

# ALGEBRA

Autumn 2020

MATH-UA.0343-005

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<b>Instructor:</b>	Liming PANG	<b>Email:</b>	<a href="mailto:liming@cims.nyu.edu">liming@cims.nyu.edu</a>
<b>Lecture Time:</b>	Tue. Thu. 12:30 – 13:45	<b>Classroom:</b>	Online
<b>Office Hour:</b>	Wed. 10:30 – 11:30	<b>Office:</b>	Online

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**Recitation:** Friday 15:30 – 16:45 Online

**Teaching Assistant:** Eric Thoma ([emt408@cims.nyu.edu](mailto:emt408@cims.nyu.edu))

**TA Office Hour:** Monday 10:00 – 11:00 Online

## Reference Books:

- Michael Artin, *Algebra, 2nd Edition*, Pearson, 2010
- David Dummit and Richard Foote, *Abstract Algebra, 3rd Edition*, Wiley, 2003
- Thomas W. Judson, *Abstract Algebra: Theory and Applications* (Open Source Textbook)

**Grading Policy:** Quiz (10%), Homework (20%), Midterm (30%), Final (40%).

## Exam Schedule:

Quiz 1 .....	Oct 02 2020
Midterm .....	Oct 23 2020
Quiz 2 .....	Nov 20 2020
Final Exam .....	TBD

## Class Policy:

- Homework will be released each Thursday or Friday, and due on the following Friday. Late homework or emailed version shall NOT be accepted. One LOWEST homework score shall be dropped.
- You may discuss with your classmates about homework, but you should write your solutions by yourself. Copying others' homework is violation of university academic integrity policy.
- If you miss any due day of assignments or exams due to emergency such as illness, the corresponding documentation proofs should be submitted no later than 24 hours after the deadline or scheduled exam time in order to apply for making up.
- We will not be able to accommodate out-of-sequence exams for purposes of more convenient travel, including already purchased tickets. Please note again the date of the exams and plan your travel accordingly.

**Integrity:** We value integrity and do not tolerate academic dishonesty. You are expected to uphold academic integrity as specified by the university and the College of Arts and Science.

**Tentative Course Outline:**

09/03: Elementary Set Theory  
09/08: Groups  
09/10: Subgroups, Additive Integer Group and Its Subgroup  
09/15: Cyclic Groups and Cyclic Subgroups  
09/17: Homomorphisms, Conjugations and Normal Subgroups  
09/22: Isomorphisms and Automorphisms  
09/24: Equivalence Relations  
09/29: Cosets and Lagrange Theorems  
10/01: Quotient Groups  
10/06: Congruence of Integers  
10/08: First Isomorphism Theorem  
10/13: Direct Product of Groups  
10/15: Symmetric Groups  
10/20: Symmetric Groups  
10/22: Midterm Review  
10/27: Isometries of Euclidean Spaces  
10/29: Isometries of the Plane  
11/03: Group Operation  
11/05: Group Operation  
11/10: Counting Formula and Class Equation  
11/12: Sylow Theorems  
11/17: Semidirect Product  
11/19: Classification of Groups  
11/24: Classification of Groups  
11/26: Thanksgiving Day, no class  
12/01: Rings and Integers  
12/03: Ideals and Ring Homomorphisms  
12/08: Quotient Rings  
12/10: Final Review