

Bhoj Reddy Engineering College for Women: Hyderabad
 Department of Basic Sciences
 Lesson plan of faculty member for the academic year 2016–17

Class: II B Tech

Branch-Section: CSE-IIA

Semester: I

Subject: **Probability and Statistics**

Lectures per week: 4+1 (Tutorial)

| Lecture Number | Topics to be covered | Date (s) |
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| UNIT-1: Single Random Variables and Probability Distributions. | | |
| 1 | Random Variables-Discrete and Continuous | 13 June 2016 |
| 2 | Mass function/Density function of a Probability distribution and its problems | 14 June 2016 |
| 3 | Mathematical expectation, moment about origin. Central moments Moment generating function of P.D | 15 June 2016 |
| 4 | Tutorial (G3, G2, G1) – Problems on Moment generating function of P.D | 13,15,17 June 2016 |
| 5 | Binomial Distribution & Mean and Variance of B.D | 18 June 2016 |
| 6 | Problems on B.D | 20 June 2016 |
| 7 | Poisson Distribution, Mean and Variance of P.D | 21 June 2016 |
| 8 | Problems on P.D | 22 June 2016 |
| 9 | Tutorial (G3, G2, G1) - Problems on B.D&P.D | 20,22,24 June 2016 |
| 10 | Normal Distribution, Mean and Variance of N.D | 25 June 2016 |
| 11 | Problems on N.D | 27 June 2016 |
| 12 | Problems on N.D | 28 June 2016 |
| 13 | Moment generating functions of B.D ,P.D and N.D. | 29 June 2016 |
| 14 | Tutorial (G3, G2, G1) – Revision on Unit-I | 27,29 June,1 July 2016 |
| UNIT-II: Multiple Random Variables ,Correlation and Regression | | |
| 15 | Joint Probability Distributions , Joint Probability Mass/Density function | 2 July 2016 |
| 16 | Problems of J.P.D, J.P.M/J.P.D.functions . | 4 July 2016 |
| 17 | Marginal probability Mass/Density functions, covariance of two random variables and its problems. | 5 July 2016 |
| 18 | Tutorial (G3, G1) - Problems | 4,8 July 2016 |
| 19 | Correlation, coefficient of correlation | 9 July 2016 |
| 20 | Problems on correlation, the rank correlation | 11 July 2016 |
| 21 | Regression, regression coefficient | 12 July 2016 |
| 22 | Problems on regression | 13 July 2016 |
| 23 | Tutorial (G3, G2, G1) -Problems | 11,13,15 July 2016 |
| 24 | The lines of regression and multiple correlation and regression and its problems | 16 July 2016 |
| 25 | Revision on Unit-II | 18 July 2016 |
| Unit-III :Sampling Distributions and Testing of Hypothesis | | |
| 26 | Sampling: Definitions of population, sampling ,statistic and parameter and types of sampling | 19 July 2016 |
| 27 | Expected values of sample mean and variance ,sampling distribution, standard error and its problems | 20 July 2016 |
| 28 | Tutorial (G3, G2, G1) -Problems | 18, 20, 22 July 2016 |

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| 29 | Sampling distribution of means and S.D. of variance and its problems | 23 July 2016 |
| 30 | Parameter Estimations: likelihood estimate, interval estimations and problems. | 25 July 2016 |
| 31 | Testing Hypothesis: Null hypothesis, alternative hypothesis and type-I and type-II errors, critical regions and its problems | 26 July 2016 |
| 32 | Confidence interval, level of significance and problems and one sided test, two sided test | 27 July 2016 |
| 33 | Tutorial (G3, G2, G1) -Problems | 25, 27, 29 July 2016 |
| 34 | Large Sample Tests: (i) Test of equality of means of two samples, equality of sample mean and population mean and problems | 30 July 2016 |
| 35 | (ii) Tests of significance of difference between sample S.D and population S.D and its problems | 2 August 2016 |
| 36 | (iii) Tests of significance of difference between sample proportion and population proportion and difference between two sample proportions and its problems | 3 August 2016 |
| 37 | Tutorial (G2, G1) -Problems | 3,5 August 2016 |
| 38 | Revision | 6 August 2016 |
| 39 | Small Sample Tests: Student t-distribution, its properties and its problems | 16 August 2016 |
| 40 | Tests of significance of difference between sample mean and population mean and its problems | 17 August 2016 |
| 41 | Tutorial (G2, G1) -Problems | 17,19 August 2016 |
| 42 | Difference between means of two small samples and its problems | 20 August 2016 |
| 43 | Snedecor's F- distribution and it's properties and its problems | 22 August 2016 |
| 44 | Test of equality of two population variances, Chi-square distribution and its properties | 23 August 2016 |
| 45 | Chi-square test of goodness of fit and its problems | 24 August 2016 |
| 46 | Tutorial (G3, G2, G1) -Problems | 22,24,26 August 2016 |
| 47 | Revision on Unit-III | 27 August 2016 |
| Unit-IV Queuing Theory | | |
| 48 | Structure of queuing system | 29 August 2016 |
| 49 | (.,G2,G1): Operating characteristics of queuing system and its problem | 30 August 2016 |
| 50 | Transient and steady states ,terminology of queuing systems | 31 August 2016 |
| 51 | Tutorial (G3, G2, G1) -Problems | 29,31 August,2 September 2016 |
| 52 | Arrival and service processes and problems | 3 September 2016 |
| 53 | Pure Birth-Death process and its problems | 6 September 2016 |
| 54 | Deterministic queuing models-M/M/I, model of infinite queue | 7 September 2016 |
| 55 | Tutorial (G2, G1) - Problems | 7, 9 September 2016 |
| 56 | Problems on M/M/I model of infinite queue | 10 September 2016 |
| 57 | Properties of M/M/I model, examples | 13 September 2016 |
| 58 | M/M/I model of finite queue | 14 September 2016 |
| 59 | Tutorial (G2, G1) -Problems | 14,16 September 2016 |
| 60 | Properties of M/M/I model of finite queue, examples | 17 September 2016 |
| 61 | Problems on M/M/I model of finite queue | 19 September 2016 |
| 62 | Problems | 20 September 2016 |
| 63 | Problems | 21 September 2016 |
| 64 | Tutorial (G3, G2, G1) - Revision on Unit-IV | 19,21,23 September 2016 |
| Unit-V Stochastic Processes | | |
| 65 | Introduction to stochastic processes | 24 September 2016 |
| 66 | Classification of random processes | 26 September 2016 |

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| 67 | Methods of description of random process and its problems | 27 September 2016 |
| 68 | Stationary random process and its problems | 28 September 2016 |
| 69 | Non-stationary random process and its problems | 1 October 2016 |
| 70 | Average values of single random process and two or more random processes | 3 October 2016 |
| 71 | Markov processes, Examples | 4 October 2016 |
| 72 | Tutorial (G1) -Problems | 28 October 2016 |
| 73 | Markov chain and its problems | 29 October 2016 |
| 74 | Classification of states | 31 October 2016 |
| 75 | Stochastic matrix and problems | 1 November 2016 |
| 76 | Discussion of previous question papers | 2 November 2016 |

Text books:

- 1) Higher Engineering Mathematics by Dr. B.S. Grewal, Khanna Publishers
- 2) Probability and Statistics for Engineers and Scientists by Sheldon M.Ross, Academic Press
- 3) Operations Research by S.D. Sarma,

Name and signature of the faculty: M.Sathisjh ----

Name and signature of Head of the Department: Ms K.Padma ----