

## Ph.D. COURSE WORK

### STRUCTURE OF Ph.D. COURSE WORK

| Course   | Particulars                           | Hrs. of Instruction per week | Duration of Exam. (hrs.) | Marks |              |            |           |
|----------|---------------------------------------|------------------------------|--------------------------|-------|--------------|------------|-----------|
|          |                                       |                              |                          | IA    | Theory       | Total      | Credits   |
| Course 1 | Research Methodology                  | 4                            | 3                        | 30    | 70           | 100        | 4         |
| Course 2 | Research and Publication Ethics (RPE) | 2                            | 3                        | 30    | 70           | 100        | 2         |
| Course 3 | Review of Literature                  | 14                           |                          |       |              |            |           |
|          | Review report view                    |                              | -                        | -     | -            | 150        | 6         |
|          | Viva                                  |                              | -                        | -     | -            | 50         | 2         |
|          |                                       |                              |                          |       | <b>Total</b> | <b>400</b> | <b>14</b> |



## SYLLABUS FOR Ph.D. COURSE WORK

### PAPER-1: RESEARCH METHODOLOGY

**Pedagogy:** Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work.

#### **Course Objectives:**

1. To introduce the concept of research methodology.
2. To enable the research scholars with the basic practices and procedures.
3. To familiarize the recent trends in research methodology.
4. To facilitate research scholars with advanced research methods.
5. To provide multidisciplinary input required for research.
6. To prepare research scholars for independent research work.
7. To prepare research scholars for post- doctoral research work.

#### **Course outcomes:**

1. Acquire knowledge on the evolution of research methodology.
2. Have understanding about the techniques of research.
3. Be able to solve the problems research.
4. Understand the challenges in the changing research techniques.
5. Comprehending & correlating advance research methods.
6. Understand the practical applications.
7. Researcher is able to use scientific tools and techniques in business research.

#### **Unit I**

The Role of Research – Types of Research – Theory Building - Goals of theory - Meaning of Theory – Verifying theory – Scientific Method in theory building.

#### **Unit II**

An overview of Research process – Problem definition in different types of research - Stages in research process – Qualitative and quantitative research methods.

#### **Unit III**

The Nature of qualitative research - Basic terms and criteria for using qualitative research methods - Methods of collecting qualitative data: Observation methods, Personal interview method, Depth interview, Focus group method, the case study method, ethnography, grounded theory analysis - Content analysis, thematic analysis, narrative analysis, critical management research, projective techniques, Socio-metric analysis, Afterthoughts on qualitative research.

#### **Unit IV**

Literature Review: the process of literature review, literature survey, practical sources of literature, constructing conceptual framework for research based on literature, essentials of writing a good literature review, writing of abstracts.

#### **Unit V**

Research Designs: Experimental Research Designs - Meaning of Experiment, Causality, Necessary Conditions for Making Causal Inferences, Concepts used in Experiments, Validity in Experimentation, Definition of symbols, Factors affecting Internal Validity of the Experiment, Factors Affecting External Validity, Methods to control Extraneous Variables, Environments of Conducting Experiments. A Classification of Experimental Designs: Pre –

experimental design; Quasi- experimental designs; True experimental designs; Statistical designs. Exploratory research design

#### **Unit VI**

Collection of Data: Types and sources of data, relative merits of each type of data- Survey research – definition, advantages, structured and disguised data collection, the influence of technology on survey research; Obtrusive and Unobtrusive methods: observation of behaviour of people and objects – physical activity and evidence, verbal behaviour – expressive behaviour – special relations & locations - Classification, codification and tabulation of data.

#### **Unit VII**

Questionnaire design- questionnaire contents and its design; Scaling techniques- Measurement and Attitude Scaling - Types and levels of measurement - An overview of different scaling techniques – Pilot study and Pre-testing – objects, process and their significance.

#### **Unit VIII**

Sample and sampling – Sample Vs population – Need for sample – Different methods of sampling - Suitability of each of these types and methods – Sampling & non-sampling errors – Sample size & its determination - Estimation – types, criteria, calculation of Interval estimates, Interval estimation and confidence intervals, determining the sample size in estimation.

#### **Unit IX**

Hypothesis - types of hypothesis - formulation of hypothesis - procedure for testing hypothesis - testing for means, difference between means, proportion testing and variance testing.

