

MAT 4142/5143: Introduction to Lie Algebras

Fall 2009

Instructor: Erhard Neher, Department of Mathematics & Statistics, 585 King Edward, office 207C, email: neher@uottawa.ca

Regular Office hours: Tuesday, 1:30-3pm (preliminary), or by appointment. I will also answer questions immediately after class on Monday. If it is not possible to see me during my office hours, please talk to me after class or send me an email to set up an appointment.

Lectures: Monday and Wednesday, 13:00–14:30 in KED B005.

Prerequisites: MAT 3141 and two more third-year courses at the MAT 31xx level, or permission of the instructor.

Textbook for MAT 4142: “Introduction to Lie Algebras” by Karin Erdmann and Mark J. Wildon, published by Springer-Verlag in the Springer Undergraduate Mathematics Series.

Textbook for MAT 5143: “Introduction to Lie Algebras and Representation Theory”, by J. E. Humphreys. Springer-Verlag, Graduate Texts in Mathematics, Vol. 9.

Course outline: We will cover essentially all of the 4th-year textbook. In Humphreys’ book these are approximately the chapters I, II, III and V.

Midterm: There will be a midterm, scheduled for

Wednesday, October 28, 13:00–14:30.

The midterm as well as the final exam will closed-book exams. The midterm exam cannot be written at another time. If the midterm is missed for a valid reason, approved by me, the weight of the midterm (25%) will be shifted to the final exam.

Homework: There will be weekly homework assignments, to be handed in on Wednesday, 13:00, *before the class starts*. Students taking the graduate version of the course will be assigned extra reading material and exercises taken from Humphreys’ book.

Final Grade: If the grade of the final exam is less than 45% then the final grade = grade of final exam, i.e., F if the grade of the final exam is less than 40% or E if the grade of the final exam lies between 40% and 45%. If the grade of the final exam is at least 45%, then the final grade will be calculated as follows: 15% homework + 25% midterm + 60 % final

Memoir: Up to 10% of extra credit (bonus points) can be obtained by writing a small memoir (approximately 15 pages) on a topic agreed upon by the student and the instructor. Deadline for choosing this option: September 30. Deadline of submission of the memoir: December 7.

All changes to this outline will be announced in class.