1. Course Out comes

S.No	Course Name	Course Outcomes
1	Descriptive Statistics & Probability	Students would be able to learn about primary secondary data, Measures of central tendency, measures of dispersion, importance of moments, Skewness and kurtosis
		Students would be able to learn the basic concepts of probability, definitions of probability, addition and multiplication theorems
		Students would be able to learn about different types of random variables, probability mass function and probability density function and distribution function and its properties
		Students would be able to learn about the bivariate random variables, Joint, marginal and conditional distributions and independence of random variables
2	Mathematical Expectations & Probability distributions	Students would be able to learn about Mathematical Expectation and its properties, Addition and multiplication theorems, Generating functions, Chebyshev's and Cauchy Schwartz inequalities and Central limit theorem
		Students would be able to learn about discrete distributions like Bernoulli, Binomial, Poisson, Negative binomial, Geometric and Hypergeometric and their properties
		Students would be able to learn about continuous distributions like Rectangular, Normal, Exponential, Gamma Beta and Cauchy and their properties and applications.
		Students would be able to solve the practical examples of both continuous and discrete in their real life and their reproductive property.
3	Statistical methods	Students would be able to learn about the topics Correlation and Regression and their properties and the relationship between two variables and interpretation
		Students would be able to know the principle of least squares, fitting of straight-line, second degree parabola, power curves and the theory of attributes, and its various measures.
		Students would be able to know the concepts of population, parameter, sampling

		distribution and standard error, Exact sampling distributions like chi-square, t and F distribution their properties and applications.
		Students would be able to learn about the theory of estimation, Criteria of good estimator, methods of estimation like Maximum likelihood method, method of moments and its properties and to learn about confidence intervals
4	Statistical Inference	Students would be able to learn about the testing of hypothesis, null and alternative hypothesis, two types of errors, one tail and two tailed tests and problem solving skills.
		Students would be able to learn about Large sample tests like proportions, standard deviations and correlation coefficients.
		Students would be able to learn about small sample tests like chi-square, t and F, test for goodness of fit and goodness of fit for independence of attributes.
		Students would be able to learn about Non parametric tests, their advantages and disadvantages, One sample and two sample tests
5	Sampling Techniques & Design of Experiments	Students would be able to know about the sampling methods and different types of sampling methods, and to estimate their population mean, population total and their variances and to also to study about their advantages and disadvantages.
		Students must be able to know about Simple random sampling, Stratified random sampling, systematic sampling techniques, their advantages and disadvantages
		Students would be able to learn about Completely Randomised design, Randomised block design, Latin square design their analysis and comparison of the efficiencies of these designs
		Students would be able to know about Analysis of Variance technique and design of experiments and principles of experimentation
6	Quality & Reliability	Students would be able to learn about Importance of statistical quality control in industry, Construction of control charts for variables and attributes and to draw conclusions and interpret the result.
		Students would be able to learn about acceptance sampling plans-single and double sampling plans of attributes

		Students would be able to know the concept of reliability and the role of Exponential distribution and its memory less property.
		Students would be able to estimate reliability function and to understand the concept of system reliability.
7	Applied Statistics	Students would be able to learn about Time series and its components, Determination of trend by least squares, moving averages methods and to determine seasonal indices by Ratio to moving average, ratio to trend and link relative methods.
		Students would be able to know the functions and organization of CSO and NSSO, National income and its computation, difficulties in estimation of national income.
		Students would be able to know about the definition, uses of vital statistics and its sources, Various mortality and fertility rates, Life tables-its construction and uses.
		Students must be able to know about different types of Reproduction rates and abridged life tables.
8	Optimization Techniques	Students must be able to know the origin and development of Operations Research, its scope and phases, advantages and disadvantages of operations research
		Students must be able to know about Linear Programming problem, its formulation ,solution of LPP by Graphical method, exceptional cases in graphical method.
		Students must be able to understand the Simplex algorithm and solvation of problems,, Artificial Variable Technique, and Concept of degeneracy
		Students must be able to understand the concept of duality, primal dual relationship and dual simplex method.
9	Operations Research	Students must be able to know about the definition of operations research, phases and models, to know about Linear Programming problem, its formulation and solvation of LPP by Graphical method
		Students must be able to understand the basic concepts of game theory, finding solutions for 2x2 and 2x n games.
		Students would be able to learn about the Definition of Transportation problem, obtaining feasible solution by North-west, Matrix minimum and Vogel's approximation methods, Obtaining Optimal solution through MODI method and stepping stone methods and the