



STANLEY
COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
(Approved by AICTE , New Delhi | Affiliated to Osmania University ,Hyderabad)
Address : Chapel Road, Abids ,Hyderabad

MT201

MATHEMATICS-III
(Common to all Branches)

Course Objectives:

- To introduce the concepts of Fourier series, partial differential equations and applications
- To provide the knowledge of some probability distributions, tests of significance, curve fitting, correlation and regression

UNIT – I

Partial differential Equations : Formation of partial-differential equations, Linear first order equations, Lagrange's equations, Non linear first order equations, Charpit's method, Standard forms.

UNIT – II

Fourier Series and its applications to partial differential equations : Expansion of a function in Fourier series for a given range, Fourier series for odd and even functions, change of interval, Half range sine and cosine series, Solution of wave equations, Heat equation and Laplace's equation by the method of separation of variables and their use in problems of vibrating string, One dimensional unsteady state heat flow and two dimensional steady state heat flow.

UNIT – III

Statistics: Solution Introduction to Probability, Baye's theorem, Random variables, Density functions, Mathematical expectation, Expected values, Moments and Moment generating functions, Characteristic functions.

UNIT - IV

Distributions: Poisson, Normal, Gamma and Chi-Square distributions, Tests of significance, Chi-Square, F and T-tests.

UNIT – V

Curve Fitting : Introduction, Fitting of curves by the method of least squares(straight line, parabola, exponential curves), Correlation and Regression, Lines of regression.

Suggested Reading:

1. R.K. Jain & S.R.K. Iyengar, *Advance Engineering Mathematics*, Narosa 4th Edition, 2014.

2. Dr B.S. Grewal, *Higher Engineering Mathematics*, Khanna Publications, 43rd Edition, 2014.

3. Dr.M.D.Raisinghania, *Ordinary and Partial differential equations*, S.CHAND, 17th Edition 2014.

4. Erwin Kreyszig, *Advanced Engineering Mathematics*, 9th Edition, 2012.

5. S.C.Gupta, V.K.Kapoor, *Fundamentals of Mathematical Statistics*, S.Chand&Sonss.

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