

Math 4377, Section 01: Algebraic Structures Spring 2017 Syllabus

1 Course Information

- Location and Time: TuTh 3:30pm–4:50pm, 402 Lee Drain Building
- Professor: Dr. Martin Malandro
- Department: Mathematics and Statistics
- Office: 433 Lee Drain Building
- E-mail (preferred method of contact): malandro@shsu.edu
- Phone number: (936) 294-1580
- Office Hours: MW 12:30pm–2:00pm, and by appointment.
- Required Materials:
 - Textbook: Modern Algebra, An Introduction, 6th ed, by John R. Durbin

Catalog Course Description: Topics include groups, rings, fields, finite groups and Abelian groups. Writing enhanced. Credit 3. Prerequisites: C or better in MATH 3300 and MATH 3377.

Course Objectives/Learning Outcomes: A successful student will attain mastery of the following topics. Other topics will also be covered.

- Groups: Abelian and nonabelian groups (theory as well as specific classes of groups), Lagrange's theorem, homomorphisms and isomorphisms, Cayley's theorem, quotient groups, Burnside's counting theorem.
- Rings: Commutative and noncommutative rings (theory as well as specific classes of rings), integral domains, UFDs, PIDs, Euclidean domains and the relationships between them, fields, polynomial rings over fields, ideals, quotient rings, fraction fields.

You will also develop your proof-writing abilities considerably in this class.

Graduate students taking this course for graduate credit will also be required to sit in on or otherwise attend the graduate algebra course (MATH 6335 or 6336) running the same semester.

2 Grading Policy

Your grade in the course will be calculated using the following weights:

Homework and in-class activities	50%
Exam 1	15%
Exam 2	15%
Final Exam	20%

Grading Scale:

A	90% or better final average
B	80–89% final average
C	70–79% final average
D	60–69% final average
F	59% or lower final average

Homework: Homework is the most important part of the course. Most homework questions will ask for a proof or a counterexample of some statement. While we will spend a considerable amount of time developing your proof-writing abilities in this class, if you feel that your proof-writing abilities are shaky (for instance, if you made a C in 3300 or have previously failed this course), please see me sooner rather than later for assistance in getting up to speed.

There are a lot of you enrolled this semester. To help me maintain my sanity while I grade your homework please adhere to the following requirements:

- **Write on only one side of the page.**
- **Do not staple or paperclip anything. Instead write your name at the top of each page.**
- **One page, one problem: Do not combine multiple problems onto a single page.**
- **State what you are about to prove before you do so. A proof without a statement before it is incorrect mathematical writing. If a problem asks for a computation, state what is being asked for before doing the computation.**

Any graded in-class activities will be recorded as homework grades.

No homework make-ups: No make-ups for missed homework assignments or in-class activities will be available. Therefore, in calculating your averages, I will drop your (1) lowest homework score.

Exams: Many exam problems will be similar to homework problems or examples worked in class. The final exam will be cumulative.

If you arrive late to an exam, you may still take the exam in the remaining time as long as nobody has finished the exam yet.

No exam grades will be dropped, and there will be no do-overs.

Exam make-up policy: If you miss an exam, you will be expected to show appropriate cause in writing. If you must miss an exam, I expect you to contact me beforehand. If that is impossible, then you must contact me no later than 24 hours after the exam. If you miss an exam and have not contacted me by this time, you forfeit your right to a make-up.

Academic Honesty Policy: **The only sources you may consult in this course are me, other students currently enrolled in the course, and your textbook. That's it.** Consulting any other source, including other professors, the Internet, or anyone who has already completed the course, is considered cheating.

You may work with other students in the class to find solutions to homework problems. However, when it comes time to write up your work to be turned in, *you must write it alone, in your own words.* Doing otherwise is considered cheating. Anything you write down while working with others should be erased or thrown away before you go off on your own to write up the work you'll turn in for credit. I expect that what you turn in will be a reflection of your own understanding.

Exams are individual endeavors, where no help is to be given or received. Cheating on an exam includes, but is not limited to, sharing answers or using any form of cheat sheet.

Cheating is punishable with an F in the course and a referral to the Dean of Students on academic dishonesty charges.

Grade Dispute Policy: All grade issues need to be brought to my attention within one week of having your grade returned/posted.

Final Exam Schedule: Thursday May 11, 5pm–7pm

3 Classroom Policies

Attendance Policy: I expect you to attend every class. If you miss a class, then I expect you to get notes from a classmate. I expect you to arrive to class on time.

Classroom Rules of Conduct: Students must refrain from behavior in class that disrupts the learning process. Students are prohibited from using tobacco or smoking products in class, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times or about inappropriate things, wearing inappropriate clothing, using cellphones, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

Math-related questions and math-related discussion in the classroom are encouraged. However, chatter is disruptive to the learning process and will not be tolerated. Furthermore, any variation of the question “do we need to know this for the test?” is banned.

Use of Telephones and Text Messengers in Class: Generally speaking, you may not use cell phones, computers, or other devices capable of communication in class. The one exception is that during lecture periods, you may keep your cell phone on vibrate so that you can receive text messages in case of an emergency. You may not, however, be distracted or distracting to others in checking your text messages in class, and you may not send text messages in class. All messengers must be put away for exams. SHSU Academic Policy Statement 100728 states that *even the visible presence of such a device during the test period will result in a zero for that test. Use of these devices during a test is considered de facto evidence of cheating and could result in a charge of academic dishonesty.* I have no choice in this matter, so if your phone goes off during a test, please don't answer it or even pull it out to look at it.

4 Tentative Schedule

Intro to groups	Jan 18–Feb 22
Exam 1	Thursday Feb 23
More groups, intro to rings	Feb 28–Apr 10
Spring break	Week of March 13–17
Exam 2	Tuesday Apr 11
More rings	Apr 12–May 5
Final Exam	Thursday May 11, 5pm–7pm

The date/time of the final exam is set by official SHSU policy. Although I do not expect any other exam dates to change, all other dates in this list are tentative and subject to change.

5 Additional Information

All information on this syllabus is subject to change. All changes will be announced in class. Further university policies regarding academic dishonesty, student absences on religious holy days, disabilities, and visitors in the classroom which apply to this course may be found at <http://www.shsu.edu/syllabus/>. If there is a conflict between information on this syllabus and official university policy, university policy takes precedence.