BHARATHIAR UNIVERSITY, COIMBATORE -641 046

Semester —I Allied Mathematics-I

(For B.Sc Electronics and B.Sc Electronics and Communication)

2025-26 onwards

Unit-1 VECTOR CALCULUS

Concepts of vector and scalar fields-the Del operator-Divergence of a vector-curl of a vector.

Unit — II MATRICES

Different types of matrices- Inverse of a matrix - solution of simultaneous equations by matrix method.

Unit — III LAPLACE TRANSFORMS

Definition of Laplace transform-properties of Laplace Transform, Inverse Laplace transform. [ Simple Problems only]

Unit — IV FOURIER SERIES

Dirichlet’s conditions - General Fourier series-change of length of Interval-Fourier cosine and sine series.

Unit — V CONCEPTS OF PROBABILITY

Concepts of Probability- Addition theorem-multiplication theorem. [Simple Problems only]

TEXT BOOK FOR REFERENCE

1. P.Kandasamy, K.Thilagavathi, Mathematics for B.Sc Branch I – Vol III, IV , S.Chand and Company Ltd.
2. PA.Navaneetham, CMA.M.S.V.Lakshmi, Business Mathematics and Statistics, Jai Publishers.

**BHARATHIAR UNIVERSITY COIMBATORE - 46**

**Semester—II Allied Mathematics—II**

**(For B.Sc. Electronics / B.Sc. Electronics and Communication System) For the candidates admitted from the academic year 2025-2026 onwards**

**Unit- I DIFFERENTIAL EQUATIONS**:

Second order linear differential equation with constant coefficients - Applications to electronic circuits RL, RC, RLC.

**Unit –II NUMERICAL METHODS:**

Solving Simultaneous Equations process—Gauss Elimination method - Numerical Integration- Trapezoidal Rule- Simpson’s Rule.

**Unit –III FOURIER TRANSFORMS:**

Definition of Fourier Transform- Properties of Fourier Transform- Inverse Fourier Transform.

**Unit –IV SPECIAL FUNCTIONS:**

Beta and Gamma Functions- Definitions- Relationship between Beta and Gamma Functions (only statements)- -- Properties of Gamma and Beta Functions.

**Unit –V Complex Numbers:**

Definition of Complex numbers- Argand Diagram- Rectangular form- polar form- Conversion of rectangular form to polar and vice versa- addition, Subtraction- Multiplication and Division by using polar and rectangular forms-Demoivor’s Theorem.

**Text Books for Reference:**

1. Venkatraman: Engineering Mathematics- Vol-II
2. Venkatraman: Higher Mathematics for Engineering & Science

3.Venkatraman: Numerical Methods in Science & Engineering.