

DEVI AHILYA VISHWAVIDYALAYA, INDORE  
SCHOOL OF PHYSICAL EDUCATION

**Scheme of Examination & Syllabus  
of Course Work  
for  
Ph.D. in Physical Education**  
(As per University ordinance no. 11 and 14)  
(July 2021 Onwards)

# DEVI AHILYA VISHWAVIDYALAYA, INDORE

## RULES GOVERNING THE COURSE WORK FOR AWARD OF Ph.D. DEGREE IN PHYSICAL EDUCATION

### 1. OBJECTIVE OF THE COURSE WORK

- (a) To provide knowledge to researchers.
- (b) To develop research ability of researchers.

### 2. DURATION OF THE COURSE WORK

One Semester (As per University Ph.D. Ordinance 11)

### 3. COURSE WORK (As per Ph.D. Ordinance 11)

- (a) The candidates already completed the course work with at least 55% of marks in M.Phil. and admitted to the Ph.D. programme shall be exempted from the Ph.D. course work and its fee. All other candidates admitted to the Ph.D. programme and submitted the Ph.D. registration form shall be required to complete the course work of 16 credits as prescribed by the University/ Research Centre during initial one or two semesters. The course work shall be treated as prerequisite for Ph.D. preparation. All courses prescribed for Ph.D. course work shall be in conformity with the credit hour instructional requirement and shall specify content, instructional and assessment methods. The examination and evaluation scheme for Ph.D. course work shall be as per the examination and evaluation scheme of the University applicable to the other programmes of the UTDs.

The Ph.D. course work shall contain the following courses:

- |       |  |           |
|-------|--|-----------|
| (i)   | Research Methodology                               | 4 credits |
| (ii)  | Review of Published Research in the relevant field | 3 credits |
| (iii) | Computer Applications                              | 3 credits |
| (iv)  | Advance course in the relevant subject             | 3 credits |
| (v)   | Research and Publication Ethics (RPE)              | 2 credits |
| (vi)  | Comprehensive Viva-Voce                            | 3 credits |

The course on Research Methodology should cover areas such as statistical research methods, research ethics, research report writing, etc. The course on Review of Published Research in the relevant field will be undertaken under the supervisor or the regular teacher of the centre of course work and the candidate has to consult the library or other resources to carry out the literature review. At the end of the semester the candidate has to submit a brief report on the literature review for evaluation, which will be done by the two examiners. The course on computer applications will include the computer applications helpful in the relevant subject. The advanced course in the relevant field shall comprise the topics related to the subject of research. The syllabus of the courses on research methodology, computer applications, and advanced course shall be decided by the concerned Board of Studies.

The final grades shall be submitted to the University. The University shall issue the certificate of the Ph.D. course work in the prescribed format.

- (b) The course work shall be conducted in the University Teaching Departments/ Research centers as approved by the Vice chancellor.
- (c) A combined course work for M.Phil. and Ph.D. students may be conducted for a single / group of subjects wherever possible.
- (d) If found necessary, course work may be carried out in sister UTD/ Institute within the University for which due credit will be given.
- (e) If a student obtains F or Ab Grade in a course/ subject, he /she will be treated to have failed in that course. He / she have to reappear in the examinations of the course as and when conducted or arranged by the UTD in the next semester. Marks obtained earlier in continuous assessment may be carried forward and added to the marks obtained in repeat end-semester examination to decide the grade in the repeat course. The student has to pay the prescribed fee for repeating the course. If he/she further fails in the course, he/she shall not be given another chance and he/ she shall be out of the Ph.D. programme. No student shall be allowed to repeat the course to improve the grade if he/ she pass the course.
- (f) The candidate has to obtain a minimum of 55% of marks or its equivalent grade points in aggregate in the course work in order to be eligible to continue in the Ph.D. programme.

#### 4. ATTENDENCE

As per University Examination Ordinance 14.

