

**NCSU Mathematics Department**

**MA 437 – Applications of Algebra**

**Fall 2009, MWF 11:20-12:10, COX 209**

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**Course Webpage:** <http://www4.ncsu.edu/~bnbakalo/ma437.html>

**Text:** *Applications of Abstract Algebra with Maple and MATLAB*, by R.E. Klima, N.P. Sigmon, E.L. Stitzinger, Second Edition, Chapman & Hall/CRC, 2006. ISBN-10: 1584886102. ISBN-13: 978-1584886105.

**Tentative Topics:**

Chapter 1	(6 lectures)	Preliminary mathematics
Chapter 2	(5 lectures)	Block designs
Chapter 3	(5 lectures)	Error correcting codes
Chapter 4	(5 lectures)	BCH codes
Chapter 5	(6 lectures)	Reed-Solomon codes
Chapter 6	(3 lectures)	Algebraic cryptography
Chapter 8	(3 lectures)	The RSA cryptosystem
Chapter 9	(5 lectures)	Elliptic curve cryptography
Chapter 11	(4 lectures)	Pólya theory