Course Structure and Syllabi

Core Course : RP799: Research and Publication Ethics (L-2, T-0, P-0, CH-2, CR-2)

The course on Research and Publication Ethics be offered compulsorily to all Ph.D. students as course work of the Ph.D. programme w.e.f. the academic session 2020-21.

About the course:

The course has total of 6 units focusing on basics of philosopy 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.

Evaluation:

Continuous assessment will be done through tutorials, assignments, quizzes and group discussions. Weightage will be given for active participation. The final written examination will be conducted at the end of the course.

Unit 1: Philosophy and Ethics

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

Unit 2: Scientific conduct

1. Ethics concerning science and research
2. Intellectual honesty and research integrity
3. Scientific misconduct, falsification, fabrication and plagiarism
4. Redundant publications, duplicate and overlapping publications and salami slicing
5. Selective reporting and misrepresentation of data

Unit 3: Publication Ethics

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

Unit 4: Open access publishing

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 Suggester, etc.

Unit 5: Publication misconduct

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

Unit 6: Data Base and research Metrics

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, SJR, IPP, Cite Score
2. Metrics: h-index, g index, i10 index, altmetrics

References

Bird, A. (2006). *Philosophy of Science*. Routledge.

MacIntyre, Alasdair (1967) *A Short History of Ethics*. London.

P. Chaddah, (2018) Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN:978-9387480865

National Academy of Sciences, National Academy of Engineering and Institute of Medicine. (2009). *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*. National Academies Press.

Resnik, D. B. (2011). What is ethics in research & why is it important. *National Institute of Environmental Health Sciences*, 1–10. Retrieved from https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm

Beall, J. (2012). Predatory publishers are corrupting open access. Nature, 489(7415), 179–179. https://doi.org/10.1038/489179a

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

SECOND SEMESTER
CORE COURSES
Course Code: BA 581
Name of the Course: RESEARCH METHODS IN BUSINESS
(L 3-T 0-P 0 - CH 3 – CR 3)

UNIT 1: Introduction to Research

Introduction to Research and Statistics: Role of Research in Business, Value of information, Cost of information, Ethics in Research.
Research Process, Decision to undertake research, Introduction to Research Design, Types of research.

UNIT 2: Sources of Data

Sources of Data, Sources of Secondary data in India, How to evaluate sources of secondary data.
Scales of Measurement, Validity and reliability

UNIT 3: Methods of primary data collection

Observation: Different types of observation, Criteria of selection of an ideal method in different situations,Self Reported Data.
Qualitative Research Methods: Focus group, behaviour mapping, consumer journey, Delphi study, extreme users' interview
Quantitative Research Methods: Various types of Interviews: Mail Interview, Person to Person Interviews, Telephonic Interviews.
Data collection using electronic interface like the Internet.
Pilot survey and how to conduct one

UNIT 4: Questionnaire

Components of the questionnaire, steps in questionnaire design, Question content, Response format- Open ended question Vs. Multiple choice questions including various types for question formats. Question wordings – various principles thereof. Common blunders while designing Questionnaires, Creative questionnaire design.

UNIT 5: Sampling

Population defined, Sampling Frame, Sampling Vs. Census, Steps in selecting a sample.
Various types of Sampling Methods –
Probabilistic: Simple Random Sampling Stratified Random Sampling, Cluster Sampling.
Non Probabilistic: Convenience Sampling, Judgment Sampling and Quota Sampling. Dangers of using Non Probabilistic Sampling procedures.
Sample Size determination.
Concepts of errors in research – Sampling and Non sampling errors and measures to reduce errors.

UNIT 6: Data Analysis and Reporting

Introduction to Data Analysis, Introduction to SPSS package.
Data Processing: Editing, Coding, Decoding, and Data Entry
Hypothesis formulation. Hypothesis Testing, type I error, type II error
Univariate Data Analysis Techniques: t-test (independent sample t- test, one sample t-test)
Bivariate Data Analysis Techniques: Chi Square, Z- test for difference between means, Paired Sample T test (t- tests for difference between means)
Introduction to Multivariate Data Analysis Techniques
Research Report Writing: The format, Bibliography.

Text Book:

1. N K Malhotra: Marketing Research: An Applied Orientation, 5th edition, Prentice Hall

Reference:

1. R I Levin & D S Rubin : Statistics for Management, 7th Edition, Pearson.

9. DETAILED SYLLABUS

BT 710: Research Methodology **L2-T1-P1-CR4**

Course outcome

CO1: Ability to identify research problems, design experiments and carry out research
CO2: Ability to understand ethical concerns, research ethics and biosafety issues.
CO3: Ability to analysis of research articles and gain skills in technical writings.
CO4: Ability to write research proposals and grant applications.
CO5: Ability to use computation tools in their research area.

