CS010 401: Engineering Mathematics

MODULE 1 Fourier series (12 hours)

Dirichlet conditions – Fourier series with period 2 π and 2l – Half range sine and cosine series – Harmonic Analysis – r.m.s Value

MODULE 2 Fourier Transform (12 hours)

Statement of Fourier integral theorem – Fourier transforms – derivative of transforms- convolution theorem (no proof) – Parsevals identity

MODULE 3 Partial differential equations (12 hours)

Formation by eliminating arbitrary constants and arbitrary functions – solution of Lagrange's equation –
Charpits method –solution of Homogeneous partical differential equations with constant coefficients.

MODULE 4 Probability distribution (12 hours)

Concept of random variable , probability distribution – Bernoulli's trial – Discrete distribution – Binomial
distribution – its mean and variance- fitting of Binominal distribution – Poisson distribution as a limiting
case of Binominal distribution – its mean and variance – fitting of Poisson distribution – continuous
distribution- Uniform distribution – exponential distribution – its mean and variance – Normal
distribution – Standard normal curve- its properties.

MODULE 5 Testing of hypothesis (12 hours)

Populations and Samples – Hypothesis – level of significance – type I and type II error – Large samples
tests – test of significance for single proportion, difference of proportion, single mean, difference of mean
– chi –square test for variance- F test for equality of variances for small samples.