

ALGEBRA

Autumn 2020

MATH-UA.0343-005

Instructor:	Liming PANG	Email:	liming@cims.nyu.edu
Lecture Time:	Tue. Thu. 12:30 – 13:45	Classroom:	Online
Office Hour:	Wed. 10:30 – 11:30	Office:	Online

Recitation: Friday 15:30 – 16:45 Online

Teaching Assistant: Eric Thoma (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