**WORKPLAN**

**B.A. Hons. Economics**

**SEM I: Introductory Statistics for Economics**

**Name of Instructor: Prof. Indu Choudhary**

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| **TOPIC** | **REFERENCE** | **TENTATIVE DATE** |
| Unit 1: Introduction and overview  The distinction between populations and samples and, between population parameters and sample statistics; Pictorial Methods in Descriptive Statistics; Measures of Location and Variability. | Devore: Ch 1 | August |
| Unit 2: Elementary probability theory  Sample spaces and events; probability axioms and properties; counting techniques; conditional probability and Bayes' rule; independence. | Devore: Ch 2 | September 1st-3rd week |
| Unit 3: Random variables and probability distributions  Defining random variables; discrete and continuous random variables, probability distributions; expected values and functions of random variables. | Devore: Ch 3 (3.1-3.3), Ch 4 (4.1- 4.2) | September 4th – October 2nd week |
| Unit 4: Special Probability Distributions  Properties of commonly used discrete and continuous distributions (uniform, binomial, exponential, Poisson, hypergeometric and Normal random variables). | Devore: Ch 3 (3.4-3.6) and Ch 4 (4.3-4.4) including Bernoulli, Binomial, Geometric Hypergeometric, Poisson, Uniform, Exponential and Normal distribution | October 4th – November 2nd week |
| Unit 5: Random sampling and jointly distributed random variables  Density and distribution functions for jointly distributed random variables; computing expected values of jointly distributed random variables; conditional distributions and expectations, covariance and correlation. | Devore: Ch 5.1-5.2 (excluding the section on more than two random variables) | November 3rd week |
| **Additional Information** | | |
| End semester exam:  This would be of 90 marks. The following decisions were taken regarding the choice offered within topics and the weightage given. (i) Unit 1 and 2 would be given a combined weight of 20 marks, Unit 3 of 20 marks, Unit 4 of 30 marks and Unit 5 would be given a weightage of 20 marks. (ii) Units 1 and 2, would together have 3 questions, of which students would be required to do 2 questions (iii) Units 3 would be compulsory, and would have two questions of 10 marks each. (iv) Units 4 would be compulsory, and would have three questions of 10 marks each (v) Units 5 would be compulsory, and would have two questions of 10 marks each (vi) There would be a limited number of sub-parts per question. No sub-part would be less than 5 marks and if a sub-part had more than 5 marks, the marks would be in multiples of 5.  The internal assessment:  This would comprise two class tests of 12 marks each. Lecture attendance will carry 6 marks. The continuous assessment would comprise of 35 marks tutorial assignment which would involve plotting the distribution in R / Excel and Quizzes / problem solving during tutorials. Tutorial attendance will carry 05 marks. | | |
| Essential Readings: 1. Devore, J. (2012). Probability and Statistics for Engineers, 8th ed. Cengage Learn-ing. Supplementary Readings: 2. Hogg, R., Tanis, E., Zimmerman, D. (2021) Probability and Statistical inference, 10th Edition, Pearson India Education Services Pvt. Ltd. 3. Miller, I., Miller, M. (2017). J. Freund's Mathematical Statistics with Applications, 8th ed. Pearson. | | |