SEMESTER – 1st to 3rd

MULTIDISCIPLINARY COURSE

MATHEMATICS / APPLIED MATHEMATICS

Course Title: Basic Course in Mathematics **Course Code: BMA22M102**

Credits: 03 (45 Hours)

Objectives: The aim of this course is to prepare the students for the following.

(1) To aware the students about set theory, real and complex numbers.
(2) To understand the basic concepts of coordinate geometry.
(3) To prepare the students for applying basic mathematics for computational purposes.

UNIT – I

Introduction to set theory: Sets, Types of sets, Subsets, Basic operations on sets, Power set, Finite set, Infinite set, Countable and Uncountable sets and their examples, Cartesian product, Basic operations, D'-Morgans laws, Relations, Equivalence relations, Partially ordered sets.

UNIT – II

Real number system, Rational and Irrational numbers, Closure property of reals, Complex numbers, equality of complex numbers, operations on complex numbers, modulus and amplitude of a complex number, polar form of a complex number.

UNIT – III

Rectangular coordinate system, distance and section formulae, equation of straight lines, various forms, angle between lines. Second degree homogenous equations representing straight lines and angle between them. Matrices and their types, algebra of matrices, determinant of a square matrix.

Recommended Books

1. Set theory Schaum's series.
2. Matrices by Aziz, Nisar and Zargar.
3. Complex trigonometry by Aziz, Nisar and Zargar.
4. Matrices by Shanti Narayan.
5. Coordinate geometry by Shanti Narayan.
6. Mathematical Analysis by S.C. Malik.