**17SH2101-ENGINEERING MATHEMATICS -II**

(Common to ECE, EEE, CE and ME)

**UNIT – I**

**LAPLACE TRANSFORMATION:**Laplace Transformations of standard functions - First shifting theorem - Change of scale property - Laplace transformation of multiple by t and division by t - Transformation of derivatives and integrals.

**UNIT – II**

**INVERSE LAPLACE TRANSFORMATION**: Inverse transforms - Method of partial fractions - Shifting property - Inverse Laplace transform of a multiple by s and division by s - Inverse Laplace transform of derivatives and integrals - Convolution theorem - Application to Solutions of Ordinary Differential Equations.

**UNIT-III**

**FOURIER SERIES**: Determination of Fourier coefficients - Fourier series - Even and Odd functions - Change of intervals (0,2l).

**UNIT-IV**

**FOURIER TRANSFORMS**: Fourier Integral Theorem (Without proof)-Fourier Sine and Cosine integrals - Fourier integral in complex form - Fourier Transforms - Fourier Sine and Cosine transforms.

**UNIT-V**

**Z-TRANSFORMS**: Z**-**Transform of some standard functions - Properties of Z**-**Transforms - Shifting Properties - Initial value theorem and final value theorem.

**UNIT-VI**

**INVERSE Z- TRANSFORM AND DIFFERENCE EQUATIONS**: Inverse Z-Transform - Convolution theorem-Inversion by partial fractions - Applications to difference equations.

**TEXT BOOKS:**

1. Higher Engineering Mathematics - B.S.Grewal, Kanna Publishers, New Delhi.
2. Engineering Mathematics - B.V. Ramana, Tata McGraw-Hill Education Pvt. Ltd, New Delhi.

**REFERENCE BOOKS:**

1. Higher Engineering Mathematics - H.K. Dass, Er. Rajnish Verma, S.Chand Publication, New Delhi.
2. Advanced Engineering Mathematics - N.P. Bali & M. Goyal, Lakshmi Publishers, New Delhi.

Advanced Engineering Mathematics - Erwin Kreyszig, Wiley, India