PROGRAM AND COURSE OUTCOMES

DEPARTMENT OF STATISTICS

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MSC STATISTICS

Program Outcomes

- To inculcate and develop aptitude to study theory of Statistics and apply statistical tools in real life problems.
- To train students to handle theory, large data sets and carry out data analysis using software and programming language.
- To teach a wide range of statistical skills, including problem-solving, project work and presentation so as enable students to take prominent roles in a wide spectrum of employment and research.

Course Outcomes

Semester	Course	Course outcome
1	Measure Theory and integration	Students acquire basic knowledge of measure theory needed to understand probability theory, statistics and functional analysis.
	Analytical tools for statistics -1	The skills and knowledge gained has intrinsic mathematics, which also leads to proficiency in analytical reasoning. This can be utilised in modelling and solving real life problems.
	Analytical tools for statistics 2	The skills and knowledge gained has intrinsic mathematics, which also leads to proficiency in analytical reasoning. This can be utilised in modelling and solving real life problems
	Regression and LPP	Learn how to apply linear regression models in practice: identify situation where linear regression is appropriate; build and fit linear regression models with software SPSS; interpret estimates and diagnostic statistics; produce exploratory graphs
	Distribution theory	Students learn various distributions and their fitting and modelling in real life situations

2	Estimation Theory	By the end of this Programme, the students will be able to: • Understand problem of statistical inference, problem of point estimation • Properties of point estimator such Consistency, Unbiasedness, Sufficiency • Obtain minimum variance unbiased estimator
	Sampling Theory	Survey sampling methods are familiarised by students by doing this course
	Probability Theory	This paper makes student confident to build a base for higher statistical theory
	Design and analysis of experiments	Describe some of the factors affecting reproducibility and external validity and then List the different types of formal experimental designs (e.g. completely randomised, randomised block, repeated measures, Latin square and factorial experimental designs).
	Statistical computing -1	
3	Stochastic Processes	The students are expected to be able to: Carry out derivations involving conditional probability distributions and conditional expectations.
	Testing of statistical hypothesis	Understand hypothesis testing as making an argument; Significance level as the probability of rejecting a true null hypothesis; Understand that p-value is the probability of obtaining the data if the null hypothesis were true.
	Statistical computing 2	Practical problem solving using R & MS EXCEL
4	Multivariate analysis	A distinguished paper that is excellent with regard to the following aspects – theoretical depth, practical relevance, analytical ability and independent thought
	Project dissertation & viva	Project work consists of either theory development or application of theory to real life data