

Department of Mathematics, Oklahoma State University

Introduction to Modern Algebra, Math 3613, Fall 2012

Lectures:

Monday, Wednesday, Friday 9:30 AM – 10:20 AM, in MS 445

Instructor: Mahdi Asgari

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Office Hours: Monday, Friday 10:30 AM – 11:20 AM, Wednesday 1:00 PM – 2:00 PM, or by appointment.

WWW page: A web page with some information about the course, such as homework assignments, will be maintained at <http://www.math.okstate.edu/~asgari/teach.html>

Textbook: Lindsay N. Childs, *A Concrete Introduction to Higher Algebra*, Third Edition. Springer (Undergraduate Texts in Mathematics) 2009.

Contents: The objective of this course is to give an introduction to the basic concepts and techniques of abstract algebra through study of certain algebraic structures such as rings, fields, and groups. Another objective is to become better acquainted with the logical structure of mathematical arguments, which we achieve along the way as we study various structures, their constructions, and their applications.

Grading: Your final grade in the course will be determined as follows: two mid-term exams, each worth 100 points, a final exam worth 150 points, and homework assignments worth a total of 100 points.

A total score of 90% or above guarantees an A. A score of at least 80% will receive at least a B. A score of at least 70 % will receive at least a C. A score of at least 60 % will receive at least a D. Depending on the median scores these cutoffs may be slightly lowered and some discretion of the instructor may be used in deciding borderline cases.

Homework: Problems are assigned on a regular basis on the web page for the course. They should be neatly written in the same order they are assigned and turned in at the beginning of the class meeting they are due. You are welcome to discuss problems with each other; however, what you turn in should be your own individual work and not copied or otherwise reproduced from others' work. *No late homework will be accepted.* The lowest two two homework scores will be dropped in order to account for unavoidable missed work, e.g., due to illness.

Exams: There will be two in-class mid-term exams and a final exam in this course. They are tentatively scheduled as follows. (All exams are held in the regular classroom.)

Exam 1: Friday, September 21, 2012 (§§1, 2A–C, 3A–E, 4A, 5A–B, E–F, and handouts)

Exam 2: Friday, November 9, 2012 (§§6A–F, 7A,C–D, 9A–C, 11A–C,E–H, 13, 14, 17A)

Final: Wednesday, December 12, 2012, 8:00 AM – 9:45 AM
(cumulative; all the above plus §§19A–B, 23, 24A–C)

Class Attendance: It is not my intention to take daily attendance; however, you will be responsible for knowing everything discussed or announced in class.

OSU Syllabus Attachment: For general university policies and important dates see:
<http://academicaffairs.okstate.edu/current-students/47-syllabus-fall>

Etiquette: Electronic devices that go off during class present a distraction to other people in class. As a courtesy to others, please turn off and stow these devices before the class begins.

Note:The instructor reserves the right to make modifications to this course information sheet throughout the semester if it becomes necessary to do so.

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Rubric for Grading Proofs in this Course

Proofs will be graded based on the following criteria.

- **Statement of the Proposition/Theorem/etc.:** The statement of the Proposition/Theorem/etc. to be proved must be clearly written at the top. The beginning of the proof must be indicated with the word “Proof:” and the ending must be indicated by “Q.E.D.”, or a symbol with that meaning, such as \square .
- **Statement of Assumptions:** Every assumption from the Proposition/Theorem/etc. must be stated as such when it is used.
- **Statement of Definitions and Lemmas:** Definitions and existing Lemmas/etc. must be stated clearly before they are used, and it must be made clear where they are being used.
- **Correct Logic:** The logical flow of the statement must be clear and correct.
- **Statement of Conclusion:** The correct conclusion must be reached and must be stated definitively as such.