

North Carolina State University
Department of Mathematics

Course: MA 437, Applications of Algebra, Spring 2005.

Time: Mo-We-Fr 11.20-12.10 HA 272

Instructor: Dr. Robert E. Hartwig, 217 HA,; tel:515-2385; email: hartwig@math.ncsu.edu;
webpage: <http://www.math.ncsu.edu/~hartwig/Teaching>

Office hours: MWF 12.30-1.30

Text: R.E. Klima, N. Sigmon and E. Stitzinger, Applications of Algebra, CRC Press, 1st- ed

Schedule: The syllabus is based on 50 minute lectures.

Breaks: Jan 17, Mch 7-11 (M-F), Mch 24-25 (Th-F)

Goals and Objectives: To illustrate some of the many areas in science, industry and real life, where Modern Algebra plays a pivotal role. The use of maple is encouraged.

CHAPTERS	TOPICS	No. of Lectures
1	Preliminary Mathematics	3
2	Algebraic Cryptography	5
3	The RSA System	4
4	Block Designs	5
5	Error Correcting Codes	6
6	BCH Codes	5
7	Reed-Solomon Codes	6
8	Elliptic Curve Cryptography	4
9	Polya Theory	3
Fri Feb 18	First Part-term Test, in class	1
Fri Mch 25	Second Part-term Test, in class	1
Mon May 9	Final Exam 8-11 am	

Homework: there will be several homework assignments, (bi/tri- weekly) two midsemester tests and a cumulative final exam. The homeworks will be collected and graded and must be done individually. They serve both as practice as well as samples for the exams. If you have questions ask the instructor.

Grading and General Information: The course grade is based on the following:
Final 35%, Midterms 35%, Homework 30%

If you miss a class it is your responsibility to (a) get a copy of the notes and (b) find out if any schedule changes (HW or tests) were announced.

If you miss a class/test because of illness etc. please let me know. I may require you to document your reasons.

Please note the names and tel. numbers/emails of at least 2 of your class mates.

Special students please make an appointment to see me within the first few weeks.

Last day of class Ap 29