SYLLABUS – MATH 435

BASIC ABSTRACT ALGEBRA

Description: This course will introduce groups, rings and fields, the fundamental objects of study in what is known as *modern (or abstract) algebra*. Modern algebra has applications to many fields, particularly theoretical physics, cryptography and coding theory – some of which we will discuss in class. If taught properly, it should also be the most challenging class for undergraduate math majors.

- **Time:** Monday, Wednesday, Friday 3:35pm – 04:25pm
- **Location:** 307 Boucke
- **Instructor:** Karl Schwede
- **Contact information:**
    - email: schwede@math.psu.edu
    - office: McAllister, 318C
    - office phone: (814)865-8439
    - website: `http://www.math.psu.edu/schwede/math435`
- **Office hours:** TBA
- **Textbooks:**
    - Primary Text: "A First Course in Abstract Algebra" (3rd Edition), *Joseph J. Rotman*
    - Alternate Text 1: "Contemporary Abstract Algebra", *Joseph Gallian*
    - Alternate Text 2: "Algebra", *Michael Artin*

Grade: Your grade will be determined by the following formula.

20% Exam #1, tentatively Monday, February 21st
20% Exam #2, tentatively Friday, April 1st
30% Homework/Quizzes/Worksheets, homework will be assigned and collected approximately weekly. Your lowest homework grade will be dropped.
30% Final Exam, date TBA

Generally speaking, late homework will not be accepted and missed exams and quizzes cannot be made-up. In unavoidable circumstances, you must speak with the instructor *prior* to missing the homework/exam/quiz in order to receive credit. In such cases, the impact on the grade will be dealt with on a case by case basis.

Students are allowed, and even encouraged to work together when solving homework problems. However, each student must turn in his or her own write-up.

Prerequisites: Students taking this course should be familiar with and comfortable using basic proof strategies such as induction, proof by contradiction. Students should also be comfortable with the basic formalisms of mathematics such as sets, functions, relations, etc. The official prerequisite is Math 311W or 315, please talk to me if you have not had one of these courses.

Academic Integrity: All Penn State policies regarding ethics and honorable behavior apply to this course.