

MATH 8080 SYLLABUS

Fall 2006

Instructor: William Graham

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Office hours: To be announced.

Texts: Humphreys, *Introduction to Lie Algebras and Representation Theory*

Fulton and Harris, *Representation Theory: A First Course*

Grading: Homework will be assigned regularly, and selected problems will be graded. Your grade will be based on your homework. You may discuss problems freely with your fellow students or others, but you must write up your solutions yourself. There are no midterms or final in the course.

Purpose of the course: Lie algebras are a fundamental object in modern mathematics. They are central to the study of Lie groups, with connections to geometry, number theory, and algebra. This course will focus on the structure and representation theory of semisimple Lie algebras. We will mostly follow the book of Humphreys; the Fulton-Harris text will serve mainly as a source of examples and alternative proofs.

This course syllabus provides a general plan for the course; deviations may be necessary.