



Marwadi University

Bachelor of Computer Application

Semester I (w.e.f. July, 2016)

Subject Code: 05BC0102

Subject Name: Foundation of Mathematics – I

Learning Objectives:

- The objective of this course is to enable students to obtain understanding of basic Mathematics concepts which can be applicable in various computer science problems.
- The objective of this course is to enable students to understand concepts of Set Theory, Coordinate Geometry, Matrix Algebra and solve simple application problems related to Computer Science based on these.

Prerequisites:

- Knowledge of basic concepts on sets and geometry and number system.

Course Content:

Unit	Course Content	Hours
1	Computer Arithmetic : <ul style="list-style-type: none">• Introduction of error• Types & Sources of error & related examples• Number representation of Computer system• Operations of Computer arithmetic• Accuracy, Precision & Blunders	6
2	Theory of Sets : <ul style="list-style-type: none">• Introduction of set & method of describing a set• Types of sets• Venn Diagrams of set• Operations on sets (Intersection, Union..)• Complement of set• De' Morgan's Law (with proof)*• Difference of two sets.• Algebra of sets (with proof)*• Symmetric Difference• Cartesian Product of sets.	10
3	Matrix Algebra : <ul style="list-style-type: none">• Introduction of Matrix• Types of Matrix• Scaler Multiplication of Matrix• Matrix Operations (Addition, subtraction, Multiplication)• Properties of Matrix• Transpose of Matrix• Determinant of Matrix• Minor & Cofactors of Matrix• Ad joint of Matrix• Inverse of Matrix• Cramer's Rule• Matrix Inversion method to solve equations	12



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4	Coordinate Geometry : <ul style="list-style-type: none">• Introduction Coordinate geometry• Directed line & Quadrants• Coordinates & coordinates of Mid point• Distance between two points• Section formula (without proof) & related examples• Area of Triangle (without proof) & related examples• General Equation of a Straight line• Slope and Intercepts of a line	12
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Reference Book(s):

1. “ **Business Mathematics** “ by V.K.Kapoor & D.C.Sancheti (Latest edition) Sultan Chand & Sons Publications.
2. “**Numerical Methods for Engineers**”, 5th Edition by Steven C Chapra, Raymond P Canale, Tata McGraw Hill Publication, Special Indian Edition
3. " Business Mahtematics "(second edition),Vikas Publicationing house, Authors: V.K.khanna, S.K.Bhambri,Qazi Zameeruddin
4. "Engineering Mathematics"(third edition), Perason education publication, Authors: Anthony croft,Robert Davison,Martin Hargreaves.
5. “Computer Oriented Numerical Methods” by Dr. N Datta,, Vikas Publication