

# RESEARCH METHODOLOGY IN SOCIAL SCIENCES

(ADD-ON COURSE FOR BA STUDENTS)

## SYLLABUS

### Module 1

**Foundation of Research** – Meaning, Objectives, Concepts and Importance in Research, Research Designs (Exploratory, Descriptive, and Experimental), Deductive and Inductive Theory, Process of Research, Problem and Identification and Formulation – Research Questions, Research Gaps, Quantitative and Qualitative Research, Concept of Independent and Dependent variable

### Module 2

**Collection of Data** – Primary and Secondary Data, Sources of Secondary Data, Methods of Collecting Data, Questionnaire and Schedule

Classification of Data (Geographical, Chronological, Qualitative, and Quantitative), Statistical Table and Tabulation, Discrete and Frequency Distribution, Frequency Tables

Graphic Presentation of Statistical Data – Advantages and Disadvantages, Types (Bar Charts, Pie-Charts, Percentage, Frequency Polygon, Histograms)

### Module 3

**Data Analysis** – Measures of Central Tendency (Mean, Median, Mode), Properties of a good average, Arithmetic Mean, Geometric Mean, Harmonic Mean

Measures of Dispersion - Measures of Dispersion (Range, Quartile Deviation, Mean Deviation, Standard Deviation, Coefficient of Variation)

Skewness – Measures of Skewness (Bowly, Kelly, Moments), Kurtosis

Correlation Analysis – Types, Methods (Scatter Diagram, Karl Pearson, Probable Error, Coefficient of Correlation, Rank Correlation)

Regression Analysis – Regression Lines, Regression Equations, Properties of Regression Coefficients, Concept of Standard Error, Concept of Time Series

### Module 4

**Testing Hypothesis** – Concept of Sampling, Statistical Population, Sampling Frame, Sampling Error, Probability Sample – Simple Random Sample, Systematic Sample, Stratified Sample, Multi-stage Sample, Sample Size, and Practical Difficulties in Sampling

Setting of Hypothesis, Null and Alternative Hypothesis, Type 1 and Type 2 Errors, Hypothesis Testing – Fisher's Properties of Good Estimator, Test Statistics, Concept of Critical Region, Two Tailed and One Tailed Test, Significance Level, Concept of P-value, Tests (Z-Test, T-Test, Chi-Square, F-Test, ANOVA)

## **Module 5**

**Introduction to Statistical Softwares** – Types of Softwares (SPSS, GRETL, E-VIEWS, STATA, MINITAB), Practical Usage and Interpretation of Data

## **References**

1. Neil A. Weiss,  
Introductory Statistics
2. Amir Aczel,  
Complete Business Statistics
3. George Mallery,  
SPSS for Windows Step by Step, A Simple Guide and Reference  
Sixth Edition