PEU4302 – Linear Algebra

Syllabus

Session 1 – Linear simultaneous equations and their solutions

Session 2 – Matrix Operations

Session 3 – Types of Matrices

Session 4– Elementary Transformations, Elementary Matrices and Equivalent
     Matrices

Session 5 – Echelon form of a Matrix

Session 6 – Determinants

Session 7 – Minors, Co-factors and Adjoint of a Matrix

Session 8 – Inverse of a Matrix

 Session 9 – Rank of a Matrix

Session 10 – Normal Form

Session 11 – Application of Matrix Theory to Linear Equations

Session 12 – System of Linear Non-Homogeneous Equations

Session 13 – Gaussian Elimination

Session 14 – Cramer's Rule

Session 15 – Eigenvalues and Eigenvectors

Session 16– Properties of Eigenvalues and Eigenvectors

Session 17 – Cayley-Hamilton Theorem

Session 18 – Diagonalization

Session 19 – Quadratic Form

Session 20 – Transformation of Quadratic Form to Canonical Form

Session 21 – Index, Signature and classification of definiteness

Session 22 – LU-Decomposition

Session 23 – LU-Decomposition by Gaussian Elimination

Session 24 – Complex Matrices

Session 25 – Mappings, Linear Mappings and Trace