Course content

1. **Introduction to research methodology**: Scope

2. **Methods of Research:** survey, observation, case study, experimental, historical and comparative methods, Difficulties in Biological research Literature review

3. **Research problem:** defining the research question, identification, selection, formulation of research objectives

4. **Research design:** Components and Importance, Documentation, presentation and analysis of data: Types of data, Data collection, Methods and tools of data collection, presentation of data, analysis and interpretation of data

5. **Ethics in research**: Institutional ethical committee for human and animal research

6. **Biosafety:** Guidelines for Biosafety, Institutional Biosafety committee and its role

7. **Plagiarism** - Research ethics, Pitfall, Software for Plagiarism

8. **Patents and IPR**: Patent laws, process of patenting a research finding, Copy right, Cyber laws

9. **Research funding**: A brief idea about the funding agencies such as DST, DBT, ICMR, CSIR, UGC, ICAR, International funding

10. **Technical Writing**: Writing of Research Proposal and Report, Manuscript preparation Quantitative Data Analyses

11. **Hypothesis testing:** Normal and Binomial, poisson distributions and their property. Tests of significance: Student t – test, F- test, Chi – square test Correlation and Regression ANOVA –One - way and Two - way, Multiple - range test

Practical

Computer Fundamentals

Introduction to spread sheet application, features and functions, Using formulas and functions, Data storing, Generating charts/ graph and other features. Statistical data analysis using software like Microsoft Excel, Origin etc

Textbooks:

1. Ranjit Kumar, Research methodology: A step by step guide for beginners, 2nd edition, SAGE Publications Ltd., 2005.
2. John W. Creswell, Research Design: Qualitative, Quantitative, and mixed methods approaches , 2nd edition, SAGE Publications, 2009.

Suggested Readings

1. Petter Laake, Haakon Breien Benestad and Bjorn Reino Olsen, Research Methodology in the Medical and Biological Sciences,1st edition, Academic Press, 2007.

Analysis of Variance and Co-variance ANOVA, One way ANOVA, Two Way ANOVA, ANOCOVA Assumptions in ANOCOVA. Basics of computational chemistry.

Seminar **[7 Lectures]**

Seminar presentation

Text Books:

1. C. R. Kothari, "Research Methodology", 2nd Ed. Wiley Eastern, New Delhi, 1985.

2. Ranjit Kumar, "Research Methodology-A step by step guide for beginners", 2nd Ed. Pearson Education, 2005.

Reference Book

1. John W Best, V. Kahn, *"Research in Education", 8th Ed. PHI Publication,* 1998.

2. K.N. Krishna swami and others, *"Management Research Methodology-Integration of principles, methods and Techniques", 1st Ed. Pearson Education,* 2009.

RP 799 Research and Publication Ethics L 1 T 0 P1 CR 2

Course outcomes:

Dept. of Chemical Sc.

On completion of this course the students will be able to learn:

CO1: Basics of philosophy of science and ethics, research integrity, publication ethics

CO2: Identification of research misconduct and predatory publications

CO3: Indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor, etc.)

CO4: Plagiarism tools and their use

CO5: Communication of research finding without ethical violation

Social work

SW 701- Advance Research Methodology **L -T- P- Cr.**

3 -1- 0 – 4

The aim of this course is to develop advance knowledge and skills in quantitative and qualitative research methodology. It will emphasize on understanding the paradigm of quantitative/qualitative research methodology and the various steps in conducting scientifically well formulated research study and analysis.

The course would introduce the students to the broad epistemological and methodological issues in social sciences. This course will provide an opportunity for students to establish and advance their understanding of research through critical exploration of research language, approaches and ethics. The focus will be on formulation of research topic, how to collect data, critically analyse them and how best to test their veracity and reliability keeping in view both the realistic and normative dimensions of social science research.

The basic and advance statistical methods will enable the scholars to conceptually understand quantitative research methodology and use of statistical methods to interpret the data. It will also enhance the scholar's critical thinking of various issues arise out of statistical analysis when trying to draw conclusions from such results.

Learner Objectives After completing this course, the scholars will be able to: a) conduct a well formulated quantitative study b) design research based upon the research question c) test hypotheses by conducting descriptive and inferential statistical analysis using various statistical tests: d) use appropriate sampling strategy e) conduct basic and advanced statistical analysis and infer results from statistical tests.

Objectives:

1. Develop foundational knowledge of key social science research methods
2. Develop research questions and apply appropriate methods for research
3. Develop competence in conceptualizing, designing and implementing research using quantitative and qualitative paradigms and techniques.
4. Learn to conduct basic and advanced statistical analysis and infer results from statistical tests.

Course Contents:

Unit I: Foundation to Research.

- Scientific approach of Social research: Cause and effect relationship: General principles in detecting causal relations and Mill's Canons.
- Basic elements of Social research: Concept and hypothesis, abstraction, conceptualization, reconceptualisation and reffication. Variables, propositions; ethical issues in social research.
- Concept of theory, empiricism, deductive and inductive theory. Importance of theories and facts in research
- Scientific Enquiry in Social Work Research: Scope and Emerging Areas
- Measurement in Social Research.

