

Unit I: - Basic Definitions- Monogenic Semigroups- Ordered Sets, Semi lattices and lattices- Binary relations; equivalences- Congruences- Free semigroups- Ideals and Rees Congruences. (Chapter I Section 1.1-1.7)

Unit II: - Greens Relations- Structure of D- classes- regular D- classes- regular semigroups-The sandwich Sets (Chapter II Section 2.1 – 2.5)

Unit III: - Simple and 0-simple semigroups- principal factors, Rees Theorem- Completely simple semigroups- Isomorphism and normalization (Chapter III Section 3.1 – 3.4)

Unit IV: -Completely Regular Semigroups- Clifford Decomposition- Clifford semigroups- Bands- Free Bands- Varieties of Bands(Chapter IV Section 4.1- 4.6)

Unit V: -Inverse semigroups- Preliminaries- The Natural partial order relation on an inverse semigroup- Congruences on Inverse semigroups- -The Munn Semigroup(Chapter V Section 5.1 – 5.4)

Text Books / Reference Books:

1. Fundamentals of Semigroup theory, J. M. Howie, Clarendon Press, Oxford ISBN0- 19-851194-9
2. The Algebraic Theory of Semigroups- A. H. Clifford and G. B. Preston, American Mathematical Society 1961
3. Semigroups: An Introduction to the Structure Theory- P. A. Grillet, Marcel Decker INC. 1995
4. Techniques of Semigroup Theory- Peter M. Higgins, Clarendon press