UNIVERSITY OF DELHI
DELHI SCHOOL OF ECONOMICS
DEPARTMENT OF ECONOMICS

Minutes of the Meeting

Subject:	B.A. Program, SEC IV (6th Semester)
Course:	BASIC COMPUTATIONAL TECHNIQUES FOR DATA ANALYSIS
Date of Meetings:	16th January 2020
Venue:	Department of Economics, Delhi School of Economics, University of Delhi
Chair:	Prof. Sunil Kanwar

Attended by:

S.N	Name	College
1	Anita	Kalindi College
2	Renu Kumari Verma	Motilal Nehru College (E)
3	Joginder Singh	SSN
4	Vickey Mehriya	MAC
5	Sharad Ranjan	ZHC (E)
6	Amit Kr Jha	SVC
7	Abhishek Jaiswal	SPM
8	Rakhi Solanki	Sri Aurobindo College (M)
9	Nupur Kataria	Maitreyi College
10	Meenakshi Sinha Swami	Mata Sundri College
11	Anjali Agarwal	MLNC (E)
12	Sakshi Jindal	MSC
13	Aniruddha Prasad	PGDAV (M)

Decisions:
The teachers present decided to finalize the detailed syllabus given below:

Department of Economics
SEC IV (6th semester) for B.A. Program
BASIC COMPUTATIONAL TECHNIQUES FOR DATA ANALYSIS

Purpose / Objective of the paper:

The main purpose of this Skill Enhancement Course (SEC) in Economics is to provide B.A. Program students with hands-on experience in developing skills in statistical techniques involving computer applications. The course would enable students to become familiar with different data sources relating to various aspects of the economy, with estimation of simple relationship between economic variables, and with interpretation of the estimation results.

This course is an extension of the previous semester's course SEC: Data Analysis, which is a perquisite for taking this course. This course develops computational skills based on the knowledge of Statistics developed in the previous semester. Along with the previous semester's SEC papers (i.e. 'Understanding the Economic Survey and the Union Budget', 'Research Methodology' and 'Data Analysis'), this course aims to equip students with the ability to undertake basic research projects pertaining to the Indian economy, which in turn, would prove helpful in a variety of professions.

Course outline:
Unit -1
Introduction to MS Excel: Spreadsheet basics and inputting of data, word processing and presentation of data using graphs and tables.

This unit should cover: (i) Inputting data; (ii) Selecting data; (iii) Multiplication, Division and Addition; (iv) Formatting Cells; (v) Hide/unhide columns; (vi) Sorting Data; (vii) Filtering Data; (viii) Freezing and Unfreezing Headers; (ix) AUTO SUM and SUMIF commands; (x) Using MAX, MIN, COUNT, COUNTIF and POWER command; (xi) Pivot Tables; (xii) Line Graph, Column Chart, Histogram, Pie Chart and Scatter Plot.

References: MS EXCEL 2010 manual (available free online), or other Excel manuals.

Unit - II
Review of (i) Measures of Central Tendency - Mean, Median and Mode; Arithmetic Mean, Geometric Mean and Harmonic Mean; (ii) Measures of Dispersion – Standard Deviation and Variance;

(iii) Skewness; (iv) Kurtosis.
Focus should be on computation techniques in MS Excel, and interpretation of numbers based on what has been covered in the BA Program Semester V SEC paper 'Data Analysis'.
References:

1. P.H. Karmel and M. Polasek (1978), Applied Statistics for Economists, 4th edition, Pitman

2. M.R. Spiegel, L.J. Stephens and N. Kumar (2010), Statistics, 4th edition, Schaum Series, McGraw Hill

3. Dr. K. L. Dahiya, Adhyayan Samagri 1 (1-12), chapters 1 to 8, B.Com (H), 1st year, Vyavsahik Sankhiki, Department of Commerce, Mukt Shiksha Parishad, Dilli Vishwavidhyalaya (Reference in HINDI)

4. MS EXCEL 2010 (available free online), and/or other excel manuals
Introduction to calculation of financial formulae: Net Present Value (NPV), Internal Rate of Return, Future Value, Equated Monthly Installment (EMI), Compound Growth Rate

c. Using spreadsheet to perform the above mathematical/statistical/financial functions

References:
Financial Management, Chapter 6; Investment Decisions, Chapter 7, Institute of Chartered Accountants of India study material.
Pamela Drake and Frank Fabozzi, 2009, Foundations and Applications of the Time Value of Money, John Wiley and Sons, Chapters 1, 2, 5, 9 (NOTE: This is a TEACHERS' REFERENCE)
MS EXCEL 2010 (available free online), and/or other excel manuals.

Unit III
Review of Correlation and Rank Correlation.
Introduction to simple Ordinary Least Squares (OLS) (i.e. only one explanatory variable); Testing hypotheses related to regression coefficients; Goodness of fit (R2); Reporting the estimation results.

Focus should be on the use of MS Excel for the above computation techniques.
References::

1. P.H. Karmel and M. Polasek (1978), Applied Statistics for Economists, 4th edition, Pitman
2. M.R. Spiegel, L.J. Stephens and N. Kumar (2010), Statistics, 4th edition, Schaum Series, McGraw Hill
3. Coursera Lectures by Sharad Borle (available free on Coursera.org)
4. MS EXCEL 2010 (available free online), and/or other Excel manuals
5. Dr. K.L. Dahiya, Adhyayan Samagri 1 (1-12), Chapters 1 to 8, B.Com (H), 1st year, Vyavsahik Sankhiki, Department of Commerce, Mukt Shiksha Parishad, Dilli Vishwavidhalaya (HINDI)

Unit IV
Introduction to economic and business data sets available in the public domain, such as from the NSE, BSE, RBI, MOSPI, World Bank, UN, etc.
Any of these datasets may be used for demonstrating the statistical concepts studied in the course

Unit V
Preparation of a project report based on data available in the public domain, using concepts studied in units II and III.

Marking scheme:
Internal assessment of 25 marks, comprising: (a) 5 marks for attendance, (b) 10 marks for written test, (c)10 marks for computer based test
End Semester assessment of 75 marks, comprising: (a) 25 marks for project to be submitted before the final exam, and (b) 50 marks for a written final exam