

Sul Ross State University
Course Syllabus
MATH 4330-001: Modern Algebra
Spring 2019

Instructor: Dr. Angela Brown

Office Number: ACR 107B

Office Telephone Number: (432)837-8223

Email Address: abrown4@sulross.edu

Office Hours: MW 2:30-4, W 10-12, TR 3:30-5, others by appointment.

Time and Place of Class Meetings: TTh 11:00-12:15 ACR 206

Prerequisites: Math 2414 and Math 2318

Required Textbooks: *Contemporary Abstract Algebra, 6th Edition* Gallian, J., 2006. ISBN 0-618-51471-6.

Other Equipment Needed: paper and pencils.

Course Content: We will cover group theory in depth and introduce the topics of rings and fields. This will be adjusted as necessary.

Learning Objectives The student will be able to prove mathematical statements with varying methods of proof, including direct proofs, proof by induction, proof by contradiction and proof by contrapositive. The student will be able to use the varying methods of proofs to prove their own theorems pertaining to abstract algebra. The student will be able to recognize and dispute invalid mathematical statements using counter-examples. Students will gain understanding of groups and rings in part by the study of such underlying concepts as equivalence relations, congruence classes, and quotient structures.

Grading Scale: 90-100 A, 80-89 B, 70-79 C, 60-69 D, 59-Below F

Grading Policy: The grade weighting will be as follows:

Homework: 30%

Exams : 40%

Final Exam: 30%

Homework will be assigned periodically throughout the semester. Homework assignments must be complete and will be turned in during class. Due dates will be placed on Blackboard. Not all problems will be graded for content, but the assignment grade is contingent on completeness. If you use outside references, make sure to properly source the material.

There will be three exams in addition to the final exam. All exams will be closed notes, closed book, and no calculators allowed. No make-up exams will be given unless due to a school function. If you miss an exam with a valid excuse, the grade you make on the final exam can replace this grade.

The final exam is on Monday May 13 at 10:15 am.

General Policies: Class will start at the designated time and run for 1hour and 15 minutes with no breaks. You are expected to be on time, attend every class meeting, stay for the duration of class time and come to learn. Do not schedule any appointments that will conflict with class time; if you have done so then I need documentation of the appointments.

You are expected to bring all necessary materials and take notes and participate. You are expected to turn-off and not to access any electronic, non-task oriented device such as cell/smart phones, tablets, and i-pods. A cell-phone cannot be used as a calculator. Devices for recording the lecture are permitted; either audio or video. Please inform the instructor in you plan to do so.

If you come to class without your materials then you will be released from class to go get the appropriate materials. Working on another class during this class is not allowed. If you are causing others around you to miss lecture material then you will be asked to leave.

Any personal business must be conducted during office hours or by appointment. I will only discuss grades and attendance issues in my office. Classroom time is for the entire class.

Attendance Policy: Students are expected to attend every class. If class must be missed, the student is expected to get the notes from a classmate, and to check with me or on Blackboard for announcements and updated assignments. You are expected to check your Sul Ross e-mail account. Absences due to school functions should be discussed with me ahead of time.

Students are expected to arrive to class on time. If a student is perpetually late, they will be asked to not attend class unless they arrive on time. If tardiness becomes a problem for the class as a whole, people who arrive late will not be permitted to enter the class. If this stricter policy becomes necessary, there will be an announcement made in class.

It is policy of the university to drop a student with a grade of “F” if 9 hours or more of class are missed. For this course that would be 6 or more class sessions missed.

Americans With Disabilities Act: As a instructor, I am required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing the instructor for MATH 4330 of their need for accommodation and in providing authorized documentation through designated administrative channels. If you need to request such accommodations, please contact the ADA Coordinator in Counseling and Accessibility Services, Ferguson Hall 112, 432-837-8203.

Important Dates:

- January 22 First Day of Classes
- January 25 Last Day for Late Registration and Schedule Changes
- March 18-22 Spring Break
- April 12 Last Day to Withdrawal from University or Drop Classes with a Grade of “W” (by 4 pm)
- May 8 Last Day of Classes
- May 10,13-15 Final Exams
- May 17 Commencement

Tentative Schedule-Subject to Change

	Tuesday		Thursday
Jan 22	Chapter 0	Jan 24	Intro to Groups
Jan 29	Groups	Jan31	Finite Groups
Feb 5	Subgroups	Feb 7	Cyclic Groups
Feb 12	Permutation Groups	Feb 14	Exam 1
Feb 19	Isomorphisms	Feb 21	Isomorphisms
Feb 26	Cosets	Feb 28	LaGrange's Theorem
Mar 5	External Direct Products	Mar 7	Normal Subgroups
March 12	Groups Homomorphisms	Mar 14	Fundamental Theorem of Finite Abelian Groups
Mar 26	Fund Theorem Cont.	Mar 28	Intro to Rings
Apr 2	Exam 2	Apr 4	More Rings
Apr 9	Integral Domains	Apr 11	Ring Homomorphisms
Apr 16	Fields	Apr 18	Fields
Apr 23	Extension Fields	Apr 25	Exam 3
Apr 30	Finite Fields	May 2	Finite Fields
May 7	Review		