

INTRODUCTORY VOCATIONAL COURSE

DATA ANALYSIS

Credits: 3 / Teaching Hours: 45 hrs (Theory = 15 + Practical = 30)

COURSE INTRODUCTION

Information is the major driving force for socio-economic development of a country in the present era of information society. Information is created and presented in various forms and then used for economic decision-making activities. One of the key ingredients of creating information is Data. The data is the raw form of information that is to be collected, organized, and processed to get information. Data, therefore, need to be analysed and converted to simpler presentable forms like tables, graphs, and diagrams so that it can be utilized in more meaningful manner. The knowledge of tools and techniques of data collection, presentation and analysis by using the spreadsheet package is high in demand in almost every sector of economy.

COURSE OUTCOME

At the end of the course, the student will be able to

- Use the tools and techniques of Spreadsheet (Excel).
- Collect, Present Data using the spreadsheet (Excel).
- Analyse the Data using statistical tools.

SEM-I

DATA ANALYSIS- I

Unit 1: - STATISTICAL CONCEPT

Statistics/Data, Variable and Its Types, Types of Data, Source of Data, Methods of Data Collection; Census Method, Survey Method, Observation Method, Experimental Method. Errors in Data or Data Collection, Non-Sampling Errors, Sampling Errors, Sources of Secondary Data.

UNIT 2 TOOLS OF DATA COLLECTION

Quantitative and Qualitative Research, Tools of Data Collection: Quantitative Research; Questionnaire, Schedule, Interview. Qualitative Research; Participant Observation, Non-Participant Observation, Focused Interview, Case Study Method, Group Discussion, Key Informants.

UNIT 3 INTRODUCTION TO STATISTICAL SOFTWARE

Introduction & Need of Statistical Software, Excel-Basics Data Entry, Validating Data, Use of Formula and Functions, Presentation of Data -Tabular, Charts & Graphic. Percentile.

UNIT 4 PROJECT WORK

Prepare a Questionnaire.

SEM-II
INTRODUCTORY VOCATIONAL COURSE
DATA ANALYSIS-II

UNIT I UNIVARIATE ANALYSIS

Measures of Central Tendency- Arithmetic Mean, Median, Mode, Geometric Mean and Harmonic Mean

Measures of Dispersion- Range, Mean Deviation, Standard Deviation, Coefficient of Variation and Quartile Deviation.

Skewness and Kurtosis

UNIT 2 BIVARIATE ANALYSIS

Correlation- Karl Pearson and Rank Correlation

Regression- Lines of Regression; Least Square Method.

Time series Forecasting.

UNIT 3 HYPOTHESIS CONCEPT & TESTING

Meaning of Hypothesis, Procedure for Hypothesis Testing, Errors in Hypothesis Testing; one-tailed and two-tail test.

Standard Error. T-test, Z-Test, F-Test (ANOVA), Chi-Square Test

UNIT 4 PROJECT WORK

Data Analysis using Inferential Statistics as guided by the Teacher.

REFERENCE

- 1) Blaikie, N. (2003). Analyzing quantitative data: From description to explanation. Sage.
- 2) Bohrnstedt, G. W., & Knoke, D. (1994). Statistics for social data analysis.
- 3) Bryman, A., & Cramer, D. (1994). Quantitative data analysis for social scientists (rev. Taylor & Frances/Routledge.
- 4) Cramer, D. (2003). Advanced quantitative data analysis. McGraw-Hill International.
- 5) Sharma, S. (1996). Applied Multivariate Techniques, University of South California, John Wiley & Sons, Inc.
- 6) Tabachnick B., Fidell, L. (2007). Using Multivariate Statistics, 5th edition Pearson Education, Inc.

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