

OFFICIAL SYLLABUS

MATH 420: Abstract Algebra

(Adopted - Fall 2003; Committee: Drs. J. Bryden, J. Parish)

Catalog Description: [Dist.NSM] Basic algebraic structures and properties. Groups: subgroups, normality and quotients, isomorphism theorems, special groups. Rings: ideals, quotient rings, special rings. Fields: extensions, finite fields, geometric constructions. Prerequisite: 320 or consent of instructor.

Textbook: *ABSTRACT ALGEBRA: A GEOMETRIC APPROACH*, by Theodore Shifrin, 1996 by Prentice Hall

Course Outline and Topics

Ch. 1: The Integers

Ch. 2: From the Integers to the Complex Numbers

Ch. 3: Polynomials

Ch. 4: Homomorphisms and Quotient Rings

Ch. 5: Field Extensions

Ch. 6: Groups

Ch. 7: Group Actions and Symmetry (optional)

Ch. 8: Non-Euclidean Geometries (optional)

Any instructor should cover all of the material specified; additional sections are optional.