

Math 345-60 Abstract Algebra I
Mon-Wed-Fri 10:00 – 10:50 AM
Classroom: C2042
My Office: F1256

Professor: Dan Singer
Webpage: <http://mavdisk.mnsu.edu/singed/>
Email: dan.singer@mnsu.edu
My Office Hours: to be determined

Course Description: An introduction to the theory of groups, rings and fields, including polynomial rings, homomorphisms, isomorphisms, and concepts of normal subgroups, ideals, quotient groups, and quotient rings. At the end of the course, if time permits, we will use field theory to prove that doubling the cube, squaring the circle, and trisecting the angle are impossible using only ruler and compass.

Prerequisite: Math 290 with a grade of C or better. (Math 2700 at Normandale Community College is acceptable.)

Textbook: *A First Course In Abstract Algebra, 7th Edition*, John B. Fraleigh, Addison Wesley, 2003. ISBN 0-201-76390-7.

Course Format: I will cover Section 0 and Chapters I through IV of the textbook, omitting sections 12, 16, 17, 24, 25, 28, 33. I will distribute a list of questions for you to think about for each section that we cover. Please think about these questions as you read a section, and be prepared to answer the questions in class. I will call on people in class to answer these questions, and award points for correct answers. My goal is to help you think through the material and participate actively in the class. I will give lectures as needed, but I am relying on students to read the textbook carefully and work with me in class to understand and apply the ideas. I will also encourage students to present homework solutions in class. There will be three regular exams and a final exam.

Exam Policy: You may bring in a single sheet of notes to refer to during each exam. You may use a calculator as directed.

Homework Policy: Homework must be written up carefully and stapled. I will look over your homework and make comments as necessary.

Attendance Policy: Please attend regularly. I would appreciate it if you would send me an email in advance of any unavoidable absences or emergencies.

Student Conduct: Please do the following: Arrive to class on time. Turn off your cell phone if you have one. Let me know in advance if you need to leave the classroom early for some reason.

Office Hours: To be determined. I welcome you to come in as much as needed.

Grades: Class participation: 50 points, Homework: 100 points, Exam 1: 100 points, Exam 2: 100 points, Exam 3: 100 points, Final Exam: 100 points

A: 495 – 550 points
B: 440 – 494 points

C: 385 – 439 points
D: 330 – 379 points

F: 0 – 329 points

Class Schedule:

<u>Date</u>	<u>Agenda</u>
Mon Jan 12	discuss section 0
Wed Jan 14	discuss section 1, turn in section 0 hw
Fri Jan 16	discuss section 2, turn in section 1 hw
Wed Jan 21	discuss section 3, turn in section 2 hw
Fri Jan 23	discuss section 4, turn in section 3 hw
Mon Jan 26	discuss section 5, turn in section 4 hw
Wed Jan 28	discuss section 6, turn in section 5 hw
Fri Jan 30	discuss section 7, turn in section 6 hw (OMIT THIS)
Mon Feb 2	discuss section 8, turn in section 7 hw
Wed Feb 4	discuss section 9, turn in section 8 hw
Fri Feb 6	turn in section 9 hw, review for exam 1
Mon Feb 9	exam 1, sections 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Wed Feb 11	discuss section 10
Fri Feb 13	discuss section 11, turn in section 10 hw
Mon Feb 16	discuss section 11
Wed Feb 18	discuss section 13, turn in section 11 hw
Fri Feb 20	discuss section 14, turn in section 13 hw
Mon Feb 23	discuss section 14
Wed Feb 25	discuss section 15, turn in section 14 hw
Fri Feb 27	discuss section 15
Mon Mar 2	turn in section 15 hw, review for exam 2
Wed Mar 4	exam 2, sections 10, 11, 13, 14, 15
Fri Mar 6	discuss section 18
Mon Mar 16	discuss section 19, turn in section 18 hw
Wed Mar 18	discuss section 20, turn in section 19 hw
Fri Mar 20	discuss section 20
Mon Mar 23	discuss section 21, turn in section 20 hw
Wed Mar 25	discuss section 21
Fri Mar 27	discuss section 22, turn in section 21 hw
Mon Mar 30	discuss section 23, turn in section 22 hw
Wed Apr 1	discuss section 23
Fri Apr 3	turn in section 23 hw, review for exam 3
Mon Apr 6	exam 3, sections 18, 19, 20, 21, 22, 23
Wed Apr 8	discuss section 26
Fri Apr 10	discuss section 27, turn in section 26 hw
Mon Apr 13	discuss section 27
Wed Apr 15	discuss section 29, turn in section 27 hw
Fri Apr 17	discuss section 30, turn in section 29 hw

REVISIONS: MONDAY APR 13 IS EXAM 3, WED SECTION 26, FRI SECTION 27

Mon Apr 20	discuss section 30
Wed Apr 22	discuss section 31, turn in section 30 hw
Fri Apr 24	discuss section 31
Mon Apr 27	discuss section 32, turn in section 31 hw
Wed Apr 29	discuss section 32
Fri May 1	turn in section 32 hw, review for final exam
Fri May 8	final exam, sections 26, 27, 29, 30, 31, 32, 8:00 – 10:00 A.M.