

Math 5399.002 - Independent Study

Fall 2025

TuTh 2:00 - 3:20 pm in RBN 2007

Instructor: Dr. Maddie Dawsey
Office: RBN 4048
Office Hours: Tu 8:15 - 9:15 am, Tu 12:30 - 1:30 pm, We 10:10 am - 12:10 pm, or by appointment
Email: mdawsey@uttyler.edu
Website: All course materials will be posted on Canvas

Textbook

A First Course in Abstract Algebra, 7th edition, by John B. Fraleigh, ISBN #978-0-201-76390-7.

Note that free versions of mathematics textbooks can sometimes be found online.

Prerequisites

Math 3336 Abstract Algebra I.

Course Description

Study of algebraic structures. Emphasis is given to groups, rings, and fields.

Course Learning Objectives

By the end of this course, students should be able to do the following:

- Prove facts about rings, integral domains, and fields.
- Know many examples of the above objects satisfying various properties.

Important Dates

September 1	Labor Day Holiday - no class
September 8	Census Date
November 4	Withdrawal Deadline
November 24 - 28	Thanksgiving Break - no class
December 8 - 12	Final Exams

Grading Scheme

Your final letter grade will be determined by the following grading scheme:

Homework	20%	A	90 - 100
Applications	10%	B	80 - 89.99
Midterm Exam	25%	C	70 - 79.99
Project	20%	D	60 - 69.99
Final Exam	25%	F	0 - 59.99

Attendance

You are expected to attend every class and participate in any in-class activities. You are responsible for any announcements made during class. If you must miss class, please get any notes you missed from a classmate and email the professor or come to office hours to catch up.

Homework (20%)

Homework will be assigned after class each day and will be **due once a week on Canvas, by the beginning of class each Thursday**. Students are encouraged to collaborate, but all final solutions must be written individually and in your own words. Homework will not be accepted late, and any homework submitted late will earn a grade of zero. Your lowest homework grade will be dropped at the end of the semester.

A note about allowed technology use on homework: Use of AI or online solution websites (like Chegg) is not permitted on homework. If Dr. Dawsey observes that you have used any of these resources on your homework, your homework score will reflect the percentage of your work that Dr. Dawsey believes you did yourself. Dr. Dawsey has a Chegg subscription as well as access to generative AI software, and these resources will be checked weekly during homework grading. The aim of this policy is to make sure that you are taking advantage of homework assignments as learning tools instead of mindlessly copying online resources.

Applications (10%)

Each week, one application problem will be assigned. Applications will generally be challenging and will require you to use the material you learned that week to solve a real-world or other type of interesting problem. You must choose 4 application problems to complete throughout the semester. Students are encouraged to collaborate, but all final solutions must be written individually and in your own words.

Applications will be **due on Canvas by 11:59 pm on the last day of class: Thursday, December 4**. Applications will not be accepted late. If applications are submitted early, the professor will provide feedback, and students will have a chance to re-submit as many times as necessary to get full credit.

Exams (25% each)

There will be an in-class midterm exam and an in-class final exam. The tentative exam schedule is:

Midterm Exam	Thursday, October 16
Final Exam	Tuesday, December 9 at 2:00 - 4:00 pm

You will be required to write high quality proofs on exams. The focus will not be on memorization of terminology, nor will the exam consist of a series of routine calculations.

Project (20%)

You will be required to research one abstract algebra topic not covered in class and design teaching materials for that topic. For your teaching materials, you may:

- write a textbook section on your topic
- write lecture notes on your topic
- prepare slides on your topic
- make a worksheet on your topic
- design a class activity or game on your topic
- create a poster on your topic

Potential topics, detailed instructions, and rubric will be posted mid-semester. Projects will be **due by the beginning of class time on the last day of class: Thursday, December 4**. Any projects submitted late will automatically have 25 points deducted every 24 hours past the due date.

Technology

You must have a device capable of internet access, access to Canvas, and either a physical document scanner or a (free) document scanning app. For example, iPhone Notes and OneDrive both have scanning features. **Note: Use of AI technology or online solution websites like Chegg is not permitted and will be considered an honor code violation.**

University Policies

For university policies concerning Students' Rights and Responsibilities, Grade Replacement/Forgiveness, State-Mandated Drop Policy, Disability Services, Student Absence due to Religious Observance, Student Absence for University-Sponsored Events and Activities, Campus Carry, Social Security and FERPA Statement, please see the University Information module on the course Canvas page.

Tentative Schedule

WEEK	DAY	PLANNED MATERIAL
Week 1 8/25 – 8/29	Tuesday Thursday	Section 18 Section 18 Activity
Week 2 9/1 – 9/5	Tuesday Thursday	Section 19 Section 19 Activity
Week 3 9/8 – 9/12	Tuesday Thursday	Section 20 Activity Section 21
Week 4 9/15 – 9/19	Tuesday Thursday	Section 21 Activity Section 22
Week 5 9/22 – 9/26	Tuesday Thursday	Section 23 Section 23 Activity
Week 6 9/29 – 10/3	Tuesday Thursday	Section 26 Section 26 Activity
Week 7 10/6 – 10/10	Tuesday Thursday	Section 27 Section 28
Week 8 10/1 – 10/17	Tuesday Thursday	Sections 27-28 Activity MIDTERM EXAM
Week 9 10/20 – 10/24	Tuesday Thursday	Section 29 Section 30
Week 10 10/27 – 10/31	Tuesday Thursday	Section 31 Section 32
Week 11 11/3 – 11/7	Tuesday Thursday	Section 33 Chapter VI Activity
Week 12 11/10 – 11/14	Tuesday Thursday	Section 45 Section 46
Week 13 11/17 – 11/21	Tuesday Thursday	Section 47 Chapter IX Activity
Week 14 11/24 – 11/28	Tuesday Thursday	Thanksgiving Break Thanksgiving Break
Week 15 12/1 – 12/5	Tuesday Thursday	Overview of Chapter X PROJECT SHOWCASE
Week 16 12/8–12/12	Tuesday Thursday	FINAL EXAM Happy Winter Break!