PRACTICAL INFORMATION

Class time:	TR 12:30–1:50 pm
Class room:	MATH 108
Instructor:	Lars Winther Christensen
Office:	MATH 251
Office hours:	M 1:00–2:30 pm and W 1:30–3:00 pm or by appointment
E-mail:	`lars.w.christensen@ttu.edu`
Course homepage:	`www.math.ttu.edu/~lchriste/teaching.html`

COURSE DESCRIPTION

This is a graduate level introduction to the theory of groups and rings; it prepares the student for the graduate algebra sequence Modern Algebra I & II (Math 5326–5327).

Required text: "Abstract Algebra", Third Edition by Dummit and Foote, John Wiley & Sons Inc. The same text is used in the math 5326–5327 sequence.

Prerequisites: Math 2360 and Math 3310 or similar courses on linear algebra and mathematical proofs.

Expected learning outcomes: The students will develop the skills in basic group theory and ring theory that are required to succeed in the Math 5326–5327 sequence. After completion of the class, students should have an operational understanding of the basic concepts of group theory and ring theory; they include but are not limited to the following:

- Important examples of groups such as dihedral groups and matrix groups. Sub groups and quotient groups, the group isomorphism theorems. Group actions, centralizers, normalizers, and stabilizers.
- Important examples of rings such as polynomial rings, matrix rings, and group rings. Ideals and quotient rings, the ring isomorphism theorems. Rings of fractions. The Chinese Remainder Theorem.

LEARNING ASSESSMENT

Graded assessment is done through homework and exams. Homework problems will be assigned out of the textbook and chosen such that they facilitate the students' development of skills in basic group theory and ring theory. Exam problems will be constructed such as to test if the students have acquired an operational understanding of the basic concepts in group theory and ring theory.

Other assessment techniques will also be used; these include direct questioning, and problems to be solved in class. Additionally, problems will be assigned for student self-assessment.

COURSE ORGANIZATION

Of the 30 class periods, 26 will be spent on lectures and 4 on exams and feedback. The plan is to cover sections 1.1–1.7 (8 class periods), 2.1–2.5 (5 c.p.), 3.1–3.3 (5 c.p.), and 7.1–7.6 (8 c.p.). Exact reading assignments are posted on the course homepage, which is updated after every class.

Exams: Take place in class on 23 February, 6 April, and 4 May.

Other important dates:

Last day to drop a course without penalty	3 February
Spring Break	11–19 March
Last day to drop a course	29 March
No classes	17 April
Last day to withdraw	4 May

ASSIGNMENTS,, GRADES, AND GRADING

Three in-class exams are given during the semester. Homework will be assigned 12 times during the semester; assignments are due in class on Tuesdays. Students are encouraged to work together on the homework problems.

Grading policy: On exams and written homework, partial credit for correct steps will be awarded even if the final answer is wrong. Full credit will be given only if the final answer and all intermediate steps are correct. A correct final answer does not *per se* guarantee any credit.

Deadlines and make ups: Homework is not accepted after the deadline.

Final grade: Homework (10 assignments) and exams (3) are counted towards the final grade with weights as follows: Homework 40% (4% ea.), exams 60% (20% ea.).

GENERAL POLICIES

Academic integrity: It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension. "Scholastic dishonesty" includes, but it not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student or the attempt to commit such an act. See `www.depts.ttu.edu/opmanual/OP34.12.pdf`.

Students with disabilities: Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services (SDS) during the instructor's office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from SDS has been provided. For additional information, please contact SDS in West Hall or call 806-742-2405. Please see more on-line at `www.depts.ttu.edu/opmanual/OP34.22.pdf`

Religious holy days: Students are allowed to take time to travel and observe a religious holy day as detailed in `www.depts.ttu.edu/opmanual/OP34.19.pdf`. Note that prior notice must be given to the instructor in writing.