#### **Unit X**

Hypothesis testing techniques - Chi square test - Goodness of fit test - scope and limitations, applications - Analysis of Variance - its applications, One-way and Two-way ANOVA - Multiple regression and correlation analysis (three variables only); non-parametric tests – Runs test, Kolmogorov-Smirnov test; Kruskal-Wallis test; Mann-Witney's U test; Ranks test and other important tests.

#### **Unit XI**

Multivariate analysis - Meaning of Multivariate analysis - Multivariate data analysis - Multivariate analysis techniques - Multiple regression analysis - Logistic regression analysis - Cluster analysis - Discriminant analysis - Multivariate analysis of variance (MANOVA) - Multidimensional scaling (MDS) - Correspondence analysis - Conjoint analysis - Canonical correlation - Structural equation modelling.

#### **Unit XII**

Basics of Vectors- Eigen vectors, mean vectors and co-variance matrix – transpose of a matrix, matrix inverse.

Principal Component Analysis- Principal Components, correlation and co-variance matrix techniques for principal components.

#### **Unit XIII**

Factor Analysis- The Concept of Error, the Common Factor Model, Reliability, Communality - Common Factors, Specific Factors, Estimating Reliabilities, Iterating to Stable Communalities - Kaiser's Alpha Factor Analysis (the Little Jiffy) - Guttman's Image Covariance Analysis- Rao's Maximum Likelihood Factor Analysis.

#### **Unit XIV**

Basic concepts of SPSS and Data analysis with SPSS - What is SPSS - Basis operations in SPSS - Generating a frequency table - Generating a bar chart - Generating a Pie chart -

Generating a Histogram -Generating Arithmetic mean, median, standard deviation and range  
- Generating Chi square test and correlation analysis -Generating ANOVA test and Regression analysis.

#### Unit XV

Research Report writing - planning and organizing – Format - writing styles – various style manuals (referencing styles) - documentation – Outline of a report on the research project.

#### References:

1. Zikmund. *Business Research Methods*, Thomson Learning, New Delhi.
2. Levin & Rubin. *Statistics for Management*, Pearson Education, New Delhi.
3. Srivastava U.K., Shenoy G.V & Sharma S.C, *Quantitative Techniques for Managerial Decisions*, New Age International (P) Ltd. Publishers.
4. Gupta S.P., *Statistical Methods*, Himalaya Publishing House, Mumbai.
5. Cooper D.C. & Schindler P.S, (2013), *Business Research Methods*, McGraw-Hill Education - 12th edition
6. Wilkinson & Bhandarkar. *Methodology and Techniques of Social Research*, Himalaya Publishing House, Mumbai.
7. Young P.V., *Scientific Social Surveys and Research*, Prentice-Hall of India Pvt.Ltd., New Delhi.
8. Krishnaswamy O.R., *Research Methodology*, Himalaya Publishing House, Mumbai.
9. Cooper D.C. & Emory C.W., *Business Research Methods*, McGraw-Hill Publishing House, Delhi.
10. Rencher C Alvin and Christensen F William- *Methods of Multivariate Analysis*, Wiley and Sons.
11. Neil H. Timm, *Applied Multivariate Analysis*, Springer.
12. Dennis Child, *The Essentials of Factor Analysis*, Continuum International Publishing Group.
13. Deepak Chawla and Neena Sondhi, *Research Methodology: Concepts and Cases*, Vikas Publishing House Pvt Ltd.
14. Harman, H.H., (1976), *Modern Factor Analysis, Third Edition*, Chicago: University of Chicago Press.
15. Jolliffe, I. T., (2002) *Principal Component Analysis, Second Edition*, Springer
16. Tsay, Ruey S. (Spring Quarter 2008), *Lecture 6: Principal Component Analysis*, Graduate School of Business, The University of Chicago
17. Stevens, J. (1996). *Applied multivariate statistics for the social sciences*, Mahwah, NJ: Lawrence Erlbaum Publishers.
18. Tabachnick Barbara G., *Using Multivariate Statistics*, Pearson publication-Fifth Edition
19. Anderson, Carolyn J., *Principal Components Analysis*, Edps/Soc 584 and Psych 594. *Applied Multivariate Statistics*, Department of Educational Psychology, University of Illinois
20. Ranjit Kumar, (2014), *Research Methodology: A step-by-step guide for beginners-III edition*, SAGE Publication India Pvt Ltd.
21. Helen Mongan Rallis, (2014), *A Step-by-step guide for writing a literature review*.

