

Version: 2.0

PREREQUISITE: Relevant Masters Degree

Objectives- The objectives of this course are:

- To equip the scholars with the skills necessary for scientific and academic writing
- To develop an understanding of the process and strategies for reviewing existing literature
- To help scholars learn to critically analyze published literature and cite it appropriately
- To familiarize them with the formats and writing styles for drafting research proposals, dissertations, and research papers

Learning Outcomes- Upon completion of this course, the scholars shall be able to:

- Review literature relevant to their research
- Critically review existing literature and identify research gaps in academic publications
- Understand the concept of theoretical saturation
- Develop theoretical and conceptual frameworks
- Identify various standard writing styles
- Identify and use different referencing styles
- Use plagiarism checking software for checking the degree of plagiarism

MODULE I: Introduction to Literature Review

Need for literature review in scientific research; Sources of review of literature; Chronological reporting of review of literature; Understanding literature review “of” and “for” research; Conceptualizing relationships amongst various kinds of literature; Identifying gaps in research on topic of the study; Critically analyzing available literature; Theoretical and conceptual framework; Defining, refining, organizing and articulating your conceptual framework; Linking concepts and processes to your review; Web search and using advanced Search techniques for research through internet; Types of databases

MODULE II: Academic writing

Writing styles; Formats for manuscripts- Dissertation, Journal article, Book; Referencing styles; Referencing and citations; Indexing; Role of impact factor; Types of journals; Academic reading; Permissions, copyright & IPR; Creating a researcher identity; H-index

MODULE III: Ethical considerations in research

Ethical considerations for conducting scientific research; Publication in psychosocial, behavioral & natural sciences; Acknowledgement of contributions; Authorship issues; Permissions; Informed consent; Confidentiality; Researcher Integrity; Research with vulnerable population; IPR; Plagiarism; Research ethics & the moral dilemma; Fabrication & falsification; Conflict of interest; Personal & socio-political bias; Collaborative research; Peer review

MODULE IV: Practical training in Literature review

Identifying probable areas of research interest and formulating a research problem; Narrowing down to one of the variables from the topic of the research and writing a detailed literature review; identifying key terms and making a summary table citing relevant literature; enlisting research gaps; when to stop searching for more literature ; creating a reference list

MODULE V: Practical training of research paper writing

Academic Journals – National & International; Using tools for referencing and indexing; Assignment on writing a Review Paper

Recommended Books

1. Monippally, M. M., & Pawar, B. S. (2010). *Academic Writing*. New Delhi: Sage Publication
2. Huff, A. (1999). *Writing for Scholarly Publication*. Sage Publication.
3. Machi, L.A. (2009). *The Literature Review: Six Steps to Success*. Corwin Press.
4. Hart, C. (2002). *Doing a Literature Review*. Sage Publication
5. Cooper, H. (2010). *Research Synthesis and Meta-Analysis: A Step-By-Step Approach*. Sage Publication.

Mode of Evaluation Assignments/Class Tests/Seminars/Publications

Examination Scheme:

Components Internal component
Weightage (%) 50

ESE–End Semester Examination
50

Version: 3.0

PREREQUISITE: Relevant Masters Degree

OBJECTIVES:

- To Develop a research orientation for the scholars
- To equip the scholars with the skill to chose an appropriate research design for their doctoral research work
- To enable formulation of a research problem and it's translation into an empirical step by-step approach for working with data
- To practice computational techniques required in research for presentation and analysis of research data
- To differentiate between Qualitative and Quantitative Research

LEARNING OUTCOMES: Upon completion of this course, the scholar shall be able to:

- Formulate a research problem and draft research objectives
- Identify an appropriate research design for their doctoral research
- Use statistical packages required for their research
- Use computational techniques for presentation and analysis of data
- Prepare and present a research proposal

UNIT 1: INTRODUCTION TO RESEARCH (3 hrs)

The concept of Research, its meaning and importance; Traditions & paradigms of research; Criteria of a good research; Research as scientific enquiry; Theoretical Vs Applied Research; Types of research methods; Doctoral research – criteria and challenges

UNIT 2: RESEARCH PROCESS (9 hrs)

Stages in the research process; From observation to theory; Selection and formulation of research problem; Converting concepts into variables; Units and scales of measurement; Hypothesis construction; Types of data and tools of data collection; Sampling frame, Size & techniques

UNIT 3: RESEARCH DESIGN (9 hrs)

Developing a research plan; Quantitative: Experimental design, Non experimental design, Quasi experimental design, Ex-post facto design; Qualitative: Focus group interview, Grounded theory, Ethnographic research, Narrative analysis, Thematic analysis, Discourse analysis, Conversational analysis, Cooperative-inquiry, Case study, Participant observation; Constructing instruments for data collection; Establishing validity & reliability

UNIT 4: STATISTICAL INFERENCE & ANALYSIS (9 hrs)

Processing & displaying data- Editing, Coding, Content Analysis; Descriptive statistics –Measures of central tendency, Measures of dispersion; Correlation & Regression analysis; Inferential statistics – Sampling and non-sampling errors, degrees of freedom, Standard errors, Tests of significance, Parametric & non-Parametric tests, Applications based on z-test, t-test, Chi-square tests, ANOVA (F-Test), ANCOVA, Factor Analysis, Regression, Cluster Analysis; Using software like Spreadsheet, SPSS etc.

