|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | 13SH2103 | - | PROBABILITY AND STATISTICS | | | | | | | | |
|  |  | |  | | | | |
| Hours / Week | : | 4 | |  | Sessional Marks | : | 40 |
| Credits | : | 4 | |  | End Examination Marks | : | 60 |

|  |
| --- |
| **UNIT – I** |
| **Introduction To Probability**: Sample space and events - Axioms of Probability, Some Elementary Theorems, Conditional Probability- Bayes theorem – Discrete and Continuous Probability distributions and distribution functions. |
|  |
| **UNIT – II** |
| **Probability Distribution**: Binomial – Poisson and Normal distributions, the normal approximation to the binomial distribution. The expected value of a random variable, Variance of a random variable. |
|  |
| **UNIT – III** |
| **Sampling Distributions**: Introduction, population and samples, Sampling distribution, The sampling distribution of the Mean (σ known), sampling distribution of proportions, Sampling distributions of differences and sums – Sampling distribution of mean (σ unknown), Point Estimation- Inferences concerning methods, Interval Estimation- Confidence interval for the mean (σ known), confidence interval for µ(σ unknown). Bayesian Estimation. |
|  |
| **UNIT – IV** |
| **Test Of Hypothesis**: Test of hypothesis & test of significance -Hypothesis concerning one mean (with known variance σ^r ) and two means – type – I and type – II errors. One tail, two tail tests - large sample, Student’s t – test, F – test Chi-squared(χ2) – test. |
|  |
| **UNIT – V** |
| **Curve Fitting**: introduction, the method of least squares, linear and non–linear equations .correlation coefficient (ρ). Lines of regression, rank correlation coefficient (ρ) (or) spearman’s rank-correlation coefficient for grouped data. |
|  |
|  |
| TEXT BOOKS |
| 1. Probability and for engineers- G.S.S.Bhishma Rao. 2. Probability and statistics- T.K.V Nengar, B.Krishna Gandhi, S.Ranga Natham 3. Probability and statistics for engineers and scientists- Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers. |
|  |
|  |
|  |