Galois Theory

Course: MATH 4331 (Undergraduate), MATH 6328 (Graduate)

Semester: Fall 2019

Instructor: Yorck Sommerhäuser

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Class meetings: Monday, Wednesday, Friday 3:00 pm–3:50 pm, SN 4063

Office hours: Monday, Friday 4:15 pm–6:15 pm and by appointment.

Textbook: J. J. Rotman: Galois theory, 2nd edition, Springer, Berlin, 1998 (required resource)

Course description: The course introduces the student to Galois theory. Topics treated include Cardan's formula for the solution of the cubic, irreducible polynomials, field extensions, splitting fields, Galois groups, the fundamental theorem of Galois theory, and the solvability of equations by radicals.

Coverage: The course covers the entire textbook, with the exception of the appendices.

Exams: There will be a midterm exam and a comprehensive final exam. The midterm exam takes place on Friday, October 18 during regular class time in the usual classroom. The final exam takes place during the examination period from December 4 to December 13 at a time and in a room determined by the registrar's office.

Homework: Beginning on Monday of the third week, a weekly exercise sheet will be handed out. This has to be submitted in class on the following Monday. There will be no exercise sheet during the week of the midterm exam and no exercise sheets during the last two weeks of the semester. In addition, a reading assignment from the textbook will be given in every lecture.

Writing assignments: To distinguish the graduate course from the undergraduate course, the graduate course will have two additional writing assignments, one on separability and one on the existence of an algebraic closure. They should be written as an essay of about five to ten pages. The precise description of the first writing assignment will be given out on Monday, October 21, and the precise description of the second writing assignment will be given out on Friday, November 15.

Policies: Eating, drinking, and smoking is not permitted in the classroom. You are expected to be present at every class meeting, from the beginning to the end. The use of electronic devices, especially cellphones, calculators, and laptop computers, is not permitted without explicit permission of the instructor. Electronic devices have to be turned off completely.

Memorial University accommodates students with disabilities and demands academic integrity. The corresponding university policies can be found at http://www.mun.ca/policy/site/policy.php?id=239 and in the Academic Calendar in Paragraph 6.12, respectively.

Prerequisite: MATH 2051 (Linear Algebra II) and MATH 3320 (Abstract Algebra) or equivalent

Marking weights:

Homework:	25 %
Midterm exam:	25 %
Final exam:	50 %