## 5. ACADEMIC PROGRAM (Course Work)

Part – A (Theory Papers)		No. of classes per week		No. of Credits
		Lectures	Practical / Project / Library Work	
T-01	Research Methodology	03	01	04
T-02	Review of Published Research in the relevant field	02	01	03
T-03	Computer Applications	02	01	03
T-04	Advance course in Physical Education	02	01	03
T-05	Research and Publication Ethics (RPE)	01	01	02
<b>Part – B (Viva -voce)</b>				
C-01	Comprehensive Viva -Voce			03
Total Credits				<u>18</u>

## 6. EXAMINATION

- (a) All the candidates who register for Course work of Ph.D. in Physical Education shall appear in the examinations according to the following scheme:

### SCHEME OF COURSE WORK EXAMINATION

Part – A (Theory Papers)		Maximum Marks	
		External	Internal
T-01	Research Methodology	60	40
T-02	Review of Published Research in the relevant field	60	40
T-03	Computer Applications	60	40
T-04	Advance course in Physical Education	60	40
T-05	Research and Publication Ethics (RPE)	60	40
<b>Part – B (Viva Voce)</b>			
C-01	Comprehensive Viva -Voce	100	-
<b>Total</b>		400	200

**Grand Total**

**600**

## 7. EVALUATION

- (a) The grading shall be done as per university Ph.D. ordinance 11 and Examinations ordinance 14.
- (b) If a candidate fails, repetition of course work shall be as per university Ph.D. ordinance 18 and Examinations ordinance 31.

## **8. REGISTRATION OF THE STUDENT (As per Ph.D Ordinance 11)**

After successful completion of the Ph.D. course work the students shall submit the copy of the certificate of the course work and synopsis of the proposed research work in the prescribed Proforma to the University within two months from the date of declaration of result of the Ph.D. course work.

The University shall conduct the meeting of the **Research Degree Committee (RDC)** consisting of the following members:

- (i) Vice Chancellor or his nominee - Chairman
- (ii) Dean of the Faculty.
- (iii) Head of the University Teaching Department/School of Studies in the subject.
- (iv) Chairman, Board of Studies in the Subject.
- (v) One external subject expert of the rank of University Professor to be appointed by the Vice Chancellor, ordinarily out of a panel of 5 experts given by the Chairman of the Board of Studies concerned. The term of panel shall be coterminous with the Chairman Board of Studies.

External expert and two other members shall form the quorum.

The candidate shall make an oral presentation of his/ her proposed research work before RDC.

**Note:** - On the request of the supervisor, Vice Chancellor may permit him / her to be present as an observer during the oral presentation of his/ her candidate.

The RDC shall recommend the topic of research and the date of registration of the candidate for the Ph.D. degree. On approval by the RDC, the candidate shall be registered and enrolled as a Ph.D. student from the date on which candidate deposited the registration fee or as decided by RDC whichever is later. Candidate will also be required to pay regular tuition, library, IT centre and laboratory fees (six monthly) during his research tenure.

Provided that, if the RDC approves the topic and suggests a minor change, then the candidate shall be allowed to submit a revised synopsis through the Chairperson, BOS and Dean of the faculty.

If the RDC does not approve/recommend a candidate for registration to Ph.D. Candidate shall be allowed to make an oral presentation again in the next RDC. In such cases, date of registration shall be as per the recommendation of RDC.

Provided that, if candidate fails to be present or satisfy the RDC for the second time, his / her case will be rejected / cancelled. In such case, the caution money deposited by the candidate shall be refunded.

A candidate shall pursue his/her research at the allotted research centre.

In case of any dispute in the RDC regarding allied subjects of interdisciplinary nature, the case should be referred to the Academic council. The Vice Chancellor may constitute a committee in this regard and the report of the committee should be placed before the Academic council/standing committee for decision.

The meeting of the Research Degree Committee shall be held in the University Office twice a year preferably in a gap of six months. The committee shall recommend the eligibility of the person for the appointment as Supervisor/ Co-supervisor and prepare a list accordingly. This list shall be available with the Registrar.

Provided that, a candidate permitted to work in a research establishment recognized by the university shall be required to take one Supervisor/ Co-Supervisor from the institution/ research establishment where the candidate is actually working.

Also provided that, a candidate may be permitted to carry out his practical work in a Research Institution/Research Laboratory/Laboratory of a University for the purpose, under the supervision of a Scientist/ Teacher of the Institution who may or may not be the Co-supervisor of the candidate.

## **9. OTHER GENERAL RULES (As per Ph.D Ordinance 11)**

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**Ph.D. Course Work**

Paper No – (T- 01)

**Research Methodology (04 Credits)**

**Unit – I- Introduction to Research**

- a. Location of Research Problem
- b. Criteria for Selecting a Problem
- c. Scientific and Unscientific methods of problem solving
- d. The parts of a Research Proposal and Research Report
- e. Writing the Proposal and Report

**Unit – II –Types of Research in Physical Education and Exercise Science**

- a. Analytical Research (Historical, Philosophical, Reviews and Research Synthesis)
- b. Descriptive Research (Surveys and Case Studies)

**Unit – III – Experimental Research**

- a. Internal Validity
- b. External Validity
- c. Threats and control for internal and external validity
- d. Experimental Designs.

