

**MATH 113, ABSTRACT ALGEBRA
COURSE INFORMATION SHEET
SUMMER 2005**

Lecture: MTWTh 4:00PM - 5:00PM, and MW 5:00PM - 6:00PM, 6 Evans, CCN: 57700

Discussion: TTh 5:00PM - 6:00PM, 6 Evans, CCN: 57705

Instructor

Name: Benjamin Johnson

Office: 1087 Evans

Office Hours: Mon, Wed 3-4, Tues 6-7, or by appointment

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Prerequisites

Math 54 or a course with equivalent linear algebra content.

Description

Six hours of lecture and two hours of discussion per week for eight weeks. Topics: Sets and relations. The integers, congruences and the Fundamental Theorem of Arithmetic. Groups and their factor groups. Commutative rings, ideals and quotient fields. The theory of polynomials: Euclidean algorithm and unique factorizations. The Fundamental Theorem of Algebra. Fields and field extensions.

Objectives

After taking this course, each student should be able to demonstrate

- (1) Knowledge of a few basic results from the field of Algebra
- (2) Mastery of precise mathematical proof at an introductory level, and
- (3) *Clarity of thought* sufficient to provide a clear presentation of various mathematical results from the field of Algebra.

Textbook

Fraleigh, John B. A First Course in Abstract Algebra (7th edition, Addison Wesley)

Homework

Homework will be assigned nearly every class period, and collected twice per week, usually on Mondays and Wednesdays at the beginning of class (4PM). I will distribute solutions to each homework assignment on the due date, and your homework submission will be graded by the course grader. Completing the homework assignments correctly is essential in order for you to do well on the quizzes and exams. Some of the homework assignments may take you longer than expected, so it is important that you not wait until the last minute to start working on an assignment. Late homework will not be accepted without a valid documented reason. If you must miss a class due to a valid documented reason, you may turn your homework in one day early. I generally will not accept either late or early homework. Please turn it in on the day it is due.

Quizzes

Quizzes will be given twice per week, except for exam weeks, on Tuesdays and Thursdays at the beginning of the discussion section. Each quiz will generally consist of two or three questions covering material on the homework you submit the previous day, and is expected to take about ten minutes to complete.

Exams

There will be two 80-minute in-class midterms (Thursday, July 7, 4:10PM - 5:30PM and Tuesday, July 26, 4:10PM - 5:30PM), and one 110-minute final exam (Thursday, August 11, 4:10 PM - 6:00 PM). The final will be cumulative, but will concentrate more on material covered after the midterms. If you cannot be in class for one of the above dates, you must notify me as soon as possible. Missing a midterm without a valid documented reason will result in a score of 0 being assigned. Missing the final exam without a valid documented reason will result in automatic failure of the course.

Grading

Your grade will be calculated as follows: 15% homework, 20% quizzes, 20% Midterm 1, 20% Midterm 2, 25% Final Exam. A cumulative average of 90% or higher will guarantee you at least an A, 80% a B, 70% a C, and 60% a D. If you fall below these ranges, you will be at the mercy of a curve, should I decide to implement one. A typical curve you might expect in this instance is roughly 15% As, 25% Bs, 40% Cs, 15% Ds, 5% Fs.

Collaboration

You are encouraged to work together with other students on the homework, but the work you turn in must be your own. Copying another student's work is not permitted. Copying or any form of collaboration on quizzes or exams will not be tolerated. If you are caught, you will receive an F for the course.

Passing this course

I expect each student to do the following three things. Show up to class on time. Complete the homework assignments on time. Study adequately for the quizzes and exams. If you do these three things, and you ever feel you are in danger of failing this course, please come and see me during my office hours, or make an appointment. The earlier you come to see me, the better. I will be less sympathetic if you wait till the end of the course to talk to me about passing. I will be even less sympathetic if you do so while failing to meet my minimum expectations outlined above. If you want to do well in this course, you should also read the relevant sections in the book before each lecture, and come prepared with questions you hope to be answered during the lecture. Good Luck.