

## Math 412, Section 2, Winter 2014

Introduction to Modern Algebra

MWF 9:10 – 10:00 413 Dennison

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**Office Hours:** Monday 11-12, Tuesday 1-2, Wednesday 2-3 and by appointment

**Exams:** There will be two in-class midterm exams whose precise dates will be determined later. The final exam will be held Tuesday April 29, 1:30–3:30 pm.

**Homework:** Homework will be given approximately weekly. The first assignment will be due on Friday January 17 and the second assignment will be due on Wednesday January 29.

**Grades:** Your grade will be based on the homework, the midterm exams, and the final exams. Homework will count for 25% of your grade, the midterm exams will count for 20% each and the final exam will count for 35%.

**Text:** *Abstract Algebra: an introduction* by Thomas Hungerford, third edition.

**Prerequisites:** Math 215, 255 or 285 and Math 217. I will assume that students have taken a course which has a basic introduction to proof techniques.

**Alternative courses:** Math 312 (Applied Modern Algebra) is a less abstract course which replaces some of the material on rings and fields of Math 412 with additional applications to areas such as switching and coding theory. Math 493 (Honors Algebra I) is the first semester of a two semester sequence which covers the same material (and more) at a higher level.

### Assignment #1: Due: Friday January 17

Read sections 1.1, 1.2 and 1.3 and Appendix A.

Complete, and turn in, problems 9 and 10 in section 1.1, problems 4(part b), 20 and 24 in section 1.2, and problems 10 and 16 in section 1.3. (Notice that in problems 20 and 24 in section 1.2 and problem 16 in section 1.3, you should assume that  $a$  and  $b$  are not both zero, so that  $(a, b)$  is defined.)

Complete, but do not turn in, problems 1 and 5 in section 1.1, problems 3, 9 and 27 in section 1.2, and problems 7 and 15 in section 1.3