COURSE OUTCOMES - DEPARTMENT OF STATISTICS

- Organise, manage and present data. Analyse statistical data graphically using frequency distributions and cumulative frequency distributions. Analyse statistical data using measures of central tendency, dispersion and location.
- Use the basic probability rules, including additive and multiplicative laws, using the terms, independent and mutually exclusive events.
- Translate real-world problems into probability models. Derive the probability density function of transformation of random variables. Calculate probabilities, and derive the marginal and conditional distributions of bivariate random variables.
- Analyse Statistical data using MS-Excel

- Use discrete and continuous probability distributions, including requirements, mean and variance, and make decisions. Define binomial outcomes and compute probability of getting X successes in N trials.
- Identify the characteristics of different discrete and continuous distributions. Identify the type of statistical situation to which different distributions can be applied.
- Use Poisson, exponential distributions to solve statistical problems. Use the normal probability distribution including standard normal curve calculations of appropriate areas.
- Calculate and interpret the correlation between two variables. Calculate the simple linear regression equation for a set of data.
- Employ the principles of linear regression and correlation, including least square method, predicting a particular value of dependent variable for a given value of independent variable and significance of the correlation coefficient.
- Know the association between the attributes. Know the construction of point and interval estimators.Evaluate the properties of estimators.Demonstrate understanding of the theory of maximum likelihood estimation.
- Define null hypothesis, alternative hypothesis, level of significance, test statistic, p value, and statistical significance. Identify the four steps of hypothesis testing. Apply the central limit theorem to describe inferences.
- State and define the inference from small samples including differences between two population means, population variances.Analyze data including Chi-square test for goodness of fit and independence of attributes.
- Demonstrate understanding of the concepts of time series and its applications in different areas. Determine and apply appropriate models to real time series data and interpret the outcomes of analysis.
- Appropriately interpret results of analysis of variance tests. Design experiments, carry them out, and analyse the data they yield.Acquire knowledge on vital statistics, Index numbers and calculate indices from given data.