**Unit – IV - Statistical Techniques Used in:**

- a. Descriptive Statistics
  - i. Use of Measures of Central Tendency and Variability
  - ii. Use and Calculation of Standard Scores
- b. Comparative Statistics
  - i. Two Way ANOVA
  - ii. ANCOVA – (Analysis of Co- Variance)
  - iii. Post Hoc Test of Significance ( Scheffe's, LSD, Tukey HSD)
- c. Relationship Statistics
  - i. Concept of Partial and Multiple Correlation
  - ii. Concept Two Way Regression Analysis
- d. Non Parametric Statistics
  - i. Chi Square and Contingency Table
  - ii. Rank Order Correlation

## Unit – V – Practical Approach to Statistical Computation Using the Software

- a. Creating a Data File
- b. Defining variables and its Properties
- c. Computation of Descriptive Statistics (Mean, Standard Deviation, Skewness, Kurtosis, Z Scores etc.)
- d. Computation of Independent and Paired Sample “ t” Test
- e. Computation of One Way and Two Way ANOVA
- f. Computation of ANCOVA
- g. Computation of Correlation and Correlation Matrix
- h. Computation of Chi Square

### References: (Research)

1. Baumgartner, T.A., Strong, C.H., & Hensley, L.A. (2000) Conducting and reading research in health and human performance (3 rd ed.) Boston : Mc. Graw – Hill.
2. Berg, K.E. & Latin, R.W. (1994). Essentials of modern research methods in health, physical education and recreation. Englewood Cliffs, NJ: Prentice-Hill.
3. Best, J.W., Kxahn, J.V. (1998). Research in education (8<sup>th</sup> ed.) Boston. Allyn & Bacon.
4. Bogdan, R. & Biklen, S. (1997). Qualitative research for education (3 rd ed.) Boston: Allyn and bacon.
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6. Dishman, R.K., Heath, G., & Washburn, R. (2002). Physical activity epidemiology. Champaign, IL: Human Kinetics.
7. George, D. & Mallery, P. (1999) SPSS for Windows: Step by step. Boston: Allyn and bacon.
8. Leery, P.D. (1993) Practical research: Planning and design. (3 rd ed.) New York: Macmillan Publishing.
9. Husk, S.W., & Cornier, W.H. (1996) Reading statistics and research (2 nd ed.) New York: ;Harper Collins.
10. Hyllegard, R., Mood, D.P., & Morrow, J.R. (1996) Interpreting research in sport and exercise science. St. Louis : Mossy.
11. Locke, L.L. (1989) Qualitative research as a form of scientific inquiry in sport and physical education. Research quarterly for exercise and sports, 60, 1-20.
12. Marshall, C., & Rossman, G.R. (1999). Designing qualitative research (3 rd ed.) Thousand Oaks, CA: Sage.
13. Rothstein, A.L. (1985). Research design and statistics for physical education Englewood Cliffs, NJ: Prentice Hall.

### References: (Statistics)

1. Clarke, H.H. and Clarke, D.H. **Advanced Statistics with application to Physical Education**, London : Prentice Hall, Inc.
2. Garret, H. E. and Woodworth R. S. **Statistics in Psychology and Education**, Bombay: Allied Pacific Co. Ltd., 1958.
3. Guilford, J.P. **Fundamental Statistics in Psychology and Education**, New York: McGraw Hill Book Co., Inc., 1956.
4. SPSS Manual.



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**Ph.D. Course Work**  
Paper No – (T- 02)

**Review of Published Research in the relevant field (03 Credits)**

Review of related literature shall be done on the basis of critical analysis of 01 thesis and 02 research papers separately for internal and external assessment. Analysis shall be done as per the specified format issued by the department.

