

Bhoj Reddy Engineering College for Women
Faculty of Mathematics
Lesson plan of faculty member for the academic year 2020–21

Class: II BTech

Branch-Section: IT-A

Semester: I

Subject: Computer Oriented Statistical Methods

Lectures per week: 3+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
UNIT – I: Probability, Random Variables and Probability Distributions		
1	Introduction of Probability, Sample Space, Events, Counting Sample Points	3 September 2020
2	Probability of an Event, Additive Rule, Conditional Probability, Independent Events and the Product Rule	4 September 2020
3	Tutorial: Bayes' Rule, Examples	5 September 2020
4	Problems on Bayes' Rule	7 September 2020
5	Concept of a Random Variable, Probability Mass function and Cumulative Distribution function of a Discrete Random Variable	10 September 2020
6	Problems on Mass function, Cumulative Distribution function	11 September 2020
7	Tutorial: Probability Density function and Cumulative Distribution function of a Continuous Random Variable	12 September 2020
8	Problems on Random Variables	14 September 2020
9	Problems on Random Variables	17 September 2020
UNIT – II: Mathematical Expectation, Discrete Probability Distributions		
10	Mean of a Random Variable, Variance and Covariance of Random Variables	18 September 2020
11	Tutorial: Means and Variances of Linear Combinations of Random Variables	19 September 2020
12	Chebyshev's Theorem	21 September 2020
13	Problems on Mathematical expectation	24 September 2020
14	Binomial Distribution, Mean and Variance of Binomial Distribution	25 September 2020
15	Tutorial: Geometric Distribution, Mean and Variance of Geometric Distribution	26 September 2020
16	Problems on Binomial Distribution and Geometric Distribution	28 September 2020
17	Problems on Binomial Distribution and Geometric Distribution	1 October 2020
18	Tutorial: Poisson Distribution, Mean and Variance of Poisson Distribution.	3 October 2020
19	Problems on Poisson Distribution	5 October 2020
UNIT – III: Continuous Probability Distributions, Fundamental Sampling Distributions		
20	Continuous Uniform Distribution, Normal Distribution	8 October 2020
21	Mean and Variance of Normal Distribution	9 October 2020
22	Tutorial: Areas under the Normal Curve	10 October 2020
23	Applications of the Normal Distribution and examples	12 October 2020
24	Normal Approximation to the Binomial	15 October 2020
25	Gamma and Exponential Distributions	16 October 2020
26	Problems on Normal Distribution	26 October 2020
27	Random Sampling, Statistics, Sampling Distributions	29 October 2020
28	Tutorial: Problems on Sampling	31 October 2020
29	Sampling Distribution of Means and the Central Limit Theorem	9 November 2020
30	Problems on Sampling Distribution of Means	12 November 2020
31	Sampling Distribution of Variance, χ^2 -Distribution,	13 November 2020
32	F-Distribution and its problems	16 November 2020

33	t-Distribution and Properties	19 November 2020
34	Problems on t-Distribution	20 November 2020
UNIT – IV: Estimation & Tests of Hypothesis, Statistical Hypothesis		
35	Tutorial: Introduction of Statistical Inference	21 November 2020
36	Classical Methods of Estimation, Standard Error of a Point Estimate, Interval Estimate	23 November 2020
37	Estimating the Mean, Variance, Proportion Difference between Two Means and Two Proportions, Maximum Likelihood Estimation	26 November 2020
38	Problems on Estimation	27 November 2020
39	Tutorial: Introduction of Null Hypothesis, Alternative Hypothesis, Type I error, Type II error	28 November 2020
40	Level of Significance, Critical region, Accepted Region, One Tailed and Two Tailed Tests	3 December 2020
41	Tests Concerning Single Mean and Problems	4 December 2020
42	Tutorial: Problems on Tests concerning Single Mean	5 December 2020
43	Tests Concerning Difference between Two Means and Problems	7 December 2020
44	Tests Concerning Single Proportion and Problems	10 December 2020
45	Tests Concerning Difference between Two Proportions and Problems	11 December 2020
46	Tutorial: Problems on Tests of Hypothesis	12 December 2020
UNIT – V: Stochastic Processes and Markov Chains		
47	Introduction to Stochastic Processes-Markov Process	14 December 2020
48	Transition Probability, Transition Probability Matrix	17 December 2020
49	First Order and Higher Order Markov Process	18 December 2020
50	Tutorial: n-step transition probabilities and problems	19 December 2020
51	Problems on Transition Probability Matrix	21 December 2020
52	Markov Chain, Steady state condition	24 December 2020
53	Problems on Markov Chain, Steady state condition	28 December 2020
54	Markov analysis and Problems	31 December 2020
55	Tutorial: Problems on Markov analysis	2 January 2021

Text Books :

1. “Fundamentals of Mathematical Statistics” by S C Gupta and V K Kapoor, Khanna Publications
2. “Higher Engineering Mathematics” by B S Grewal
3. “Engineering Mathematics” by B V Ramana
4. “Probability And Statistics” by TKV Iyengar and B .Krishna Gandhi

Name and signature of the faculty: T Suresh

Name and signature of the Head of Faculty: Mrs K Padma