

SX - S110 SYLLABUS
Ne 7 2003 - 2004 AB

ANDHRA UNIVERSITY
DEPARTMENT OF MATHEMATICS
/M.Sc MATHEMATICS
I-SEMISTER
M 101 ALGEBRA - I

UNIT I

Normal subgroups- Quotient groups-Isomorphism theorems-
Automorphisms- Conjugacy and G-Sets - Cyclic Decomposition -
Alternating group A_n - Simplicity of A_n .

Chapters 5 and 7 of the Prescribed text book.

UNIT II

Direct Products- finitely generated abelian groups - Invariants of a finite
abelian group-Sylow theorems - Groups of orders p^2 , pq .

Chapter 8 of the Prescribed text book.

UNIT III

Ideals, Homomorphisms, Sum and direct sum of ideals, Maximal and
Prime Ideals

Chapter 10.1, 10.2, 10.3, 10.4 of the Prescribed text book.

UNIT IV

Nilpotent and Nil Ideals, Zorn's Lemma, unique factorization domains,
Principal ideal domains, Polynomial rings over UFD

Chapter 10.5, 10.6 and Chapter 11 of the Prescribed text book.

Prescribed Book:

Basic Abstract Algebra: P.B. Bhattacharya, S.K.Jain and S.R.Nagpaul,
Second edition, reprinted in India 1997,2000,2001