

Multidisciplinary Course
w.e.f. AY 2026-27
SEMESTER-III
BASIC MATHEMATICS

Credits: 2

2 hrs/week

Course Outcomes

After successful completion of this course, the student will be able to:

1. understand the concept of sets and relations
2. know the method of rationalisation in surds
3. understand Co-ordinate system and Locus
4. find the Point of Intersection of two straight lines
5. find the Rank of a matrix.

Course Content

Unit – I : Algebra

Sets and Relations : Sets – Finite and Infinite sets – Equality of sets – Subsets – Power set – Universal set – Union and Intersection of sets – Relations – Equivalence relations – Examples.

Surds : Surd – Pure and Mixed surds – Similar surds – Monomial surds – Binomial Surds – Rationalisation.

Logarithms : Definition – Properties of Logarithms – Common Logarithms.

Unit – II : Co-ordinate Geometry

Co-ordinate system : Distance between two points – Division formula – Centroid – Areas of Triangles and Quadrilaterals.

Locus : Definition of Locus – Equation of Locus.

Straight Line : Different forms – Reduction of general equation into various forms – Point of Intersection of two straight lines.

Unit – III : Matrices

Matrices : Types of matrices – Examples – Addition of Matrices – Subtraction of Matrices – Scalar multiple of a matrix – Multiplication of matrices – Transpose of a matrix and determinants – Minors and Cofactors – Adjoint of a matrix – Inverse of a matrix – Rank of a matrix – definition and examples.

Activities:

Seminar/ Quiz/ Assignments/ Problem Solving Sessions.

Reference Books :

1. Basic Abstract Algebra by P.B. Bhattacharya, S.K. Jain, S.R. Nagpaul, Cambridge University Press.
2. Co-ordinate Geometry by M.L. Khanna, Jai Prakash Nath Publications.
3. A Text book of Matrices by Shanti Narayan & P.K. Mittal, S.Chand Publications.


(V.K. Deenadayal)
BOS, chairperson

**II Year – III Semester
Multidisciplinary Course
BASIC MATHEMATICS**

Time: 1.30 hrs

Max. Marks 50

Answer any Five of the following

5 X 10=50 M

- 1.**
- 2.**
- 3.**
- 4.**
- 5.**
- 6.**
- 7.**
- 8.**
- 9.**
- 10.**