Abstract Algebra I
Math 8220 Section 5, CRN-85596, Fall 2011

Instructor: Florian Enescu

Classroom: 424 Sparks Hall **Class timings:** M W 1:30 – 2:45 pm

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Office: 758 COE **Phone:** (404) 413 - 6442

Office Hours: Tu 1:30-2:30pm, Th 11am-12pm, and by appointment.

Recommended textbook:

Basic abstract algebra, 2nd edition

by P. B. Bhattacharya, S. K. Jain, S. R. Nagpaul, ISBN 0-521-46629-6.

We will cover most of chapters 6, 7, 8, 15, 16, 17, 18.

Other recommended texts:

D. Dummit and R. Foote, Abstract Algebra, Wiley, (list price: 147.16)

S. Lang, Algebra, Springer Verlag (list price : $ 74.95)

T. Hungerford, Algebra, Springer Verlag (list price: $ 54.95)

M. Artin Algebra, Prentice Hall (list price: $ 114.40)

E. Artin, Galois theory, Dover (list price: $ 7.95)

P. J. McCarthy, Algebraic extensions of fields, Dover (list price: $ 8.95)

J. Milne, Lecture notes on Galois Theory, at http://www.jmilne.org/math/index.html

Course content/outcome: The course offers a solid introduction in graduate level algebra. The topic presented is Galois Theory, one of the most concrete applications of modern algebra. The theory was developed by Evariste Galois in the nineteenth century, but its present form has developed in time with contributions from Steinitz and E. Artin at the beginnning of the twentieth century.

We will discuss field and Galois theory including splitting fields, algebraically closed fields, separable extensions, the fundamental theorem of Galois theory, finite fields, the Galois group of polynomials, insolvability of the quintic.

A part of the course will be devoted to a crucial chapter in the theory of groups: actions on groups and Sylow Theorems. This topic has important applications to the classification of finite groups and hence ties naturally to Galois theory.

Prerequisites: MATH 4442/6442 with a grade of C or higher. During the first two weeks of the semester the Department of Mathematics and Statistics checks the computer records to determine whether or not each student has met the prerequisites for this course. If you do not have the prerequisites please so inform your instructor and change to another course right away. If our computer search finds that you do not have the prerequisite, you must drop the course or you will be dropped automatically. If you do not attend class during the first two weeks you will be administratively dropped.

Grading scheme for Math 8220:

Homework:	25 %	
Exam 1:	25 %	Wednesday, September 21
Exam 2:	25 %	Wednesday, October 26
Final exam:	25 %	Wed, December 7, 13:30 pm

Homework: Regularly scheduled homework assignments will be provided (generally every seven to ten days). You can talk among yourselves about the problems assigned, however the work turned in has to be individually written.

Exams: There will be two exams and one in-class final exam. The final exam is comprehensive and required. The lowest score of the two midterm exams will be replaced by the final if advantageous to the student.

Using the above weights, letter grades will be assigned (roughly) as follows:

90–100 = A, 87–89 = B+, 80–86 = B, 77–79 =C+, 70–76 = C 60–69= D

less than 60 = F.

Attendance: You are expected to attend regularly for the entire period of the class. That is, you are expected to arrive on time and stay for the duration of the class. Attendance will be taken periodically. After four or more absences a student can be dropped from this class. In case of an absence, the student is responsible for knowing all the material covered.

Important dates: Last day to drop a class: August 26, on GoSolar. A student that does not attend the first two weeks can be dropped by the instructor.

Last day to withdraw from term length classes and possibly receive a W: October 7.

Disruptive behavior: Any disruptive behavior will be handled according to the University's policy on disruptive behavior (http://www.gsu.edu/∼wwwsen/minutes/2002-2003/disrupt.html). This includes the possibility of withdrawing the student from the class.

Academic honesty: Academic honesty is expected from any student. Cheating will not be tolerated and handles according to the University's policy on academic honesty (http://www.gsu.edu/∼wwwdos/codeofconduct_conpol.html) which includes academic as well as disciplinary penalties.

Special accomodations: Students who wish to request accommodation for a disability may do so by registering with the Office of Disability Services. Students may only be accommodated upon issuance by the Office of Disability Services of a signed Accommodation Plan and are responsible for providing a copy of that plan to instructors of all classes in which accommodations are sought.

Changes: Any changes to the above syllabus will be announced in class. The course syllabus provides a general plan for the course; deviations might be necessary.