

Course Description & Objective:

To equip with basic concepts of research and its methodologies, to identify appropriate research topics and define appropriate research problem and parameters and to organize and conduct research in appropriate manner

Course outcomes:

- 1. Understand the meaning of 'research' and 'research methodology' in the humanities.*
- 2. Understand the dynamic relationships between your chosen research questions and your research methodology.*
- 3. Recognize different research methodologies, and be able to select those relevant or appropriate for your research topic and questions.*
- 4. Understand the need for appropriate research methodologies for different kinds of research material.*
- 5. Understand the place of different research methodologies in multidisciplinary and interdisciplinary contexts.*
- 6. Understand the difference between critical thinking and a theoretical approach.*
- 7. Identify one important issue associated with agricultural and develop a testable hypothesis to address this issue.*
- 8. Develop a set of objects and appropriate experimental procedure to test the hypothesis.*
- 9. Describe potential outcomes and pitfalls associated with the proposal and the experimental procedure.*

UNIT I

Nature, scope, and design of social research; Review of literature: qualitative (literary), quantitative (meta-analysis); Hypothesis: sources, types and characteristics;

UNIT II

Sample survey: sample and census survey, probability, nonprobability and mixed sampling; Methods of data collection: historical method, case study, observation, ethnographic methods, interview, questionnaire, focus group discussion, participatory rural appraisal, experimental method, pretesting, and pilot survey;

UNIT III

Scaling techniques different scales, item analysis, reliability, validity; Method of secondary data collection: sources, sample criteria, characteristics;

UNIT IV

Data analysis: descriptive statistics, mean difference test, analysis of variance and experimental design; Bivariate and multivariate correlation and regression; Factor analysis, Cluster analysis, Discriminant analysis,

UNIT V

Structural equation modelling, non-parametric statistics, Content analysis; Report writing: review, qualitative, and empirical article writing.

Suggested Readings

1. Hamdy A Taha. 2001. *Operations Research*. Prentice Hall of India.
2. Holman JP 1996. *Experimental Methods for Engineers*. McGraw Hill.
3. RudraPratap. 2003. *Getting Started with MATLAB. A Quick Introduction for Scientists and Engineers*. Oxford Univ. Press.
4. Santhosh Gupta. 1979. *Research Methodology and Statistical Techniques*. Khanna Publ.
5. Steven C Chapra& Raymond P Canale. 2000. *Numerical Methods for Engineers with Programming and Software Applications*. Tata McGraw.