

# PROPOSED LESSON PLAN FOR PROBABILITY AND STATISTICS(ODD-2020)

**Book: Probability and Statistics, Ninth edition, Pearson Publication**

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<u>Chapter</u>	<u>Course contents/Topics</u>	<u>Lecture/hours</u>	<u>section</u>	<u>Problems from exercise (class/assignment)</u>
1	Measures of Location: The Sample Mean ,variance and Histogram	1	3	
2	Sample Space, tree digram, Events	1	1, 2,3	Ex-2,3 3, 7, 9,11, Discuss many examples.
	Probability of an Event, Additive Rule	1	4, 5	50, 53, 58, 59, 65,68,72
	Conditional Probability, Independence, and the Product Rule	1	6	74, 75,77,80,89,91
	Bayes' Rule	1	7	95,96,97,98
3	Concept of a Random Variable, Discrete Probability Distributions	1	1,2	10, 11, 12, 35
	Continuous Probability Distributions	1	3	7,14,21,29,30
	Joint Probability Distributions	2	4	38, 42, 44, 49, 50, 56
4	Mean of a Random Variable	1	1	4, 7, 10, 12, 20,23,
	Variance and Covariance of Random Variables	1	2	34,35,50,
	Means and Variances of Linear Combinations of Random Variables, Chebyshev's Theorem	2	3,4	57,58,60,75,77,78
5	Binomial and Multinomial Distributions, Hypergeometric Distribution	2	2,3	9, 11, 15, 16, 19, 22, 31,32, 43, 44, 47
	Negative Binomial and Geometric Distributions, Poisson Distribution and the Poisson Process	2	4,5	49, 50, 51,60, 69,70
6	Continuous Uniform Distribution	4	1	2, 4,7, 8,10,15,22
	Normal Distribution		2	
	Areas under the Normal Curve		3	24, 26, 29, 34
	Applications of the Normal Distribution		4	
6	Normal Approximation to the Binomial distribution	1	5	41, 46, 54
	Gamma and Exponential Distributions		6	
7	Transformations of Variables	1	2	2,3, 8,12,
	Moments and Moment-Generating Functions	2	3	17,19, 20

8	Some Important Statistics Sampling Distributions Sampling Distribution of Means and the Central Limit Theorem, Sampling Distribution of $S^2$	2	2,3,4,5	2,3, 5, 7,10,12 17, 19,20,23, 24, 26,30, 37,38,40,41, 45,72,73
9	Statistical Inference ,Classical Methods of Estimation,interval estimation	2	3,4,12	
	Maximum Likelihood Estimation	2	14	85,86, 87
10	Statistical Hypotheses: General Concepts Testing a Statistical Hypothesis	2	1,2,3	2, 3, 4, 9
	Single Sample: Tests Concerning a Single Mean Two Samples: Tests on Two Means(known variance, unknown but equal variance)	2	4,5	20, 21, 23, 29, 30, 35, 42
	One- and Two-Sample Tests Concerning Variances	1	10	67, 68, 71, 73
	Goodness-of-Fit Test	1	11	80, 83, 87, 89, 93
	Test for Independence (Categorical Data)	1	12	
11	Introduction to Linear Regression The Simple Linear Regression (SLR) Model Least Squares and the Fitted Model Correlation	2	1 2 3 12	2, 5, 7 43, 45, 47

**\*Examples related to each articles are compulsory**

Co-ordinator