UNIT 5: RESEARCH APPLICATIONS (A-SoE, SoBAS, SoAS, SOMAS) (6hrs)

Research applications and trends in Engineering & applied sciences; MATLAB & simulations and computer applications; Design of experimental set-up; Use of standards and codes; Reading and critical analysis of scientific literature; Acknowledgement of contributions, authorship issues, IPR, plagiarism; Research ethics ; Biological data storage, Access & sharing; Writing a research grant proposal

UNIT 5: RESEARCH APPLICATIONS (B-SoHSS, SoM, SoED, SoH, SoC) (6hrs)

Research applications and trends in Social Sciences & Management; Qualitative case analysis; Reading and critical analysis of relevant literature; Acknowledgement of contributions, authorship issues, IPR, plagiarism; Research ethics & the Moral dilemma; Values and objectivity in Social Science research; Writing a research proposal

UNIT 5: RESEARCH APPLICATIONS (C-SoD & SoAP) (6hrs)

Research applications and trends in Design; Sources of data for research in creative Fields; Restoration, recreation and reporting; Reading and critical analysis of relevant literature; Acknowledgement of contributions, authorship issues, IPR, plagiarism; Research Ethics & the Moral Dilemma; Writing a Research proposal.

Recommended Books:

1. Kothari, C.R. (2014), Research Methodology (Methods and Techniques), New Age Publisher
2. George,D., Mallery, P. (2008). SPSS for Windows : Step by Step. Pearson Education
3. Srivastava, T. N., & Rego, S. (2010). Business Research Methodology. McGraw Hill
4. Brannen, J. (Ed.) (1992) Mixing Methods: Qualitative and Quantitative Research Theory and Practice
5. Montgomery, Douglas C. (2007), 5/e, Design and Analysis of Experiments, (Wiley India)
6. Montgomery, Douglas C. & Runger, George C. (2007), 3/e, Applied Statistics & Probability for Engineers (Wiley India)
7. Breakwell, G.M., Hammond, S., and Fife Schaw, C. (1995) Research Methods in Psychology. Sage
8. CRESWELL, J.W. (2012), 3rd Ed, Qualitative Inquiry and Research Design: Choosing Among Five Approaches, Sage
9. Corbin J & Strauss A (2014). Fourth Ed, Basics of Qualitative Research. Sage

10. Yin, R.K (2017). 6th Ed. Case Study Research: Design and Methods (Applied Social Research Methods). Sage
11. Broota K.D. (2016), Experimental Design in Behavioural Research New Age International Pvt. Ltd
12. Design Research - Issues & Perspectives" by Brenda Laurel (reference to be added)

Mode of Evaluation Assignments/Term Paper/Seminars/Written Examination/Publication

Examination Scheme:

<i>Components</i>	<i>Internal component</i>	<i>ESE–End Semester Examination</i>
Weightage (%)	20 (10 Theory+10 Practical)	80 (60 Theory+20 Practical)

Syllabus as per UGC

OBJECTIVE: This course has total 6 units focusing on basics of philosophy of science and ethics, research integrity, publication ethics. Hands-on-sessions are designed to identify research misconduct and predatory publications. Indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor, etc.) and plagiarism tools will be introduced in this course.

COURSE CONTENTS:

1. Pedagogy: Classroom teaching, guest lectures, group discussions, and practical sessions.
2. Evaluation: Continuous assessment will be done through tutorials, assignments, quizzes, and group discussions. Weightage will be given for active participation. Final written examination will be conducted at the end of the course.

RPE 01: PHILOSOPHY AND ETHICS (3 hrs.)

1. Introduction to philosophy: definition, nature and scope, concept, branches
2. Ethics: definition, moral philosophy, nature of moral judgments and reactions

RPE 02: SCIENTIFIC CONDUCT (5 hrs.)

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data

RPE 03: PUBLICATION ETHICS (7 hrs.)

1. Publication ethics: definition, introduction and importance
2. Best practices / standards setting initiatives and guidelines: COPE, WAME, etc.
3. Conflicts of interest
4. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types
5. Violation of publication ethics, authorship and contributorship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

PRACTICE RPE 04: OPEN ACCESS PUBLISHING (4 hrs.)

1. Open access publications and initiatives
2. SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies
3. Software tool to identify predatory publications developed by SPPU
4. Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggested, etc.

RPE 05: PUBLICATION MISCONDUCT (4hrs.) (A) Group Discussions (2 hrs.)

1. Subject specific ethical issues, FFP, authorship
2. Conflicts of interest
3. Complaints and appeals: examples and fraud from India and abroad

(B) Software tools (2 hrs.) :Use of plagiarism software like Turnitin, Urkund and other open source software tools

RPE 06: DATABASES AND RESEARCH METRICS (7hrs.)

(A) Databases (4 hrs.)

1. Indexing databases 2. Citation databases: Web of Science, Scopus, etc.

(B) Research Metrics (3 hrs.)

1. Impact Factor of journal as per Journal Citation Report, SNIP, SIR, IPP, Cite Score

2. Metrics: h-index, g index, i10 index, altmetrics

Mode of Evaluation Assignments/Class Tests/Seminars/Publications

Examination Scheme:

Components Internal component

ESE–End Semester Examination

Weightage (%) 50

50