

K. R. Mangalam University, Gurugram
Syllabus (Pre-Ph.D. Courses Work)
2021-22

PPHD901A	RESEARCH METHODOLOGY	L	T	P	C
		4	-	-	4

Unit I: Basic Concepts in scientific approach to research

Definitions and types of research; Research process and steps in conducting research; Planning research – Preparing the Research Proposal, Elements of Research Proposal, Evaluating Research Proposal; Problem identification and formulation; Research design; Applications and role of Research in nation's development.

Unit II: Research Modelling

Observation and Data collection methods; sampling, types of sampling; sample size, advantage and limitations of sampling and associated errors.

Report writing: pre writing consideration; formulation of research projects / proposals; types of reports & research articles, bibliography; criterion for a 'good report'.

Unit III: Research Ethics & Plagiarism

Values, standards & practices, scientific misconduct; *Falsification, Fabrication; Questionable Research practices*, authorship allocation of credit, commitments & values.

Definition & types of *plagiarism*, unintentional plagiarism, mechanisms for avoiding plagiarism.

Unit IV: Invention, Innovation, IPR.

Understanding *Creativity, Invention & Innovation* and its role in economic development; importance & basics of *Intellectual Property Right (IPR), Copyrights, Trademarks*; what can and cannot be protected.

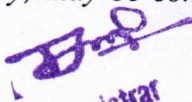
Brief account of International conventions relating to Intellectual Property – **WIPO, GATT.**

An overview of '*Research in India : Strengths & challenges.*

Note : In the backdrop of the above, the assignments may be in the context of the chosen research field of the scholar, and may be designed to facilitate in identity the topic and in the process of Synopsis preparation for their respective prospective proposed research. The work out format for the assignments must be intensively participatory; may be conducted by way of presentations and participative discussions in class.

TEXT BOOKS AND REFERENCES:

1. C.R. Kothari , Research Methodology Methods and Techniques – Vishwa Prakashan Publisher


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2. *Research Methodology Methods and Techniques* – C.R. Kothari, New Age Intl. Pub. (2004)
3. *Research Methodology (Concept and Cases)* – Deepak Chawla & Neena Sodhi, Vikas Publication House (P) Ltd. (2011)
4. *Research Methodology* - Dr. Debashis Chokarvaty, Surbhi (P) Ltd. (2010)
5. *Research Methodology* - Navin Sharma, Deep & Deep (P) Ltd. (2007)
6. Ranjit Kumar (2006), *Research Methodology*, Delhi Pearson Education
7. “*The Role of Invention, Innovation And The Industrial Property System in Economic Development*” available at the website :

www.wipo.int/cdocs/mdocs/innovation/en/.../wipo_inn_cai_97-1.doc
8. Joseph Gibaldi (1999 15th edition), *MLA Handbook for Writers of Research Papers*, New Delhi, Affiliated East West Press.
9. “*On being A Scientist: A guide responsible conduct in research*” National Academies Press (2009)


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PPHD903A	QUANTITATIVE TECHNIQUES	L	T	P	C
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UNIT I

Nature and scope of quantitative analysis, Developing a model, Quantifying the model and the solution, Variables and functions – Polynomial, Trigonometric, Exponential and Logarithmic functions, Measures of central tendency, Measures of dispersion

UNIT II

Introduction of probability theories and concepts, Probability distributions- discrete and continuous probability distributions, Measures of association- Correlation and Regression, Hypothesis testing - Parametric tests (Z-test, t-test, F-test) and Non-parametric Tests (Chi-Square Test, ANNOVA), Tests of significance based on normal distributions

UNIT III

Advance multivariate analysis - Discriminant Analysis, Cluster Analysis, Factor Analysis and Conjoint Analysis, Uses and methods of constructing Index Numbers, Types and methods of forecasting, Time series analysis

UNIT IV

Introduction to spread-sheet applications, Using formulae & functions, Generating charts/graphs & other features, Creating and customizing presentation, Use of internet and search engines, Advanced search tools, Introduction to data analysis software - SPSS

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PPHD905A	LITERATURE SURVEY (in relevant research area)	L	T	P	C
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UNIT I: Understanding Literature Survey

What is Literature Survey? Scope of Search; Sources for search – print vs online (Google Scholar, journals, search engines, databases, patents etc.); How to search for the literature? Decide on broad areas of research.

UNIT II: References and Bibliography

Develop a bibliography – Collect papers/articles/reports/patents/published or unpublished research dissertations/thesis etc. in the broad areas of research; select references; classify into sub areas; chronological developments.

UNIT III: Review of Literature collected

Find relevant excerpts in references collected in the broad area(s); Identify general results, current status, trends, future scope and controversial issues; Identification of research topics. Learn Reference writing and citation styles; Structure into a Review Report.

