# CHIRALA ENGINEERING COLLEGE :: CHIRALA

## IIB.Tech. -II SEM CSE

## PROBABILITY AND STATISTICS SYLLABUS

| II YEAR – II SEM | THEORY | PRACTICAL | CREDITS |
|---|---|---|---|
| | 3+1 | 0 | 3 |

**UNIT-I RANDOM VARIABLES AND DISTRIBUTIONS:**
Introduction-Random variables – Distribution function – Discrete distributions ( Review of Binomial and Poisson distributions) – Continuous distributions: Normal, Normal approximation to Binomial distribution, Gamma and Weibull distributions.

**UNIT – II Moments and Generating functions:**
Introduction – Mathematical expectation and properties – Moment generating function – Moments of standard distributions (Binomial, Poisson and Normal distributions) – Properties.

**UNIT – III Sampling Theory:**
Introduction – Population and samples – Sampling distribution of mean for large and small samples (with known and unknown variance) – Proportion sums and differences of means – Sampling distribution of variance – Point and interval estimators for means and proportions

**UNIT – IV Tests of Hypothesis:**
Introduction – Type I and Type II errors – Maximum error – One tail, two-tail tests – Tests concerning one mean and proportion, two means – Proportions and their differences using Z-test, Students t-test, F-test and chi-Square test – ANOVA for one-way and two-way classified data.

**UNIT- V Curve fitting and Correlation:**
Introduction – Fitting a straight line – Second degree curve – exponential curve – Power curve by method of least squares. Simple Correlation and Regression – Rank correlation – Multiple regression.

**UNIT-IV Statistical Quality Control Methods:**
Introduction – Methods for preparing control charts – Problems using x-bar, p, R charts and attribute charts.

**BOOKS:**


1. Probability and Statistics for Engineers: Miller and John E. Freund, Prentice Hall of India.
2. Probability and Statistics for Engineers and Scientists: Ronald E. Walpole, Sharon L. Mayers and Keying Ye: Pearson Probability and Statistics and Random Processes, Murugesan, Anuradha Publishers, Chenai: