BS207MT

Faculty of Engineering, O.U. AICTE Model Curriculum with effect from Academic Year 2020-21

Course Code	Course Title						Core/Elective
BS205MT	**Mathematics – III (Probability & Statistics)**						**Core**
Prerequisite	Contact Hours per Week				CIE	SEE	Credits
	L	T	D	P			
-	3	1	-	-	30	70	4

Course Objectives
- To introduce the solution methodologies for second order Partial Differential Equations with applications in engineering
- To provide an overview of probability and statistics to engineers

Course Outcomes
After completing this course, the student will be able to:
1. Solve field problems in engineering involving PDEs.
2. They can also formulate and solve problems involving random variables and apply statistical methods for analysing experimental data.

AICTE NEW/OLD

UNIT-I: Introduction of Probability, Conditional probability, Theorem of Total probability, Baye's Theorem and its applications, Random variables, Types of random variables, Probability mass function and Probability density function, Mathematical expectations.

UNIT-II: Discrete probability distributions: Binomial and Poisson distributions, Mean, variance, moment generating function and evaluation of statistical parameters for these distributions, Moments, Skewness and Kurtosis.

UNIT-III: Continuous probability distributions, Uniform, Exponential and Normal distributions, Mean, variance, moment generating function and evaluation of statistical parameters for these distributions.

UNIT-IV: Curve fitting by the method of least squares: Fitting of straight lines, second degree parabolas and more general curves, Correlation, regression and Rank correlation. Test of significance: Large sample test for single proportion, difference of proportions, single mean, difference of means, and difference of standard deviations.

UNIT-V: Test for single mean, difference of means and correlation coefficients, test for ratio of variances, Chi-square test for goodness of fit and independence of attributes.

Suggested Readings:
1. R.K. Jain & Iyengar, "Advanced Engineering Mathematics", Narosa Publications.
2. B.S. Grewal, "Higher Engineering Mathematics", Khanna Publishers, 2000.
3. P. Sivaramakrishna Das & C.Vijaya Kumar, "Engineering Mathematics", Pearson India Education Services Pvt. Ltd.
4. N.P. Bali & M. Goyal, "A Text Book of Engineering Mathematics", Laxmi Publications, 2010.
5. S.C. Gupta & V.K.Kapoor, "Fundamentals of Mathematical Statistics" , S.Chand Publications.
6. P. G. Hoel, S. C. Port & C. J. Stone, "Introduction to Probability Theory", Universal Book Stall, 2003.
7. W. Feller, "An Introduction to Probability Theory and its Applications", Vol.1, Wiley, 1968.

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