

Course Title: RESEARCH METHODOLOGY

Paper Code: C-19

Credit: 4; Marks: 100

Course objectives: This course intends to provide a comprehensive understanding of the diverse research methods and their relevance, application of AI etc. for the study of contemporary research problems in the discipline of Social Sciences and Management.

Course Outcome: Upon successful completion of the course, the students will acquire relevant knowledge of major scientific research methods, **skills in Application of AI** for conducting scientific enquiry and to solve research problems.

Unit 1: INTRODUCTION TO RESEARCH

Meaning, types and process of research; Review of Literature; Research Problems and Objectives– meaning and formulation; Hypotheses- meaning and formulation.

Unit II: RESEARCH DESIGN & DATA COLLECTION

Concept, importance & types of Research Design
Types of data; data collection methods and tools

UNIT III: SAMPLING & MEASUREMENT SCALE

Concept and importance of sampling; Types of Sampling and Sampling Errors.
Measurement scale- meaning, classification & evaluation of scales

UNIT IV: DATA PROCESSING & HYPOTHESES TESTING

Editing & Coding, Classification, tabulation and graphical presentation.
Hypotheses Testing- Concepts and Tests

UNIT V: RESEARCH ETHICS & REPORT WRITING

Meaning and importance of Ethics in research; Publication Ethics- meaning & importance; Data manipulation & research fraud.
Research proposal & Report Writing

***UNIT V: RESEARCH ETHICS & REPORT WRITING (existing unit)**

UNIT V: RESEARCH ETHICS & ARTIFICIAL INTELLIGENCE

Meaning and importance of Ethics in research, Publication Ethics- meaning & importance, Data manipulation & research fraud;
Research proposal & Report Writing

- **Basic Concept and Applications; Ethical issues and Limitations of Artificial Intelligence in social science research**

Suggested Readings (AI):

1. Vicenç Torra (2026). *AI for Social Sciences: With an Introduction to Security, Privacy, Ethic and Society Impacts*, Springer Nature Switzerland.
2. Anthony Elliott (Ed., 2023). *The Routledge Social Science Handbook of AI*.
3. Peter Norvig & Stuart Russell (2020, 4th Ed.). *Artificial Intelligence: A Modern Approach*, Pearson Series in Artificial Intelligence.

- **Departments in the School are to incorporate the changes in Research Methodology paper, with due modification as needed to suit the relevance and requirements of their Ph.D. coursework and postgraduate programme.**

Suggested Readings:

1. Kothari C.R. and Garg, Research Methodology; Methods and Techniques, Third Edition, New Age, International Publishers, 1990.
2. Krishnaswami, O R and Ranganathan, Methodology of Research in Social Sciences, Himalaya.
3. Ghosh, B N, Scientific Methods and Social Research, Sterling, New Delhi.
4. Gupta, Santhosh, Research Methods and Statistical Techniques, Deep & Deep, New Delhi
5. P.Chaddah (2018). Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN: 978-9387480865.
6. Resnil, D.B (2011). What is ethics in research & why is it important, National Institute of Environmental Health Sciences, 1-10. Retrieved from <http://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>.
7. Indian National Science Academy (INSA), Ethics in Science Education, Research and Governance (2019), ISBN:978-81-939482-1-7, http://www.insaindia.res.in/pdf/Ethics_Book.pdf.