

Course Work – 1	RESEARCH METHODOLOGY	Credit 4
21PEYH0101		

Unit I : Location and Selection of Problem: Examining Assumptions, Anticipating the Outcome of Inquiry, Types of Research - Basic, Applied and Action research - Major approaches: Normative, Functional, Dialectical, Critical Evaluation and Synthesis - Content Analysis: Longitudinal Study, Cross Sectional Study, Quasi experimental, placebo design - Trends Report - Hybrid Study of Cross-sectional and longitudinal Study

Unit –II Descriptive research: Nature and Scope of Descriptive Research Criteria: Areas and levels - Construction of Theoretical Frame Work, Formulation of Research Design, Survey Studies - Planning and Conducting Interviews – Observation Studies. Item Analysis, Content Analysis, Projective Technique, Scaling Technique - Analysis and Presentation of Information Assessment and Evaluation of Descriptive Research

Unit - III Design and Sampling

An introduction to Ex-post Facto and Experimental Research, Laboratory Experiment and Field Experiment - Experimental and Ex-post Facto Research as Differentiated from other types of researches

Post test only design

Pre Test and Post Test Design for Single Group

Pre Test and Post Test Design for Multi-group

Repeated Measure Design for Single group

Repeated Measure Design for Multi group

Matched Group Design for Post Test Only

Matched Group Design for Pre and Post-Test

Matched Group Design for Pre and Post Test for Multiple Group

Sampling: Characteristics, Principles, criteria for selection, types of sampling techniques: probability and non-probability sampling.

Unit – IV Experimental Research

Test Construction and Selection in Experimental Research - Relationships and Comparative Studies in Experimental Research - Control of Experimental Variables /groups, Control Groups and Factors Affecting Experimental Outcome - Establishing the Various Types of Experimental Research Laboratory in relation to the sports field & facilities.

Unit –V

Statistical Concepts – Statistics – types of Statistics – Scale of Measurements - data – normality of data – normal curve - type I ,II, III & IV errors - Level of significance - Relationships

among Variables - Coefficient of Correlation - Partial Correlation - Uses of Semipartial Correlation - Procedures for Multiple Regression Differences Among Groups – Types of t test - Analysis of Variance - Analysis of Covariance - Repeated Measures – Non parametric Techniques - Chi-Square - Standard scales.

References:

1. Broota K.D. (1989), Behavioural Research, New Delhi; Wiley Eastern Limited, IBN:8122402151.
2. David H Clarke and Clarke H Harrison.(1972), Advanced Statistics, New Jersey, Prentice Hall Inc.
3. David H.Clarke and H.Harrison Clarke, (1970), Research Process in Physical Education (2ED), New Jersey, Englewood Cliffs, Prentice-Hall, INC.ISBN:0137745133.
4. Fruederick, L.(1950), The Elements of Research, New York, Prentic Hall, Californi.
5. Garret E. Harry and Woodworth N.S. (1958), Statistics in Psychology and Education, Bombay Allied Publications Private Ltd.
6. Harry E. Garre, (1958), Statistics in Psychology and Education, Bombay: Allied Private Ltd.
7. Jerry R.Thomas and Jack K.Nelson, (1996), Research Methods in Physical Activity (3 ED), Human kinetics, ISBN-0880114819.
8. Jerry R.Thomas and Jack K.Nelson, (2005), Research Methods in Physical Activity (4 ED), Human kinetics, ISBN-13: 978-0736036924, ISBN-10: 073603692X
9. Jerry R.Thomas, Jack K.Nelson and Stephen J. Silverman, (2015), Research Methods in Physical Activity (7 ED), Human kinetics, ISBN-13: 9781450470445.
10. Jim Albert, Mark E.Glickman, Tim B.Swartz and Ruud H.Koning, (2016), Handbook of Statistical Methods and Analyses in Sports, Chapman and Hall/CRC.
11. John W Best & James V. Kahn, (1992), Research in Education, New Jersey, Prentice Hall Inc.
12. Kothari C.K. (1993), Research Methodology Methods and Techniques, New Delhi; Wiley Eastern Ltd.
13. Manilal K.P. and Lakshmeesha. Y.S. (2003), Writing Thesis Format & Style for Physical Education and Sports Sciences, Bangalore, Adprints & Publishers.
14. Neilson N.P. (1960), An Elementary course in Statistics Test and Measurements in Physical Tests, Polo Alto, California.
15. Thomas A. Severini, (2014), Analytic Methods in Sports: Using Mathematics and Statistics to Understand Data from Baseball, Football, Basketball, and Other Sports, Chapman and Hall/CRC.
16. Tuckman.B.W.,(1999), *Conducting Educational Research*, (5ED), Orlanto, Harcourt Brace Publishers.
17. Verma J.Prakash, (2000), A Text Book on Sports Statistics, Gwalior, Venus Publication, ISBN:81876450302.
18. William A.Pitney and Jenny Parker, (2009), Qualitative Research in Physical Activity and the Health Professions, Human kinetics, ISBN-13: 9780736085441.

Journals:

1. Educational Action Research

2. Educational Researcher
3. Heart & Lung: The Journal of Acute and Critical Care
4. International Journal of Qualitative Methods
5. International Journal of Qualitative Studies in Education
6. Journal of Quantitative Analysis in Sports
7. Journal of Applied Statistics
8. Journal of Computational Statistics & Data Analysis
9. Journal of Multivariate Analysis
10. Journal of Educational and Behavioral Statistics

Website:

1. <https://explorable.com/research-methodology>
2. <http://study.com/academy/lesson/research-methodology-approaches-techniques-quiz.html>
3. https://www.slideshare.net/sh_neha252/research-methodology-4821125
4. <https://www.ons.gov.uk/>
5. <http://www.worldofstatistics.org/>
6. <http://senseaboutscienceusa.org/stats/>
7. <https://www.statistics.com/>

Course Work – 4 21PEYH0104	RESEARCH AND PUBLICATION ETHICS	Credits 2
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Unit - I 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 - II 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

Unit - III 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

Unit - IV OPEN ACCESS PUBLISHING (4 hrs.)

1. Open access publications and initiatives.
2. SHERP N R O M E O 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 - V 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

Unit - VI 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.