

Department of Mathematics

Faculty of Science

MATH 329 (206329) FUNDAMENTAL CONCEPTS OF ALGEBRA

3(3/3-0/0)

Abbreviation FUND CONCEPTS OF ALGEBRA

Prerequisite MATH 309 (206309)

Recommended Open only to teaching mathematics in secondary school major

Course Description

Group. Ring. Field. Integral domain. Polynomials. Vector space. System of linear equations. Matrices and determinants. Linear transformations.

Course Contents

No. of Lecture Hours

1. Review basic concepts	7
Set. Relation and function. Binary operation. Composition of functions. Equivalence relation. Integer modulo n.	
2. Group	8
Closure of binary operation. Semigroup and group. Identity property. Inverse property. Elementary properties.	
3. Types of group	10
Symmetric and permutation groups. Subgroup. Intersection and Union of subgroups. Cyclic group. Product of groups. Discussion.	
4. Ring and integral domain	12
Ring and examples of ring. Commutative ring. Elementary properties. Ideal. Homomorphism. Polynomial ring. Integral domain. Discussion.	
5. Field	8
Definition and examples. Characteristic of a field. Subfield. Field extension. Discussion.	
Total	<u>45</u>