

Subject Code : 2CS1010404	Subject Title: STATISTICAL COMPUTING
Pre-requisite :	-NONE-

Course Objective:

The objective of this course is to basic knowledge of statistical concepts to like measurements of location and dispersion, probability, probability distributions, sampling, estimation, hypothesis testing, regression, and correlation analysis, multiple regression and business/economic forecasting. This course intended to learn the theory of optimization methods and algorithms developed for solving various types of optimization problems

Teaching Scheme(Hours per week)				Evaluation Scheme(Marks)								
Lecture	Tutorial	Practical	Credit	Theory				Practical				Total
				University Assessment		Continuous Assessment		University Assessment		Continuous Assessment		
				Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	
3	1	-	4	28	70	12	30	-	-	-	-	100

Subject Contents			
Sr. No	Topics	Total Hours	Weight (%)
1	FREQUENCY DISTRIBUTION Class interval, Types of Classes, Class frequency, Class mark, Class Boundaries, Width of a class, Relative frequency, Percentage frequency, Cumulative frequency. MEASURES OF CENTRAL TENDENCY Introduction, Arithmetic Mean for raw data, Discrete frequency distribution, Continuous frequency distribution, Properties of A.M., Merits & Demerits of A.M.- Median for raw data, Discrete frequency distribution, Continuous frequency distribution , Merits and demerits of Median, Mode for raw data , Discrete frequency distribution, Continuous frequency distribution , Merits & demerits of mode	12	25
2	MEASURES OF DISPERSION Introduction, Range, coefficient of range, Quartiles, Quartiles deviations, coefficient of quartile deviations, Mean deviation and coefficient of mean deviation, S.D and variance for all types of frequency distribution, Coefficient of variation	9	15
3	CORRELATION Definition of Correlation, Types of Correlation, Scatter Diagram Method, Karl Person's , Correlation Coefficients, Rank Correlation Coefficients, Correlation Coefficients for Bi-variant frequency distribution, Probable error for Correlation Coefficients	9	20
4	REGRESSION Definition of Regression, Regression lines, Regression Coefficients, Properties of regression Coefficients, Fitting of regression lines and estimation for Bi-variant frequency distribution	9	20
5	Sampling Methods: Meaning of Population and sample, Difference between Population survey V/S Sample Survey , Characteristics of ideal sample , Sampling Methods: Procedure , Merits , Demerits and Calculation - Simple random sampling, Stratified random Sampling, Multi Sampling (Theory Only) , Cluster Sampling (Theory Only)	9	20

Course Outcomes:

At the end of this course, the students would be able to :

- Analyze the statistical data.
- Calculate and apply measures of location and measures of dispersion grouped and ungrouped data cases.
- Apply discrete and continuous probability distributions to various business problems
- Handle, solve and analyze problems using linear programming and other mathematical programming algorithms.
- Learn different techniques to solve Non- Linear Programming Problems.
- Deal with real world problems of Network analysis, Project Management for their optimal solutions.

List of References:

1. Statistical Methods, S.P. Gupta, Published by New India Publishing Agency
2. Business Statistics, R.S. Bhardwarj, Publishing Made Easy · Alexa
3. Fundamental of Statistics, S.C. Gupta, Publisher: Himalaya Publishing
4. Operation Research, Sharma S.D., Kedar Nath & Co. Meerut, 1988-89.