Unit II: Research Methodology.

- Research Design: Types and Importance of research design.
- Sampling: Population/Universe, probabilistic and non – probabilistic sampling; sample size determination; Sampling and non-sampling errors,
- Methods and tools of data collection: Source of Data; Secondary and Primary,
- Scaling: meaning, advantage and qualities of scales, types; Likert Scale, Thurstone Scale, Bogardus Scale, Guttman Scale, Sociometry. Construction of rating scales and attitude scales. Internal consistency of the items and Cronbach alpha coefficient, Reliability and validity.
- Mixed method approach, different types of mixed method designs

Unit-III: Qualitative Research Methods and Ethics

- Research topic selection, literature review
- Quantitative vs. Qualitative
- Research topic: Problem formulation, Research and sampling Design, Types of approaches – Narrative, phenomenological, grounded theory, ethnographic, case study, Action Research, Mixed-methods, Longitudinal, Content Analysis
- Designing Tools of Data Collection
- Data Sources: Interviews, Focus groups, observations, approaches to analysis of data
- Collection and Organization of Qualitative data –coding, content analysis
- Publishing Research: Types of Publications-Research papers, Thesis, Research Project Reports
- Referencing : Different Styles
- Ethical Issues : Ethical Committees, Code of Conduct and Legal Issues, Ethical Practices and Principles, Plagiarism

Unit IV: Basic Statistics and Statistical Methods

Schutz, A. (1967). *The phenomenology of the social world.* Evanston: Northwestern University Press.

Simmel. G. (1971). On *individuality and social self.* Chicago: University of Chicago Press.

Turner, V. W. (1995). *The Ritual Process: Structure and Anti-Structure.* Oxford: Routledge

Veena Das *et al*. (2000). *Violence and subjectivity*. Berkeley: California University Press.

Weber, M. (2013). *Economy and society.* Volume 1. Berkeley: University of California Press.

Sociology

SC 732 Research Methodology **(L3 - T1 - P0 - CH 4 - CR 4)**

Course Outcome

CO 1: To critically engage with the philosophical debates in social science research
CO 2: To reflexively locate ones' epistemological and ontological positions while doing research
CO 3: To critically engage with the emerging methods of data collection & analysis and apply it in their research process
CO 4: To design and conduct ethnographic research and social surveys
CO 5: To address ethical issues in designing, conducting, and writing research reports

Course Content

Unit I: Philosophy and Approaches

a) Epistemology and Ontology
b) Objectivity and Subjectivity
c) Feminist and subaltern critique
d) Decolonising Methodology

Unit II: Ethnography

a) Meanings as Objects of Study
b) Ethnographic Method and Writing
c) Ethnographic Representation

Unit III: Quantification in Social Sciences

a) Statistics- Applications
b) Descriptive and Inferential Statistics
c) SPSS
d) Statistics – Limitations

Unit IV: Methods of Doing Research

a) Ethics, Politics and Culture in Research
b) Interviewing: Structured and Unstructured

PH.D. in Education

Tezpur University, Assam

Course Code: CPE- RPE

Course Title: Research and Publication Ethics

L	T	P	CH	CR
2	0	0	2	2

The present two credit course is approved by University Grants Commission (UGC) and is mandatory for all Ph.D. research scholars. The syllabus has been designed by UGC to create awareness about publication ethics and publication misconducts to maintain intellectual honesty and research integrity.

LEARNING OUTCOMES OF THE COURSE:

After completion of the course, it is expected that the research scholars will be able to –

1. Describe the philosophy of science and ethics.
2. Explain publication ethics and research integrity.
3. Differentiate between scientific conduct and misconduct and maintain intellectual honesty in their research work.
4. Use software such as Turnitin, Urkund etc. to check plagiarism and use other open-source software tools.
5. Identify predatory publications and explain indexing, citation databases, and research metrics.

Overview

- 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.

Pedagogy:

- Classroom teaching, guest lectures, group discussions, and practical sessions.

Evaluation

- Continuous assessment will be done through tutorials, assignments, quizzes, a group discussions. Weightage will be given for active participation. Final writ examination will be conducted at the end of the course.

Course structure

- The course comprises of six modules listed in table below. Each module has 4-

Modules	Unit title	Teaching hour
Theo		
RPE 01	Philosophy and Ethics	4
RPE 02	Scientific Conduct	4
RPE 03	Publication Ethics	7
Practice		
RPE 04	Open Access Publishing	4
RPE 05	Publication Misconduct	4
RPE 06	Databases and Research Metrics	7
	Total	30

COURSE CONTENT:

THEORY

- **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 judgements and reactions
- **RPE 02: SCIENTIFIC CONDUCT (5hrs.)**
  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 Suggester, 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.