

**DEPARTMENT OF STATISTICS**  
**SEMESTER-I**  
**Descriptive Statistics and Probability**

**Course Code: STAT 101**

**Course Outcome:**

After completing this course, the students should have developed a clear understanding about :

- The Concepts of statistical population and sample, variables and attributes.
- Tabular and graphical representation of data based on variables.
- Measures of central tendency, Dispersion, Skewness and Kurtosis.
- Moments and their use in studying various characteristics of data.
- Different approaches to the theory of probability.
- Important theorems on probability and their use in solving problem.
- The concept of random variables and distribution function. Probability mass and density functions.

To understand and interpret the expected value and variance of a random variable and various properties of expectation and variance.

## **SEMESTER-II**

### **PROBABILITY DISTRIBUTIONS**

**Course Code : STAT201**

**Course Outcome:**

- The concept of discrete and continuous probability distributions along with their properties.
- Fostering understanding through real-world statistical applications.
- P.m.f and p.d.f of various discrete and continuous probability distributions
- Application of probability distributions to a variety of problems in diversified fields.

## **SEMESTER-III**

### **Statistical Methods and Theory of estimation**

**Course Code : STAT301**

#### **Course Outcome:**

- Learn about the properties of correlation and regression.
- Use of Regression analysis for estimation and prediction purpose.
- Understands and discuss various characteristics of Estimators like Consistency, Unbiasedness, Efficiency and Sufficiency along with their importance in estimation theory.
- To understand the various methods of estimation.

## **SEMESTER-IV**

### **Paper IV: Statistical Inference**

**Course Code : STAT401**

**Course Outcome:**

- To understand the concept of sampling distributions and their applications in statistical inference.
- To understand the process of hypothesis testing and its significance
- Importance of Standard Error and to draw conclusions using p-value

## **SEMESTER-V**

### **Sampling Theory, Time series and Demand Analysis**

**Course Code : STAT501**

**Course Outcome:**

- Identify and describe common methods of sampling
- To understand the factors to be considered while selecting a sample.
- Recognize the forecasting methods available for time series with specific components.
- Interpret and use a range of index numbers commonly used in the business sector
- To Perform calculations involving simple, composite and weighted index numbers

## **SEMESTER-VI**

### **Statistical Quality Control , Reliability & Index numbers**

**Course Code : STAT601**

#### **Course Outcome:**

- Understand the role of statistical tools in quality improvement and how a control chart is used to detect assignable causes.
- Construct and interpret control charts for variables and attributes.
- Interpret and use a range of index numbers commonly used in the business sector
- To Perform calculations involving simple, composite and weighted index numbers

## **SEMESTER-VI**

### **Design of Experiments, Vital statistics, Official Statistics and Business Forecasting**

**Course Code : STAT701**

#### **Course Outcome:**

- Understand the potential practical problems in its implementation.
- Construct optimal or good designs for a range of practical experiments.
- Appreciate the advantages and disadvantages of a design for a particular experiment.
- Describe how the analysis of the data from the experiment should be carried out

## **SEMESTER-VI**

### **Operations Research**

**Course Code : STAT801**

**Course Outcome:**

- Formulate and solve problems as graphs.
- Develop linear programming (LPP) models, transportation, transshipment, assignment and sequencing problems.
- Solve the problems using special solution algorithms.