



**SMT N P S GOVT COLLEGE (W),
CHITTOOR
DEPARTMENT OF STATISTICS**



B.Sc.,

(Revised on 2021-2022)

COURSE OUTCOMES

LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER – I

**STATISTICS -I - DESCRIPTIVE STATISTICS AND
PROBABILITY - 1-1-122-R20**

By the end of the course during the first semester with 5 hours a week and 4 credits a semester students will able to

- Build the basis for promoting theoretical and application aspects of statistics.
- Underline the statistics as a science of decision making in the real life problems with the description of uncertainty.
- Emphasize the relevance of statistical tools and techniques of analysis in the study of inter-disciplinary sciences.
- Develop skills in handling complex problems in data analysis and research design.
- Prepare students for future courses having quantitative components.

DEPARTMENT OF STATISTICS

LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER –I

**PRACTICALS - DESCRIPTIVE STATISTICS AND PROBABILITY
- 1-1-122-R20p**

- Knowledge of Statistics and its scope and importance in various areas such as Medical, Engineering, Agricultural and Social Sciences etc.
- Knowledge of various types of data, their organization and evaluation of summary measures such as measures of central tendency and dispersion etc.
- Insights into preliminary exploration of different types of data.
- Ability to distinguish between random and non-random experiments.
- Knowledge related to concept of discrete and continuous random variables and their probability distributions including expectation and moment.

DEPARTMENT OF STATISTICS

LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER –II

STATISTICS (WM) - II -1-2-122-R20

After successful completion of this course, the student will be able to;

- Build the basis for promoting theoretical and application aspects of statistics.
- Underline the statistics as a science of decision making in the real life problems with the description of uncertainty.
- Emphasize the relevance of statistical tools and techniques of analysis in the study of inter-disciplinary sciences.
- Acquaint students with various statistical methods and their applications in different fields.
- Develop skills in handling complex problems in data analysis and research design.

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LEARNING OBJECTIVES OR COURSE OUTCOMES
STATISTICS - SEMESTER –II
STATISTICS (WM) PRACTICALS - II - 1-2-122-R20P

After successful completion of this course, the student will be able to

- Ability to distinguish between random and non-random experiments.
- Knowledge to conceptualize the probabilities of events including frequent and axiomatic approach. Simultaneously, they will learn the notion of conditional probability including the concept of Bayes' Theorem.
- Knowledge related to concept of discrete and continuous random variables and their probability distributions including expectation and moments.
- Knowledge of important discrete and continuous distributions such as Binomial, Poisson, Geometric, Negative Binomial and Hyper-geometric, normal, uniform, exponential, beta and gamma distribution.

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LEARNING OBJECTIVES OR COURSE OUTCOMES
STATISTICS - SEMESTER –III
STATISTICS (WM) - III 1-3-122

After successful completion of this course, the student will be able to;

- Calculate and interpret the correlation between two variables.
- Determine the simple linear regression equation for a set of data.
- Determine the simple linear regression equation for a set of data.
- Perceives the association between the attributes.
- Discuss the basic concepts of exact sampling distribution and their tests.

DEPARTMENT OF STATISTICS

LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER –III

STATISTICS (WM - III 1-3-122P)

- Calculate and interpret the correlation between two variables.
- Determine the simple linear regression equation for a set of data.
- Apply the principles of linear regression and correlation, including least square method.
- Perceives the association between the attributes.
- Discuss the basic concepts of exact sampling distribution and their tests.

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LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER –IV

STATISTICS (WM) - IV 1-4-122

After successful completion of this course, the student will be able to;

- Demonstrate the theory of maximum likelihood estimation and properties of estimators.
- Discuss the basic concepts of testing of hypothesis.
- Illustrates to analyze the data by using large sample tests.
- Demonstrate to explore the data by using small sample tests.
- Determine the data by using non-parametric tests i. e., which does not depend on parameters.

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LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER –VI

STATISTICS (WM) PRACTICALS – IV

- Demonstrate the theory of maximum likelihood estimation and properties of estimators.
- Discuss the basic concepts of testing of hypothesis.
- Illustrates to analyze the data by using large sample tests.
- Demonstrate to explore the data by using small sample tests.
- Determine the data by using non-parametric tests i.e., which does not depend on parameters.

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LEARNING OBJECTIVES OR COURSE OUTCOMES
STATISTICS - SEMESTER –V
STATISTICS (WM) -V -1-5-145

After successful completion of this course, the student will be able to;

- Understand the concepts of quality control, chance and assignable causes.
- Acknowledge the setting of mean chart limits, range chart limits using mean and range charts.
- Recognize the concepts of acceptance sampling plan, producer's & consumer's risk.
- Perceive the concepts of Single sampling plan, double sampling plan for attributes.
- Discuss the concepts of Reliability.

DEPARTMENT OF STATISTICS
LEARNING OBJECTIVES OR COURSE OUTCOMES
STATISTICS - SEMESTER –V
STATISTICS (WM) PRACTICALS – V 1-5-145P

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- Understand the concepts of quality control, chance and assignable causes.
- Acknowledge the setting of mean chart limits, range chart limits using mean and range charts.
- Recognize the concepts of acceptance sampling plan, producer's & consumer's risk.
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LEARNING OBJECTIVES OR COURSE OUTCOMES
STATISTICS - SEMESTER –V
STATISTICS (WM)-VI - 1-5-146

After successful completion of this course, the student will be able to;

- Demonstrates the concepts of time series and its applications in different area.
- Understand the concept of seasonal indices.
- Explain the relationships between the price of a product and quantity.
- Acquire knowledge on vital statistics.
- Understand Present official statistics system in India.

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LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER –V

STATISTICS (WM) PRACTICALS - VI - 1-5-146P

- Demonstrates the concepts of time series and its applications in different area.
- Understand the concept of seasonal indices.
- Explain the relationships between the price of a product and quantity.
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LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER –VI

STATISTICS (WM) - VII -1-6-122

- Recognize the Sequencing is concerned with determining the optimal sequence in which a set of given jobs may be performed.
- Develop Game theory is a theoretical framework to conceive social situations among competing players and produce optimal decision-making of independent and competing actors in a strategic setting.
- Understand the Queuing analysis is to predict the system performance such as how many customers get processed per time step, the average delay a customer endures before being served, and the size of the queue or waiting room required.
- Understand on Network Analysis is a successful technique frequently used to plan, monitor and control the projects involving thousands of activities.
- Recognize that Simulation can be used to predict the performance of an existing or planned system and to compare alternative solutions for a particular design problem.

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LEARNING OBJECTIVES OR COURSE OUTCOMES

STATISTICS - SEMESTER –VI

STATISTICS (WM) Practical's - VII -1-6-122P

- Apply numerical methods to find the solution of algebraic equations.
- Apply various interpolation methods and finite difference concepts.
- Apply numerical differentiation and integration wherever routine methods are not applicable.
- Work numerically on the ordinary differential equation using different methods.