



September 2011

## **MATH 560 Field Theory**

1. Catalog Description

**MATH 560 Field Theory (4)**

Polynomial rings, field extensions, normal and separable extensions, automorphisms of fields, fundamental theorem of Galois theory, solvable groups, solution by radicals, insolvability of the quintic. 4 lectures. Prerequisite: Satisfactory completion of the Graduate Written Examination in Algebra or consent of the Graduate Committee.

2. Required Background or Experience

Satisfactory completion of the Graduate Written Examination in Algebra.

3. Learning Objectives

The student should attain a deeper understanding of the use of group, ring and field theory in solving difficult problems in the theory of equations.

4. Text and References

To be selected by the instructor.

5. Minimum Student Materials

Paper, pencils and notebook.

6. Minimum University Facilities

Classroom with ample chalkboard space for class use.

7. Content and Method

Topic

Review of polynomial rings  
Field extensions  
Galois theory  
Solvability

8. Methods of Assessment

Homework and examinations.