**MA\*712 Algebra-II**

**Prerequisite: Algebra-I**

Ring of polynomials over a field. Field extensions. Algebraic and transcendental elements, Algebraic extensions. Splittingfield of a polynomial. Algebraic closure of a field, Uniqueness. Normal, separable, purely inseparable extensions. Primitive elements of a field extension – simple extensions. Fundamental theorem of Galois. Solvability by radicals – Solutions of cubic and quartic polynomials, Insolvabity of quintic and higher degree polynomials. Geometric constructions.

**References:**

1. D. S. Dummit and R. M. Foote: Abstract Algebra, 2nd Edition, John-Wiley, 1999.
2. S. Lang: Algebra 3rd Edition, Addison-Wesley, 1999.
3. J.A. Gallian: Contemporary Abstract Algebra, 4th Ed., Narosa, 1999.
4. M. Artin: Algebra, Prentice Hall inc 1994.
5. I.N. Herstein: Topics in Algebra, John-Wiley, 1995.
6. T. A. Hungerford: Algebra, Graduate Texts in Mathematics, Vol. 73, Springer-Verlag, 1980.