UNIVERSITY OF DELHI
DELHI SCHOOL OF ECONOMICS
DEPARTMENT OF ECONOMICS

Minutes of Meeting

Subject	:	**B.A. (Hons) Economics, Third Semester (CBCS)**
Course	:	**07 – Statistical Methods in Economics**
Date	:	**Thursday, 5ᵗʰ May, 2016**
Venue	:	**Department of Economics, Delhi School of Economics**
		University of Delhi
Convener	:	**Prof. Surender Kumar**

Attended by:

S. No.	Name of Teacher	College
1	Pooja Sharma	Daulat Ram College
2	Bibekananda Suna	ARSD College
3	Anita Balani	HRC
4	Balbhadra Birua	Satyawati (E)
5	Hariram Prajapati	KNC
6	Pratibha Agarwal	PGDAV College
7	Poonam Kalra	St. Stephen
8	Puja Pal	Janki Devi Memorial College
9	Chandan Singha	Hindu College
10	Deepika Goel	Aryabhatta College
11	C. Goswami	Dyal Singh College (M)
12	Ankur	Satyawati (D)
13	Bhawna Seth	Dyal Singh College (M)
14	D. Sehdev	Ramjas College
15	Priyanka Bhatia	SRCC
16	Anjana Kochak	LSR
17	Paramjeet Kaur	SGGSCC

Course Description

This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. The semester concludes with some topics in statistical inference that include point and interval estimation.

Course Outline

1. Introduction and Overview

The distinction between populations and samples and between population parameters and sample statistics; the use of measures of location and variation to describe and summarize data; population moments and their sample counterparts.

Reference: Devore, Chapter 1 (excluding pp. 13-15, 39-42)

2. Elementary Probability Theory

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

Reference: Devore, Chapter 2.

3. Random Variables and Probability Distributions

Defining random variables; probability distributions; expected values of random variables and of functions of random variables; properties of commonly used discrete and continuous distributions (Uniform, Binomial, Exponential and Normal random variables).

Reference: Devore, Chapter 3 (excluding pp. 122-131) & Chapter 4 (excluding pp. 167-187)

4. Random Sampling and Jointly Distributed Random Variables

Density and distribution functions for jointly distributed random variables; computing expected values; covariance and correlation coefficients.

Reference: Devore, Chapter 5 till pp 212 (discussion related to **two jointly distributed discrete random** variables to be in done, excluding pp. 200-202)

5. Sampling

Principal steps in a sample survey; methods of sampling; the role of sampling theory; properties of random samples.

Reference: Devore Chapter 5 pp. 212 onwards (excluding pp. 218-221)

6. Point and Interval Estimation

Estimation of population parameters using methods of moments and maximum likelihood procedures; properties of estimators; confidence intervals for population parameters
Reference: Devore Chapter 6 (excluding pp. 249-250) and Chapter 7 (excluding pp. 282-283, pp. 289-296)

Readings:

1. Jay L. Devore, Probability and Statistics for Engineers, 8th edition Cengage Learning, 2012.
2. John E. Freund, Mathematical Statistics, Prentice Hall, 1992.
3. Richard J. Larsen and Morris L. Marx, An Introduction to Mathematical Statistics and its Applications, Prentice Hall, 2011.
4. William G. Cochran, Sampling Techniques, John Wiley, 2007.
5. Irwin Miller and Marylees Miller, John E. Freund's Mathematical Statistics with Applications, Pearson, 7th edition, 2004

Assessment:

This course carries 100 marks of which the end semester examination is 75 marks and internal assessment is worth 25 marks as per the following norms: Two class tests of 10 marks each and 5 marks for attendance.

Minutes of the Meeting (May 5, 2016) for Statistical Methods for Economics

1. Modifications to parts of the textbook to include or exclude are recorded above.
2. It was agreed to have a limited number of subparts to questions in the Semester Exam.
3. The following note is to be included in the question paper: 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 subparts of a question should follow one after the other.
4. It was agreed that the question paper will include internal choice in each section.
5. It was decided that the question paper would have four sections as given below. The following distribution of topics and marks, and the amount of choice within each topic, was agreed upon:
   Section 1:
   Topic 1 and topic 2: Introduction and Overview, and Elementary Probability Theory (indicative weightage 15 marks), One **compulsory** question of 5 marks
   Section 2:
   Topic 3: Random variables and probability distributions (indicative weightage 20 marks)
   Section 3:
   Topic 4 and topic 5: Random Sampling and Jointly Distributed Random Variables and Sampling (indicative weightage 20 marks)
   Section 4:
   Topic 6: Point and Interval estimation (indicative weightage 20 marks)