# Abstract Algebra I: MATH 3005-R01

**Fall 2020** <span style="float:right">**Syllabus**</span>

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| **Instructor:** | Manami Roy |
| **Email:** | mroy17@fordham.edu |
| **Class Schedule:** | Mondays and Thursdays from 2:30 to 3:45 pm. |
| **Office hours:** | Wednesdays, 2:30-3:30 pm, Thursdays, 1- 2 pm EDT or by apppointment |

**Textbook:** A First Course in Abstract Algebra (7th. ed.), by John B. Frayleigh. (ISBN-13: 978-0201763904, ISBN-10: 020176390)

**Some other reference textbooks**:

1. A Book of Abstract Algebra - Pinter (I have heard good things about this book. This is a very accessible textbook.)

2. Topics in Algbera - Herstein (Written in older style, it might be hard to read if you are not used to the abstract concepts. This might be useful for those of you wishing to stretch yourself as there are many great exercises.)

3. Contemporary abstract algebra by Joseph Gallian (This is also a very accessible book. It has a good geometric approach.)

**Online course information:** This course will run online through Blackboard course page, you can access it using your Fordham Blackboard account. All the course material will be posted there. We will meet online at the scheduled time via Zoom. Please follow the following guidelines to join an online session:

1. Open an account on Zoom **using your Fordham Email Id** and download the application on your device (laptop/tablet/phone).

2. The Zoom meeting links will be posted on Blackboard course page under announcements. No link will be send via email.

3. You must **use your Fordham Email Id to join a Zoom meeting** for the class and you must **use your full name.**

**Course description:** There are two main goals of this course. First, we will study how to prove mathematical statements rigorously in the context of algebra. Secondly, we will study basic algebraic notion of groups. We will roughly cover the topics from Chapter I, II and III of the textbook. The topics include definitions and properties of groups, subgroups, cyclic group, permutation groups, normality, homomorphisms. If time permits, we will look at the notion of rings.

**Prerequisites:** The basic knowledge on Discrete Mathematics (Math 2001) and Linear Algebra (Math 2006).

**Attendance and class participation:** Attending every online class during the official academic term is required. Attendance will be taken intermittently. It is very important to participate in class discussions. Sometimes you will be working in groups during the class, your active involvement is expected. This will be included in the "participation" portion of your grade.

**Homework:** We will have a weekly homework assignment (except possibly during exam weeks). In addition to assigned homework, I strongly encourage you to work through a large number of problems from the text or other books or resources. The homework alone will not provide sufficient practice. I will try to

assign some recommended practice problems in addition to your HW each week. Late homework will not be accepted. **All the homework should be submitted on BlackBoard as a single pdf.**

**Exams:** We will have two exams: a midterm exam and a comprehensive final exam. **Both of the exams will have a written component and an oral component**. The distribution of grades between written and oral part will be announced in the class later. Details about how the exams will be conducted will be announced in class. I will only give make-up exams in absolutely exceptional, and documented, circumstances.

**Course Grade:** You will be graded on homework (25%), in-class discussion and participation (5%), Midterm (30%), Cumulative final (40%).

## Important Dates:

- September 3: Last day to add/drop.

- September 7: No class, Labor Day, university closed.

- October 2: Last day to designate a course pass/fail.

- October 12: No class, Columbus Day, university closed.

- October 14, Wednesday: **Classes follow a Monday Schedule**.

- **October 19-22 (TBA): Midterm Exam**.

- November 6: Last day to withdraw without incurring a WF.

- November 25-29: No class, Thanksgiving Break.

- December 8: Last day of class.

- **December 11-18 (TBA): Final Exam**.

**Academic Integrity and Honesty:** Students are bound to comply with the University's Code of Conduct. This includes http://www.fordham.edu/info/25380/undergraduate academic integrity policy. If a student is found in violation of academic integrity standards while an undergraduate at Fordham University, severe sanctions shall be imposed, so the best advice is **Don't do it!**

**Students with Special Needs - Disability Services:** If Fordham students have questions about testing accommodations or any accommodations for their courses, please call 718-817-0655 or email disabilityservices@fordham.edu. The general link is: https://www.fordham.edu/info/20174/disability_services.