geometric intuition in both Euclidean and non-Euclidean spaces (e.g. spheres, hyperbolic space).

Text: *Foundations of Geometry* by Gerard A. Venema, Second Edition. We will likely cover Chapters 1-6 and 8.

Grading: There will be weekly homework, class presentations, two in-class midterms, and a final exam. These items will be weighted as follows:

Homework:	25%
Class Participation and Presentations:	15%
2 Tests (20% each)	40%
Final Exam*	20%

Cell Phones/Electronic Devices: You may use a phone or other device to access the textbook or course materials during class if you prefer. If you tend to be distracted by your phone, please bring print materials instead. I will ask you to put your device away if I see that you are getting distracted.

Exams: The midterm exams will take place in class on Wednesday, October 3rd and Wednesday, November 7th. The final exam will take place on Wednesday, December 12th from 1:30-4:15pm.

In-Class Expectations: In class, you will be expected to work on problems in groups of varying sizes, and to explain your reasoning to your peers both in your groups and by presenting to the class. If your group is not working

well for you, or you are nervous about presenting, please come speak to me so we can make a plan to improve your experience.

Getting Help on Projects and Problem Sets (Academic Integrity):

I strongly encourage you to work together on problem sets. However, once you have figured out the problems, you should go write them up on your own, and **include the names of the other students you worked with (or any other resources you used to complete the homework)**. Copying is not permitted, and you must understand your work well enough to present on it in class and be tested on the material individually. If you are unsure whether you are collaborating correctly, please come talk to me.

Final Grades: The assignment of the final letter grades will be based on the standard scale:

A+ 97-100	A 93-96	A- 90-92	B+ 87-89
B 83-86	B- 80-82	C+ 77-79	C 70-76
C- Rare/Never	D 60-69	F 0-59	

Presentations:

Part of class time on Wednesdays will be dedicated to student presentations of homework problems due that day.

The goal of student presentations is to come to a class consensus about a solution of the presented problem. Therefore if you are not presenting your job will be to analyze the work of the presenter and ask questions whenever they arise for you. The goal is not to put the presenter on the spot, but to allow them to lead the class to an agreed upon solution. This process will be most effective when the class is focused on the presentation and asking questions that will help clarify the solution or proof. If there are multiple students prepared to present a particular problem the student with the fewest presentations will be chosen.

Each presentation will be scored using the rubric that follows:

0 points	1 point	2 points
The attempted solution does not contain significant information relevant to the problem.	The attempted solution makes significant progress towards the solution or proof.	A complete solution or proof is presented with minimal help from the class if needed.

Homework:

Homework will be assigned weekly and due in class on Wednesdays. There will be a penalty for late homework. Each week, several problems will be graded in detail and the rest will be graded for completeness. Solutions will be posted to Blackboard. If there is a problem you would like feedback on, leave a note on your homework and I will get to it as time allows.

You may get help from classmates or from the professor, but your final write-up must be your own (*and remember to list everyone you got help from!*).

Expected Learning Outcomes:

- The ability to recognize and use mathematical notation;
- The ability to follow proofs and other mathematical discourse;
- The ability to write simple proofs in the major proof formats (direct, indirect, inductive), and to engage in mathematical discourse;
- The ability to explain a proof verbally and with the blackboard to your peers;
- The ability to distinguish an axiom from a theorem, and to use axioms and theorems to justify mathematical statements.

How to Succeed:

- It is absolutely essential that you understand how to solve the assigned homework problems and, more importantly, how and why the skills and techniques presented in the course are used in solving the assigned problems. Exam questions will be similar to these problems.
- Ask questions in class about anything that is not completely clear. When your peers are presenting, ask about anything that doesn't make sense to you—this is an important part of the presentation. Don't hesitate to bring questions to your instructor during office hours.
- Stay caught up. Mathematical concepts build on each other cumulatively and you need to stay on top of the material at every stage. If you are having difficulty, don't expect that the problem will take care of itself and disappear later. Contact me immediately to discuss the problem!
- Form a study group. Many students benefit from a study group to work through challenging problems and to review for exams. You should attempt the problems ahead of time by yourself and then work through any difficulties with your study partners. Explaining your reasoning to another student can help to clarify your own understanding.

- You should expect to work hard. Don't get discouraged if you find some of the material very difficult. Be persistent and patient! If you follow the above suggestions, your experience in this course will be a rewarding one.

Email policy: I will generally respond to all emails within 24 hours. If you do not receive a response in that time, please send a follow-up email. Please make sure to email me far enough in advance of due dates/exams if you have questions. If you have questions that require mathematical responses, I may ask you to meet with me in person.

Students with Disabilities: If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703/993-2474 and <http://ods.gmu.edu/>. All academic accommodations must be arranged through that office. If you need accommodation, it is your responsibility to contact me at least one week before any exam. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations.

Please fill out this form and return it to me by Wednesday's class. This counts as the first homework assignment. It is 2-sided.

Name (please print):

Gender pronouns (e.g. she/her/hers):

Class and major:

Math courses you have taken:

Other courses you are taking this semester:

Have you taken a course that required you to write proofs? If so, describe it.

Why did you want to take this class, and what do you hope to get out of it?

Is there anything else you'd like me to know?

Here are possible times for office hours. Please circle all times that fit into your schedule, either completely or partially.

- Monday 11am-12pm
- Monday 12-1pm
- Monday 3-4pm
- Monday 4-5pm
- Tuesday 11am-12pm
- Tuesday 12-1pm
- Tuesday 1-2pm
- Tuesday 2-3pm
- Tuesday 3-4pm
- Tuesday 4-5pm
- Wednesday 11am-12pm
- Wednesday 12-1pm
- Wednesday 3-4pm
- Wednesday 4-5pm
- Thursday 12-1pm
- Thursday 1-2pm
- Thursday 2-3pm
- Thursday 3-4pm
- Thursday 4-5pm
- Friday 11am-12pm
- Friday 2-3pm