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Lesson Plan (CORE, Semester VI, Jan to June 2023)

Name of Teacher	Dr Loveleen Gupta	Department	Economics
Course	BA Prog (SEC)	Semester	VI
Paper	Basic Computational Techniques for Data Analysis	Academic Year	2022-23

Learning Objectives

The main purpose of this skill Enhancement Course (SEC) in Economics is to provide B.A. (P) students with hands on experience to develop skills in statistical techniques using computer applications. The course could help students to get familiar with different data sources on various aspects of the economy, estimate simple relationship between economic variables and interpret estimation results.

Learning Outcomes

This course is an extension of the previous semester's SEC: Data Analysis, which is a prerequisite for taking this course. This course intends to develop computational skills based on the statistics knowledge developed in the last semester. Along with the previous semester's SEC papers, viz. 'Understanding the Economic Survey and the Union Budget', 'Research Methodology' And 'Data Analysis', the course will equip the students to undertake basic research projects on the Indian economy, which would prove to be helpful in a variety of professions.

Lesson Plan

Week No.	Theme/Curriculum	Any Additional Information
Week 1-3	Unit-1 Introduction to Excel (Microsoft office): Spreadsheet basics and inputting of data, word processing and presentation of data with graphs and tables.	

	<p>It should cover: (i) Inputting of Data; (ii) With given data selecting of data with a single command; (iii) Multiplication, Division and Addition of Data (Relatively and Absolutely); (iv) Formatting Cells particularly Decimal points; (v) Hide/unhide of Columns; (vi) Sorting of Data; (vii) Filtering of Data; (viii) Freezing and Unfreezing of Headers; (ix) AUTO SUM and SUMIF commands in Excel; (x) Calculating MAX, MIN, COUNT, COUNTIF and power command; (xi) Pivot Tables; (xii) Use of Line Graph, Column Chart, Histogram, Pie Chart and Scatter Plot.</p>	
Week 3-7	<p>Unit 2 Review of concepts: Measures of Central Tendency- Mean, Median and Mode; Arithmetic Mean, Geometric Mean and Harmonic Mean; Measures of Dispersion: Standard Deviation and Variance; Skewness and Kurtosis. Introduction to calculation of financial formulae: Net Present Value (NPV), Internal Rate of Return, Future Value, Equated Monthly Installment (EMI), Compound Growth Rate</p>	Test 1 scheduled
Week 8-10	<p>Unit 3 Review of the concepts of Correlation and Rank Correlation. b. Introduction to the method of Ordinary Least Squares (OLS) in two variable case (one department and one explanatory). Testing of hypothesis related to regression coefficient and goodness of fit (R^2).Reporting of the estimation results.</p>	Test 2 scheduled
Week 10-12	<p>Unit 4 Introduction to Economic and Business Data Sets which are available in the public domain such as NSE, BSE, RBI, MOSPI, World Bank data, UN data etc. Any of these datasets may be used for explaining, demonstrating the statistical concepts studied in the course</p>	Practical test scheduled
Week 13-15	<p>Unit 5 Preparation of a project report based on data available in public domain, using concepts studied in units II and III.</p>	Practice and Doubts Session

References

1. P.H.Karmel and M.Polasek (1978), Applied Statistics for Economists (4 th edition), Pitman
 2. M.R. Spiegel, L.J. Stephens and N. Kumar (2010), Statistics (4 th edition), Schaum Series, McGraw Hill
 3. Dr. K. L. Dahaiya, Adhyan Samagri 1 (1-12), cp 1 to 8, B Com (Hon), 1 st year, Vyavsaahik Sankhiki, Department of Commerce, Mukta Shiksha Parishad, Dilli Vishwavidhyalaya (Reference in HINDI)
 4. MS EXCEL 2010 available free online in PDF form can be referred and/or other excel manuals can be Referred
 5. Financial Management, Cp 6 and Investment Decisions, Cp 7 from ICAI Study Material, Institute of Chartered Accountants of India Publication
 6. ** Pamela Drake and Frank Fabozzi, 2009, Foundations and Applications of the Time Value of Money, John Wiley and Sons (TEACHERS REFERENCE) Cp 1, cp 2, Cp 5 and Cp 9
- Additional Resources**

1.

Online Resources (If Any)

Assignment and Class Test Schedule for Semester

Link the assignment and Test (optional)