

Syllabus for Math 321

Fall 2019

Class Meetings: TTh12-1:15pm in Peterson Hall 1113.

Instructor: Rebecca R.G.

Pronouns: She/her/hers

Call me: Rebecca or Dr. R.G. or Professor R.G.

Email: rrebhuhn@gmu.edu

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

Office Hours: M2-3, T4-5, W2-3 in Exploratory 4406. But you should also feel free to email me to make an appointment at another time!

Learning Assistant: Matthew South

Pronouns: He/him/his

Email: msouth2@masonlive.gmu.edu

Review Sessions: T1:30-2:30 (Exploratory 4208), W11am-1pm (Exploratory 4103). (These sessions are only for Math 321 students. They are held in a classroom so you can work together during this time.)

Math Tutoring Center Hours: (These are changing—email Matthew to check before going.) M12:30-1:30, T1:30-2:30, W11:30-2:30, Th1:30-2:30, F12:30-2:30 (These are open to people in many classes, and Matthew may be busy helping others.)

Description: In this course, you will learn how to work with algebraic structures, primarily groups with some rings, with a strong emphasis on proofs. The primary goal is for you to become comfortable with common examples of groups and their properties, and to use algebraic proof techniques to work with them.

Text: *Introductory Abstract Algebra* by Margaret L. Morrow, published by the Journal of Inquiry-Based Learning in Mathematics. Available for free here, and will be posted to Blackboard: <http://www.jiblm.org/downloads/jiblmjournal/V120326S/V120326S.pdf>

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

Pre-class assignments:	5%
Homework:	20%
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 Thursday, September 26th and Thursday, November 7th. The final exam will take place on Thursday, December 12th from 10:30am-1:15pm.

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. You are responsible as a group for making sure that any member of the group can explain your work 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 or better, so if you get an 81, for example, you will get at least a B-.

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:

I will ask groups to present some of their work to the class. I may call on the entire group, or a specific member of the group. Your group is responsible for making sure that every person is able to explain the material to the class.

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, ask questions, and offer constructive suggestions for improving the proof. As the presenter, your job is to share your group's understanding of the problem and the strategies that you have tried. You do not necessarily have to have a complete or correct solution, and I will sometimes ask groups to present interesting partial answers that highlight important ideas.

Homework:

Homework will be assigned weekly and due in class on **Thursdays**. 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 relating to groups and rings;
- The ability to follow proofs and other mathematical discourse;
- The ability to write proofs involving algebraic techniques, and to engage in mathematical discourse;
- The ability to explain a proof verbally and with the blackboard to your peers;
- The ability to recognize common examples of groups with certain properties, and to prove that these properties hold.

How to Succeed:

It is absolutely essential that you understand how to solve the problems in the textbook 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. The following will help you with this:

- Ask questions in class—you can ask the members of your group, the instructor, or the people presenting. 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, 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.