

Module Code: MATH-407
Module Title: **Ring Theory**
Module Rating: 3 Cr. Hours

Ring Theory

- Construction of new rings
- Direct sums, polynomial rings
- Matrix rings
- Divisors, units and associates
- Unique factorisation domains
- Principal ideal domains and Euclidean domains

Field Extensions

- Algebraic and transcendental elements
- Degree of extension
- Algebraic extensions
- Reducible and irreducible polynomials
- Roots of polynomials

Recommended Books

1. I. N. Herstein, *Topics in Algebra*, (Xerox Publishing Company Mass, 1972)
2. B. Hartley and T. O. Hauvkes, *Rings, Modules and Linear Algebra*, (Chapmann and Hall Ltd., London, 1970)
3. R. B. Allenly, *Rings, Fields and Groups: An Introduction to Abstract Algebra*, (Edward Arnold, 1985)
4. J. Rose, *A Course on Rings Theory*, (Cambridge University Press, 1978)
5. G. Birkhoff and S. Maclane, *A Survey of Modern Algebra*, (Macmillan, New York, 1964)



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