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.