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**Ph.D. Course Work**  
**Paper No – (T- 03)**

**Computer Applications (03 Credits)**

**Unit – I – Spreadsheet Tools (Using Microsoft Excel)**

- a. Introduction to Spreadsheet Application
- b. Using Features, Formula and Functions
- c. Data Storage and Features of Statistical Data Analysis
- d. Generating Chart and Graphs
- e. Preparing Small Statistical Programs

**Unit – II – Presentation Tools (Using Microsoft PowerPoint)**

- a. Introduction to Presentation Tools
- b. Using Features and Functions
- c. Creating Presentation , Adding Effects, Customizing Presentation, Editing Presentation, Inserting Pictures/Graphs/Video, Creating Note Page and Showing Presentation

**Unit – III – Web Search and Using Electronic Journals**

- a. Introduction to internet
- b. Using Various Search Engin Like Googles, Google Scholar, Yahoo etc
- c. Collecting the Domain name of Various Websites Related with Physical Education Sports and Research.
- d. Using Electronic Journals Related to the Subjects and Area
- e. Using Shodh Ganga, and Infilbinet (Infonet Digital Library, Indcat and e Education)

**Unit – IV – Practical Lab Exercise**

- a. Word processing: create a text document; create a letter, report, and create a text document with figures in it.
- b. Create a ppt presentation. Create a presentation with animation. Include existing images/ pictures in a presentation. Animate pictures and text with sound effects in a presentation
- c. Create a simple spreadsheet and perform the following operations: min, max, sum, and average. Create different types of charts using a spreadsheet: line, bar, area and pie.
- d. Collecting the data using google form tool: Create form, save data in spreadsheet, drive etc.

**References:**

1. Computer Fundamentals: Dr. V Rajaraman.
2. Fundamentals of Information Technology : Chetan Shrivastava, kalyani Publisers
3. MS –Office: Ron Mansfield , BPB Publication.
4. MS-Word 2000: Thumb Rules and: Dr.Snigdha Banerjee, New Age International Publication.
5. SPSS Manual.

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**Ph.D. Course Work**  
Paper No – (T- 04)

**Advance course in Physical Education (03 Credits)**

**Unit – I – Sports Psychology**

- a. Latest Trends in Sports Psychology.
- b. Different tools used for research.
- c. Psychological Profiling of Sportsmen/Athletes, etc.
- d. Course Related Practical Work, Field Work.

**Unit – II – Sports Biomechanics**

- a. Latest Trends in Sports Biomechanics.
- b. Different tools used for research in the field of Biomechanics.
- c. Different tools of Biomechanical Analysis.
- d. Course Related Practical Work, Field Work.

**Unit – III – Measurement and Evaluation**

- a. Latest trends in Evaluation in Physical Education
- b. Different tools of evaluation in Physical Education.
- c. Course Related Practical Work, Field Work.

**Unit – IV – Exercise Physiology**

- a. Latest Trends in the field of Exercise Physiology.
- b. Different tools used for research in the field of Exercise Physiology.
- c. Course Related Practical Work, Field Work.

**References:**

1. Larson, L.A. and Yocum, R.D. Measurement and Evaluation in Physical, Health and Recreation Education St . Louis :C.V. Mosby Co.1951.
2. Mathew,Donald,Measurement in physical Education Lond: W,B.Saunders Co. 1973.5th End.
3. Clarke, H Application of Measurement in Health and Physical Education Prentice Hall Inc . 6<sup>th</sup> Edn .1987.
4. Phillips D. allen end homak; E. james Measurement end Evaluation in physical Education john Wiley end sons; new york, chichester, Brisbane, toronto, 1978.
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6. Butt, Dorce Susan psychology of sports , New York
7. Cratty Bryant J. Movement Behavior and Motor Learning Philadelphia lea and febiger 1975
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10. Gray L. Soderberg. KINESIOLOGY Application of Pathological Motion Philadelphia Williams & Wilkins
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12. Karpovich. P.V. and Sinning. W.E. : Physiology of Muscular Activity .

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**Ph.D. Course Work**  
**Paper No – (T- 05)**

**Research and Publication Ethics (RPE) (02 Credits)**

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

**Course Level:**

- 2 Credit course (30 hrs.)

**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.

**Course structure**

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

<b>Modules</b>	<b>Unit title</b>	<b>Teaching hours</b>
<b>Theory</b>		
RPE 01	Philosophy and Ethics	4
RPE 02	Scientific Conduct	4
RPE 03	Publication Ethics	7
<b>Practice</b>		
RPE 04	Open Access Publishing	4
RPE 05	Publication Misconduct	4
RPE 06	Databases and Research Metrics	7
	<b>Total</b>	<b>30</b>

## Syllabus in detail

### **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, SpringerJournal 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 compromising open access. *Nature*, 489(7415), 179–179. <https://doi.org/10.1038/489179a>
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