Minutes of the Meeting

Introductory Statistics for Economics

Date: 27th October, 2022

Subject	:	B.A. (Hons) Economics – First Semester (2022)
Course Code	:	ECON003
Course Abbreviation	:	STAT l
Credits	:	4
Duration (per week)	:	4 hours (3 Lectures+ 1 Tutorial)
Date of Meeting	:	27th October 2022
Venue	**:**	Delhi School of Economics
Chair	:	Prof. Pami Dua and Dr. Reetika Garg

Attended By:

Pawan Kumar	Ramjas College
Yogita Yadav	Sri Venkateswara College
Anu Singh Deswal	Jesus and Mary College
Deepika Goel	Aryabhatta college
Shweta Nanda	ARSD
Renu Kumari Verma	Motilal Nehru College Evening
Ajay Kumar	Kamala nehru college
Anuj Kumar	Satyawati College(E)
Gurpinder Kaur	Shaheed Bhagat Singh College
Dr.D Appala Naidu	ARSD
Sarweshwar Kumar Gautam	Satyawati College
Ankur Bhatnagar	Satyawati College
Aishwarya	Gargi College

Dr. Arun Kumar	DCAC
Dr Pooja Sharma	Daulat Ram College
Kanika Aggarwal	Shri Ram college of commerce
Yogita Yadav	Sri Venkateswara College
Rakesh Kumar	Dyal Singh College
Shubhi Singh	Lady Shri Ram College for Women
Paramjeet Kaur	Sri Guru Gobind Singh College of Commerce
Ramesh Kumar	BNC

Course Objectives: The course familiarizes students with methods of summarizing and describing important features of data. The course teaches students the basics of probability theory and sets a necessary foundation for Inferential Statistical Theory and the Econometrics courses. The familiarity with probability theory will also be valuable for courses in economic theory.

Course Learning Outcomes: The student would understand the concept of probability, random variables and their distributions and become familiar with some commonly used discrete and continuous distributions of random variables so that they would be able to analyse various real-life data.

A meeting of teachers of this course was held to discuss the following:

- The detailed reading list for the UGCF course to be implemented in the academic session 2022-23.
- The pattern of the semester-end exam.
- How to give a good intuition of the concepts to the students by using some practical concepts.

Since this paper is taught in its present form for the first time, under UGCF, a sub-committee was constituted to review the suggested readings. The committee consisted of the following teachers:

1. Deepika Goel, Aryabhatta College
2. Paramjeet Kaur, Sri Guru Gobind Singh College of Commerce
3. Priyanka Bhatia, SRCC College
4. Poonam Kalra, St. Stephen's College
5. Pooja Sharma, Daulat Ram College

The issues discussed in the meeting are as follows:

1. Teachers suggested that from the suggested readings in the syllabus, J Devore and Hogg, Tanis and Zimmerman (HT&Z) could be used as core textbooks. John Rice could be a suggested reading for the teachers
2. Chapter-wise exclusions are reported in the table given below for detailed readings.
3. Moment Generating Function (MGF)treatment of distributions is excluded.
4. Students should be aware of the following topics; however, no questions should be asked in the examinations:
   a) Stem and Leaf Display
   b) Only analytical questions on pictorial representation should be asked in the exams
   c) Double integration for Joint continuous random variables in Ch 5 should be kept simple.
5. In order to achieve uniformity in evaluation of final answer scripts, it was decided to include the following note in final question paper:
   a) All questions within each section are to be answered in a contiguous manner on the answer sheet. Start each question on a new page, and all sub-parts of a question should follow one after the other.
   b) All intermediate calculations should be rounded off to 3 decimal places. The values provided in statistical tables should not be rounded off. All final calculations should be rounded off to two decimal places.
6. It was agreed that the question paper will include internal choice in each section with limited number of sub-parts.
7. The following distribution of topics, indicative weightage, and the amount of choice within each section, was agreed upon:
   a. Section 1: Unit 1 and Unit 2: (weightage 20 marks), Two questions of 10 marks each with one question from Unit 1 and the other from Unit 2. Internal choice in these units should be given as 2 out of 3 questions
   b. Section 2: Unit 3: (weightage 20 marks), Two questions out of Three for 10 marks each.
   c. Section 3: Unit 4: weightage 20 marks), Two questions out of Three for 10 marks each.
   d. Section 4: Unit 5: (weightage 15 marks), Three questions out of Four for 5 marks each.
8. There would be no compulsory question in any of the sections.
9. The internal assessment would comprise of 10 marks Class test, 10 marks Class test/assignment. Attendance will carry 05 marks.

The details of the Course Content, Topic-wise Reading list, recommended textbooks are given below:

Content (Unit-wise):

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.

Unit 2: Elementary probability theory

Sample spaces and events; probability axioms and properties; counting techniques; conditional probability and Bayes' rule; independence.

Unit 3: Random variables and probability distributions

Defining random variables; discrete and continuous random variables, probability distributions; expected values and functions of random variables.

Unit 4: Special Probability Distributions

Properties of commonly used discrete and continuous distributions (uniform, binomial, exponential, Poisson, hypergeometric and Normal random variables).

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.

Unit No.	TOPIC	READINGS FROM CORE TEXTS
1.	**Introduction and Overview**	***Devore: Ch 1***
2.	**Elementary Probability Theory**	***Devore: Ch 2*** ***Hogg, Tanis and Zimmerman: Ch 1***
3.	**Random Variables and Probability Distributions**	***Devore: Ch 3 (3.1-3.3), Ch 4 (4.1-4.2)*** ***Hogg, Tanis and Zimmerman: Ch 2 (2.1-2.2), Ch 3.1***
4.	**Special Probability Distributions**	***Devore: Ch 3 (3.4-3.6) except negative binomial distribution, Ch 4 (4.3-4.4) except gamma distribution*** ***Hogg, Tanis and Zimmerman: Ch 2 (2.4, 2.5 and 2.7), Ch 3 (3.2-3.3) except gamma and chi-square distributions (MGF treatment of distributions is not included)***
5.	**Random Sampling and Jointly Distributed Random Variables**	***Devore: Ch 5.1-5.3 (except pgs 200-202), 5.4, 5.5*** ***Hogg, Tanis and Zimmerman: Ch 4 (4.1-4.4) [Double integration can be kept simple]***

Essential Readings:

1. Devore, J. (2012). Probability and Statistics for Engineers, 8th ed. Cengage Learn-ing.
2. Hogg, R., Tanis, E., Zimmerman, D. (2021) Probability and Statistical inference, 10th Edition, Pearson.
3. Miller, I., Miller, M. (2017). J. Freund's Mathematical Statistics with Applications, 8th ed. Pearson.

Recommended Readings for Teachers:

1. John A. Rice (2007). Mathematical Statistics and Data Analysis, 3rd ed. Thomson Brooks/Cole.
2. Gelman, A., & Nolan, D. (2017). Teaching statistics: A bag of tricks. Oxford University Press.