UNIT IV: Literature Review paper

How to write a paper for publication in journals? Research paper formats; Structure of a Literature Review Paper; Prepare a concept paper/working paper/review paper based on at least 50 references collected; oral presentation of research – tools & techniques.

Note: In this course, student has to give a presentation of progress once every 30 days. The day of presentation will be decided by SRC. At the end of semester, student will be required to submit a Literature Review Report and present the work to the SRC. The report should include (i) Review of Literature, references, bibliography, (ii) draft of a review paper for publication and (iii) Research Problem statement. The evaluation will be based on all of above.

[Handwritten Signature]
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ज्ञान-विज्ञान विमुक्तये

प्रो. रजनीश जैन
सचिव

Prof. Rajnish Jain
Secretary



सत्यमेव जयते

विश्वविद्यालय अनुदान आयोग
University Grants Commission

(मानव संसाधन विकास मंत्रालय, भारत सरकार)
(Ministry of Human Resource Development, Govt. of India)

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D.O.No.F.1-1/2018(Journal/CARE)

December, 2019

Respected Sir/Madam,

University Grants Commission in its 543rd meeting held on 9th August, 2019 approved two Credit Courses for awareness about publication ethics and publication misconducts entitled "**Research and Publication Ethics (RPE)**" to be made compulsory for all Ph.D. students for pre-registration course work (**attached as Annexure**).

In view of the above, you are requested to ensure that the above two Credit courses may be made compulsory for all Ph.D. students for pre-registration course work undertaken in your University from the forthcoming academic session.

With regards,

Yours sincerely,

(Rajnish Jain)

TO THE VICE-CHANCELLORS OF ALL UNIVERSITIES


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ANNEXURE

Course Title:

- **Research and Publication Ethics (RPE)**-Course for awareness about the publication ethics and publication misconducts.

Course Level:

- 2 Credit course (30 hrs.)

Eligibility:

- M.Phil., Ph.D. students and interested faculty members (It will be made available to post graduate students at later date)

Fees:

- As per University Rules

Faculty:

- Interdisciplinary Studies

Qualifications of faculty members of the course:

- Ph.D. in relevant subject areas having more than 10 years' of teaching experience

About the course

Course Code: CPE- RPE

Overview

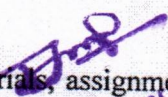
- This course has total 6 units focusing on basics of philosophy of science and ethics, research integrity, publication ethics. Hands-on-sessions are designed to identify research misconduct and predatory publications. Indexing and citation databases, open access publications, research metrics (citations,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

Pedagogy:

- Class room teaching, guest lectures, group discussions, and practical sessions.

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.


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Course structure

- The course comprises of six modules listed in table below. Each module has 4-5 units.

Modules	Unit title	Teaching hours
Theory		
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

Syllabus in detail

THEORY

- RPE 01: PHILOSOPHY AND ETHICS (3 hrs.)**

- Introduction to philosophy: definition, nature and scope, concept, branches
- Ethics: definition, moral philosophy, nature of moral judgements and reactions

- RPE 02: SCIENTIFIC CONDUCT (5hrs.)**

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

- RPE 03: PUBLICATION ETHICS (7 hrs.)**

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

PRACTICE

- RPE 04: OPEN ACCESS PUBLISHING(4 hrs.)**

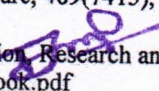
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1. Open access publications and initiatives
 2. SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies
 3. Software tool to identify predatory publications developed by SPPU
 4. Journal finder / journal suggestion tools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


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Evaluation Pattern for Pre-Ph.D. Course-Odd Semester 2021-22

- PPHD901A Research Methodology
- PPHD903A Quantitative Techniques

The evaluation will consist of the following components and marks:

S. No.	Examination	Marks
1	Assignments/ Presentations / Test, etc. (by December-2021 end)	40
2	End term Written Exam (by January-2022 end)	50
3	Attendance	10
	Total Marks	100

- PPHD905A Literature Survey:

The evaluation will be based upon the presentation of literature survey before SRC twice in a semester. Evaluation will consist of the following components and marks:

S. No.	Presentation before SRC in 8-Jan-2022	Marks
1	Presentation	20
2	Literature review report	10
3	Viva voce	10
	Total	40
S. No.	Final Presentation before SRC in 22-Jan-2022	Marks
1	Presentation	20
2	Literature review report	15
3	Viva voce	15
4	Attendance	10
	Total	60
	Grand Total	100

- PPHD907A Research and Publication Ethics:

For evaluation pattern see PDF file 2_PPHD907A_Research-and-Publication-Ethics_2021-22


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