

# DEPARTMENT OF STATISTICS

## *Program objectives*

- The main objective of statistics is to study the various facts and problems in the research for field and to evaluate the causes and results of the changes occur in them.
- Statistics is the science of gaining knowledge from data.
- You can collect data in the correct manner perform detailed analysis and effectively present the results of you have statistical knowledge.
- To organise and summarise the information.
- To Analyse and draw conclusions from the data.
- To assess the conclusions strength and evaluate their uncertainty.

# **COURSE OBJECTIVES**

## **1. Semester I (DESCRIPTIVE STATISTICS & PROBABILITY)**

- To Interpret the utilization of mean values to describe group results.
- To apply measure of standard deviation in describing the properties of variability of group scores.
- To calculate mean values.
- To calculate standard deviations values.

## **2. Semester II ( PROBABILITY DISTRIBUTIONS)**

- Distinguish between discrete and continuous random variables.
- Compute probability, cumulative probabilities, means, and variances for discrete random variables.
- Identify binomial random variables and their characteristics.

- Calculate probability of binomial random variables.
- Describe the properties of the normal distribution.

### 3. **Semester III (STATISTICAL METHODS)**

- Students should be familiar with the terminology and special notation of Statistical analysis.  
The terminology

The terminology consists of the following

#### **Statistical terms**

- Population
- Sample
- Parameter
- Statistic

#### **Measurement terms**

- Operational definition
- Nominal
- Ordinal

- Research terms
  - Research terms
- Correlation method
- Experimental method
- Independent variable
- Dependent variable

## 4. SEMESTER IV ( STATISTICAL INFERENCE)

- The purpose of statistical inference is to estimate the sample to sample variation or uncertainty.
- Explain the concepts of estimation, point estimation, confidence level, and confidence interval.
- Calculate and interpret confidence intervals for means.

## **5. Semester V (APPLIED STATISTICS I)**

- Understand the fundamentals of probability theory.
- Understand statistical and inferential reasoning
- Increase the ratio of output to input
- Reduced the variation in the output of the process.

## **6. SEMESTER VI (APPLIED STATISTICS II)**

- Anova test is a way to find out if survey or experiment results are significant.
- Each group sample is drawn from a normally distributed population.
- All population's have a common variance.

- Explain the important uses of an index number.