Matrix Theory & Geometry

Course Code: BEB107
Contact Hours: 60

Credit: 04 (L-3, T-1, P-0)
MM: 100

Course Objectives:
1. To provide knowledge to student about Matrix and Geometry.
2. To provide the concept of determinant and its properties.
3. To make able to distinguish between matrices and determinant.
4. To make them clear about the tracing of different curves.

Course Outline

MATRIX - Introduction of matrix, types of matrix, Rank of a matrix, Elementary transformations, Echelon and normal forms, Inverse of a matrix by elementary transformations. Characteristic equation, Eigen values and eigen vectors of a matrix, Cayley-Hamilton's theorem and its use in finding inverse of a matrix, Application of matrices to solve a system of linear (both homogeneous and non-homogeneous) equations, Consistency and general solution.

GEOMETRY - General equation of second degree, Tracing of conics, System of conics, Confocal conics, Polar equation of a conic and its properties.
Three dimensional systems of co-ordinates, Projection and direction cosines, Plane, Straight line, Sphere, cone and cylinder.

Course Outcomes:
After completing the course, students will be able to:

1. Understand various Laws determinant in matrix.
2. Analyze the system of linear equation, consistency and and general solution.
3. Identify the difference between plane and straight lines.
4. Understand the Three dimensional systems of co-ordinates.
5. Evaluate the Rank of a matrix, Elementary transformations.
6. Solve the linear (both homogeneous and non-homogeneous) equations.

Suggested Books:

1. H.K.Dass. Higher Engineering Mathmatics, S.Chand Publications.
2. B.S.Grewal, Engineering Mathematics, Khanna Publication.
3. Deepak Chattergy, Analytic Solid Geometry, Prentice Hall of India New Delhi.
4. Roger Fenn, Geometry, Springer India Pvt. Ltd New Delhi.
5. Krishna publication.
6. S. J. Publication.

Dean
Faculty of Education
Invertis University
Bareilly-243123, U.P

Head
Department of Education
Faculty of Education & Mass Comm.
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly