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| **LESSON PLAN FOR PROBABILITY AND STATISTICS(ODD-2021)**  Book: Probability and Statistics, Ninth edition, Pearson Publication  Author: Walpole, Myers, Myers and Ye | | | | |
| **Chapter** | **Section** | **Course contents/Topics** | **Lecture/hours** | **Problems from exercise (class/assignment)** |
| 1 | 3 | Measures of Location: The Sample Mean ,variance and Histogram | 1 |  |
| 2 | 1, 2,3 | Sample Space, tree diagram, Events | 1 | Ex-2,3 3, 7, 9,11,  Discuss many examples. |
| 4, 5 | Probability of an Event, Additive Rule | 1 | 50, 53, 58, 59, 65,68,72 |
| 6 | Conditional Probability, Independence, and the Product Rule | 1 | 74, 75,77,80,89,91 |
| 7 | Bayes’ Rule | 1 | 95,96,97,98 |
| 3 | 1,2 | Concept of a Random Variable, Discrete Probability Distributions | 1 | 10, 11, 12, 35 |
| 3 | Continuous Probability Distributions | 1 | 7,14,21,29,30 |
| 4 | Joint Probability Distributions | 2 | 38, 42, 44, 49, 50, 56 |
| 4 | 1 | Mean of a Random Variable | 1 | 4, 7, 10, 12, 20,23, |
| 2 | Variance and Covariance of Random Variables | 1 | 34,35,50, |
| 3,4 | Means and Variances of Linear Combinations of Random Variables, Chebyshev’s Theorem | 2 | 57,58,60,75,77,78 |
| 5 | 2,3 | Binomial and Multinomial Distributions, Hypergeometric Distribution | 2 | 9, 11, 15, 16, 19, 22,  31,32, 43, 44, 47 |
| 4,5 | Negative Binomial and Geometric Distributions, Poisson Distribution and the Poisson Process | 2 | 49, 50, 51,60, 69,70 |
| 6 | 1  2  3  4  5 | Continuous Uniform Distribution  Normal Distribution  Areas under the Normal Curve  Applications of the Normal Distribution  Normal Approximation to the Binomial distribution | 4 | 2, 4,7, 8,10,15,22 |
| 24, 26, 29, 34 |
| 6 | Gamma and Exponential Distributions | 1 | 41, 46, 54 |
| 7 | 2 | Transformations of Variables | 1 | 2,3, 8,12, |
| 3 | Moments and Moment-Generating Functions | 2 | 17,19, 20 |
| 8 | 2,3,4,5 | Some Important Statistics  Sampling Distributions  Sampling Distribution of Means and the Central Limit  Theorem, Sampling Distribution of S2 | 2 | 3, 5, 7,10,12  17, 19,20,23, 24, 37,40,41, 45, |
| 9 | 3,4,12 | Statistical Inference ,Classical Methods of Estimation, interval estimation | 2 | 2,3,4,5,6,7,72,73 |
| 14 | Maximum Likelihood Estimation | 2 | Exapmle:21,22,23  Exercise:81,85, 87 |
| 10 | 1,2,3 | Statistical Hypotheses: General Concepts  Testing a Statistical Hypothesis | 2 | 2, 3, 4 |
| 4,5 | Single Sample: Tests Concerning a Single Mean  Two Samples: Tests on Two Means(known variance, unknown but equal variance) | 2 | 20, 21, 23, 29, 30, 35, 42 |
| 10 | One- and Two-Sample Tests Concerning Variances | 1 | 67, 68, 71, 73 |
| 11 | Goodness-of-Fit Test | 1 | 80, 83, 87, 89, 93 |
| 12 | Test for Independence (Categorical Data) | 1 |
| 11 | 1, 2,3 | Introduction to Linear Regression  The Simple Linear Regression (SLR) Model  Least Squares and the Fitted Model  Correlation | 2 | 2, 5, 7  43, 45, 47 |

Co-ordinator