Syllabus
MA522 Fall 2008
M-W-F 10:15-11:05am Harrelson Hall 263
www.math.ncsu.edu/~aszanto/MA522/

Instructor

Dr. Agnes Szanto
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Office Hours

Thursdays 10:00-11:00am,
Fridays 11:10-12:10pm

Course Prerequisites

C or better grade in: (MA 407 or MA 521) and (MA 405 or MA 520) or
permission from instructor

Goals and Objectives

Basic techniques and algorithms of computer algebra. Integer arithmetic,
primality tests and factorization of integers, polynomial arithmetic,
Euclidean algorithm, resultants, Groebner bases, solution of polynomial
systems, polynomial factorization.

Textbook

Joachim von zur Gathen and Juergen Gerhard: Modern Computer Algebra,
Cambridge University Press, 1999 or 2003.

Recommended books

Thomas H. Cormen et al. "Introduction to Algorithms", 2nd or 3rd edition,
MIT Press

Topics and estimated weeks allocated to each topic

Algorithms and complexity: 2 weeks
Symbolic vs. Numerical computation: 1 week
Polynomial division & Euclidean algorithm: 1 week
Chinese remainder: 1 week
Interpolation: 1 week
Resultants and subresultants: 1 week
Polynomial ideals, membership: 1 week
Groebner bases: 2 weeks
Factoring polynomials: 3 weeks
Projects: 1 week

**Important!** Students should read the upcoming sections in the book before coming to class!!

**Determination of grades: + and - system**

- Homework, Quizzes and Class Participation: 20%
- In class Test 1: 20%
- In class Test 2: 20%
- In class Test 3: 20%
- 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, and the other two counted 30% each.

**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 may hand out solution sets on the due date.**

**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](https://classeval.ncsu.edu)

Student help desk:
classeeval@ncsu.edu

More information about ClassEval:
[http://www2.acs.ncsu.edu/UPA/classeval/index.htm](http://www2.acs.ncsu.edu/UPA/classeval/index.htm)
Academic Integrity Statement:
Students are expected to follow university guidelines available at
http://www.ncsu.edu/policies/student_services/student_discipline/POL
11.35.1.php

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).