Syllabus for MA407H - Fall 2007
Introduction to Modern Algebra

Instructor

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Office: Harrelson Hall 347

Class Information

Lecture time: Tuesdays-Thursdays 1:30-2:45pm
Lecture location: Harrelson Hall 274
Office hours: Tuesdays-Thursdays 11:00-12:00pm
Location of Office Hours: Harrelson Hall 347
Course web: www.math.ncsu.edu/~aszanto/MA407H/

Goals and Objectives

The objective of the course is to provide an introduction to algebraic structures and abstract reasoning. This course covers topics such as elementary number theory, equivalence relations, groups, homomorphisms, cosets, Cayley’s Theorem, symmetric groups, rings, polynomial rings, quotient fields, principal ideal domains, Euclidean domains, as well as applications of these.

Completing the course work, the students will be able

● to recite the definitions and theorems, and use them to test for groups, rings, and fields and their respective homomorphisms and isomorphisms.

● to solve specific problems, similar to the ones covered in homework and in class.

● to give logical reasoning and proofs for simple statements based on the axioms, definitions and theorems covered in class.

● to apply the concepts covered in class to various branches of mathematics and in real life. In particular, to complete a project on some of these applications

Textbook

Contemporary Abstract Algebra, Sixth Edition
By Joseph A. Gallian

Available at: NCSU Bookstore or amazon.com
Web resources

The following web resources are highly recommended:

Flash cards for the abstract algebra book: http://www.cps.brockport.edu/~tuzun/gallian.html
True/False quiz for abstract algebra: http://www.d.umn.edu/~jgallian/TF/
Software for the computer exercises: http://www.d.umn.edu/~jgallian/msproject06/project_xukai.html
Abstract Algebra with GAP lab manual: http://euler.slu.edu/Dept/Faculty/rainbolt/manual.html

Topics and estimated days allocated to each topics

- Preliminaries: 1 week
- Introduction to groups: 2 weeks
- Cyclic groups: 1 week
- Permutation groups: 1 week
- Isomorphisms: 1 week
- Cosets and Lagrange's theorem: 2 weeks
- Normal subgroups, factor groups, homomorphisms: 2 weeks
- Introduction to rings: 1 week
- Integral domains and fields: 1 week
- Ideals and factor rings: 1 week
- Polynomial rings: 1 week

*Important!* Students should read the next chapter in the book before coming to class!!

Tentative schedule of reading assignments

See separate sheet

Tentative schedule of homework due dates, quizzes and tests

See separate sheet
Determination of grades: + and - system

Homework, Quizzes and Class Participation: 20%
3 class Tests: 60%
Final Project: 20%

Those students who have less than 3 absences (for any reason) at the end of the semester, will have their worst test grade dropped (final not included).

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Policy on incomplete grades and late assignments

Homework will be assigned and collected once every two or three weeks. It is the students' responsibility to do the homework. For the homework problems, check the course website. Late homework will NOT be accepted, since I hand out solution sets on the due date.

We will grade most of the homework collectively on the due date. This is part of the learning process, to make sure that you know the correct answers and you learn from your own and other's mistakes. **It is important that you arrive to class in time on the HW due date, otherwise your HW will not be accepted.**

Policy on absences (excused and unexcused) and scheduling makeup work

Students are expected to arrive on time, to contribute to group work and class discussions, and to stay until the class ends. Attendance at all meetings of the class is expected. Occasional absences will be approved if they meet University policy (see University policies). Those students who have less than 3 absences (for any reason) at the end of the semester, will have their worst test grade dropped (final not included).

There are no make-up exams. Missed tests are not allowed unless an official written (medical, legal) excuse is presented before the test or in emergency cases at most one week after the test.
Class evaluation

Online class evaluations will be available for students to complete during the last two weeks of class. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will never know how any one student responded to any question, and students will never know the ratings for any particular instructors.

Evaluation website:  https://classeval.ncsu.edu
Student help desk: classeval@ncsu.edu
More information about ClassEval:  http://www2.acs.ncsu.edu/UPA/classeval/index.htm

Getting help

Undergraduate Tutorial Center,
152 Fox Building,
Contact: Barbie Windom, 515-8496

Math Multimedia Center,
244 Harrelson Hall, 513-2300

Academic Integrity Statement

Students are expected to follow the University’s Code of Student Conduct Policy (POL11.35.1) available at (link).

NC State policy on working with students with disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.1) (link).

Statement on laboratory safety or risk assumption in courses requiring physical activity or field trips:

None
Statement on extra expenses or charges e.g. lane rental at bowling alley, field trip costs, etc.:

None

Transportation Information:

NCSU Academic Regulations can be found at http://www2.ncsu.edu/unity/project/www/ncsu/provost/info/academic_policies/ (link)