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## **Paper II: Research and Publications Ethics**

**Pedagogy:** Class room teaching, guest lectures, group discussions and practical sessions.

### **Course Objectives:**

1. To introduce the concept of research and publication ethics.
2. To enable the research scholars with the basic ethical practices.
3. To familiarize the recent trends in research ethics.
4. To create an understanding of ethical issues in research publications.
5. To provide knowledge on predatory publications and their implications.
6. To prepare research scholars to use databases and research metrics
7. To prepare research scholars to conduct research work with ethics.

### **Course outcomes:**

1. Acquire knowledge on the ethical issues in research.
2. Have understanding of the research ethics
3. Be able to incorporate ethical norms in research publications.
4. Understand the challenges of scientific misconducts.
5. Able to identify predatory publishers and journals.
6. Understand the practical applications.
7. Researcher is able to visualize intellectual honesty and research integrity.

### **Overview**

This course has total 6 units focusing on basics of Philosophy of Science and Ethics. Research Integrity, Publications Ethics. Hands-on-session 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.

### **Unit I: Philosophy and Ethics (3 hrs.)**

- a) Introduction to philosophy: definition, nature and scope, concept, branches
- b) Ethics: definition, moral philosophy, nature of moral judgments and reactions.

### **Unit II: Scientific Conduct (5 hrs.)**

- a) Ethics with respect to management studies and research
- b) Intellectual honesty and research integrity
- c) Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP)
- d) Redundant publications: duplicate and overlapping publications, salami slicing
- e) Selective reporting and misrepresentation of data

### **Unit III: Publication Ethic (7 hrs.)**

- a) Publication Ethics: definition, introduction and importance

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

## **PRACTICE:**

### **1. Open Access Publishing (4 hrs.)**

- a) Open access publications and initiatives
- b) SHERPA / RoMEO online resource to check publisher copyright & self-archiving policies
- c) Software tool to identify predatory publications developed by SPPU
- d) Journal finder / journal suggestion tool viz., JANE, Elsevier Journal finder, Springer Journal Suggester, etc.

### **2. Publication Misconduct (4 hrs.)**

#### **A. Group Discussions (2 hrs.)**

- a) Subject specific ethical issues, FFP, authorship
- b) Conflicts of interest
- c) Complaints and appeals: example and fraud from India and abroad)

#### **B. Software tools (2 hrs.)**

Use of plagiarism software like Turnitin, Urkund and other open source Software tools

### **3. Databases and Research Metrics (7 hrs.)**

#### **A. Databases (4 hrs.)**

- a) Index database
- b) Citation database: Web of Science, scopes, etc.

#### **B. Research Metrics (3 hrs.)**

- a) Impact factor of Journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score
- b) Metrics: h-index, g index, i10 index, altmetrics.

## References:

1. Bird, A. (2006). Philosophy of Science. Routledge.
2. MacIntyre, Alasdair (1967) A Short History of Ethics, London.
3. P. Chaddah, (2018) Ethics in Competitive Research: Do not get scooped: do not get plagiarized, ISBN:978-938780865
4. National Academy of science, 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.
5. Resnik, D.B (2011). What is ethics in research & why is it important. National Institute of Environmental Health Science. 1-10. Retrieved from <https://www.niehs.nih.gov/research/resource/bioethics/whatis/index.cfm>
6. Beall, J. (2012) Predatory publishers are corrupting open access, Nature, 489(7415), 179-179.  
<https://doi.org/10.1038/489179a>
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](http://www.insaindia.res.in/pdf/Ethics_Book.pdf)

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## Paper -III: Review of Literature

**Pedagogy:** Class room teaching, guest lectures, group discussions, practical sessions and independent analysis of existing literature.

### Course Objectives:

1. To give knowledge on importance of literature review in research.
2. To enable the research scholars to find out research gap.
3. To familiarize the recent trends in the area of research.
4. To create an understanding of various research techniques.
5. To provide knowledge on different techniques of analysis
6. To prepare research scholars to use databases and research publications.
7. To prepare research scholars to conduct independent research work.

### Course outcomes:

1. Acquire in depth knowledge on the research topic.
2. Have understanding of the research techniques.
3. Be able to incorporate various research techniques
4. Understand and identify the research gap in the area of research.
5. Able to critically analyse the existing literature.
6. Understand the practical applications.
7. Researcher is able to undertake independent research.

The Review of Literature shall be in the area of Research topic chosen by the Research candidate related to Finance, Accounting, Information Technology, H.R.M., H.R.D., Banking and Insurance, Marketing, Development Issues, Third Sector, Micro, Small and Medium Enterprises and other interdisciplinary areas in consultation with the guides.

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