Modern Algebra II-Math 4442/6442 Section 005, CRN-16853/16855, Spring 2014

Instructor: Florian Enescu

Classroom: Langdale 625 **Class timings:** Tu Th 1:00 – 2:15 pm

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Office hours: 758 COE Tu 10-11am, F 10-11am and by appointment

Webpage: http://www2.mathstat.gsu.edu/∼matfxe/currentclasses

Recommended textbook(s):

My lectures will represent the official material for the course.

I will structure them based upon

Basic Abstract Algebra, 2nd edition

by Bhattacharya, Jain, Nagpaul, Cambridge University Press.

We will cover most of the chapters 9, 10, 1, 12, and parts of chapters 15 and 16, if possible.

There are other texts that can be used, such as the ones listed below.

The first is concise and to the point. The second goes slower and insists

on simpler examples. The third is at intermediate level.

Abstract algebra, 3rd edition

by I. N. Herstein, John Wiley & S, ISBN 0-471-36879-2.

We will cover chapters 4–6 from this text.

A first course in abstract algebra, 7th edition

by John B. Fraleigh, Addison Wesley, ISBN 0-201-76390-7.

We will cover most of chapters IV-VI.

A First Course in Abstract Algebra with Applications, 3rd edition

by J. J. Rotman, Pearson Prentice Hall, ISBN 0-13-186267-7.

We will cover most of chapter 3, and parts of chapter 5 if possible.

Course content/outcome: The course offers a solid introduction in modern algebra by covering basic concepts that are at the foundation of modern mathematics. It continues the first course in algebra which introduced groups. This course will emphasize the understanding of the concepts, through examples and proof writing. The course will discuss the foundations of ring and field theory: notion of ideals, fundamental theorems of isomorphism for rings, polynomial rings, divisibility in rings, field extensions, algebraic extensions, vector spaces, module theory and other topics if time permits. The students passing the course will be able to present the proofs of the majors results as well as apply them in the solving of routine exercises.

The students enrolled at graduate level we will have to show demonstrate a deeper understanding of the concepts presented with emphasis on theoretical aspects. This knowledge will be tested by extra problems in

homework assignments and exams that will require more substantial written portions. Those problems will be available to undergraduate students as extra-credit problems.

Prerequisites: MATH 4441 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.

Homework: There will be a weekly homework assignment that will be graded. No late homework will be accepted. You can discuss the problems among yourselves, but the write-up of the solutions has to be done individually according to your own understanding. Identical assignments will not be graded. The assignments as well as the exams for Math 6442 will be more involved than the ones for Math 4442.

Grading scheme for Math 4442/6442:

Homework:	25 %	
Exam 1:	25 %	Tuesday, February 25
Exam 2:	25 %	Thursday, March 27
Final exam:	25 %	Tuesday, April 29, 10:45-13:15pm

Exams: There will be two midterm exams and one final. The final exam is comprehensive and required. Also, the final exam grade will replace the lowest grade of one (and only one) midterm exam in case the final exam grade is higher. No midterm exam grade will replace the final exam grade. Make-up exams will only be allowed for extreme emergencies that must be documented, such as medical emergencies. It is the instructor's role to determine if a specific emergency is a valid one.

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. 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: January 17, 5pm, 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: March 4, 2014.

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.