Unit-1 Nature, purpose and limitations of scientific research, Approaches to research; Deductive and Inductive methods, Types of research, Formulation of research problem-identification and operationalization of the problem, Survey of literature, Development of working hypotheses, Preparation of research design. Investigation in availability of information. Sampling design; error minimization; evaluation of time and cost, Hypothesis testing, interpretation and generalization, systematization of findings.

Unit-2 Population and samples, Sampling techniques, Sampling and non-sampling errors, Sample size, Limitations of sampling. Sources of data: Primary data, Secondary data, Methods of data collection, Design of questionnaire, Problems in data collection, Data processing- operations and problems in data processing. Measurement and scaling techniques.

Unit-3 Simple and General Linear Regression Model; assumptions, estimation (OLS methods), Analysis of variance approach and its application in regression analysis. Estimation of non-linear equations; Tests of significance and coefficient of determination. Problems in Regression Analysis: Nature, test, consequences and remedial steps of problems of heteroscedasicity, multicollinearity and auto-correlation; Dummy variables and their uses; The Logit, Probit and Tobit models - Applications.

Unit-4 Distributed Lag Models- Koyck, Partial Adjustment and Adaptive Expectation models; Time Series Analysis; Stationarity, Unit roots, Co-integration-spurious regression, Dickey-Fuller test, Engle-Granger test, Random walk model, Error correction mechanism, Casualty test, Granger and Sim’s tests. ARIMA model; Vector autocoregression; Problems with VAR modelling – Applications.

Unit-5 Structure and components of research report, Types of report, Layout of research report, Mechanism of writing a research report; References and Bibliography. Data Analysis using MS Excel, SPSS and E-views.

Readings:
2. Kothari. C.R. Research Methodology
4. Ghosh. B.N., Scientific Methods and Social Research
12. Yamane, T., Statistics: An Introduction Analysis
18. Alexis Leon and Mathews Leon: Introduction to Computers with Ms-Office, TMH.

Approved by BOS in its meeting held on 31.01.2015