

MATH 4025/5025: COMMUTATIVE ALGEBRA
WINTER 2011

Time & Location: Tuesdays & Thursdays 11:35-12:55 in LSC C216.

Instructor: Sara Faridi

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Office Hours: Tuesdays & Thursdays 1:30 – 2:30, and by appointment.

Course Website: Information about the course will be occasionally updated on the following website: <http://www.mathstat.dal.ca/~faridi/teaching/5025/index.html>

Text: *Steps in Commutative Algebra*, by R. Y. Sharp, Second Edition, Cambridge University Press.

Also, the following books are standard references for a first course in commutative algebra. I encourage you to consult them throughout the semester.

Introduction to commutative algebra, by Atiyah & Macdonald,

Commutative algebra, by Matsumura,

Commutative ring theory, by Matsumura,

Commutative algebra with a view toward algebraic geometry, by Eisenbud.

Course Overview: Our goal in this course is to introduce the basic ideas of commutative algebra, and some aspects that relate to algebraic geometry and number theory. Topics include: ideals, modules, prime ideals, primary decomposition, chain conditions, localization, integral extensions, Noether normalization, Hilbert's Nullstellensatz, dimension theory, discrete valuation rings, Dedekind rings.

Homework: There will be regular homework assignments throughout the semester. The frequency depends on how fast we progress through a topic, but generally a homework set every other week is a good estimate.

Midterm: Thursday February 17th in class.

Grading: Your final grade for the course will be based 30% on your homework, 30% on your midterm, and 40% on your final exam.

Undergraduate Students: The number of problems on each problem set as well as the midterm is reduced for undergraduate students.

Students with disabilities: Students with disabilities are encouraged to register as quickly as possible at the Student Accessibility Services if they wish to receive academic accommodations. To do so please phone 494-2836, email access@dal.ca or drop in at the new Mark A. Hill Accessibility Centre. You can also visit their website www.studentaccessibility.dal.ca. Students are also reminded that, for your convenience, all forms are now available on this website.

Disclaimer: Changes to the course outline and evaluation scheme may include but are not limited to adjustments to course assignments and changes to the dates of exams.