

COURSE WORK
for
DOCTOR OF PHILOSOPHY(Ph.D.)

Prepared by



The Directorate of Research
Uttarakhad Open
University, Haldwani
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Preamble

Research is a methodical and logical process of analyzing information to increase our understanding of the phenomenon under study. It adds to our existing knowledge of the phenomenon and helps to communicate that understanding to others.

Therefore the PhD programs of Uttarakhand Open University are designed to accomplish local and regional aspirations, fulfil national obligations and honor international commitments through high quality research in various disciplines. The pre-PhD course work, thus aims to provide scientific understanding of research to the researchers.

Important Points to be noted

This program admits a small core of research oriented students each year. Before undertaking the research work, Course work is necessary as it provides an evidence of ability to conduct research. Therefore frame of the course work designed is as-

Course Work Assessment:

Subject Code	Modules included in the Course	Evaluation (Theory)	Evaluation (Assign.)	Evaluation (Project)	Remarks
CW01	Module I: Introduction of Research	70 (Written Examination)	30		Policies regarding the evaluation system of the University as Prescribed by Examination Section or decisions taken at a later date shall prevail.
CW02	Module II: Tools and techniques for data collection Module III: Research Writing and Technological Inputs in Research	70 (Written Examination)	30	-	
CW03	Module IV: Discipline Specific Research Methodologies Module V: Emerging Trends and Major Thrust area in Discipline Specific Research Approaches	70 (Written Examination)	30	-	
CW04	Module VI: Formulating a Research Proposal			100 Project Evaluation – (50); Presentation and Viva – (50)	
CW05	Research and Publication Ethics (RPE)	70	30		

Course Work Assessment with Credits:

Sub. Code	Module Name	Total Credit	Total Marks Assigned (100)			Administered by/Competed by	Evaluation Pattern
			Evaluation (Theory)	Evaluation (Assignment)	Evaluation (Project)		
CW01	Module I: Introduction of Research	02	70	30	-	Directorate of Research & Innovation	Paper shall be of Eighty (80) marks divided into two (02) Sections A and B. SECTION – A (Long-answer-type questions). SECTION – B (Short-answer - type questions)
CW02	Module II: Tools and techniques for data collection	01	70	30	-	Directorate of Research & Innovation	
	Module III: Research Writing and Technological Inputs in Research	01					
CW03	Module IV: Discipline Specific Research Methodologies	02	70	30	-	Concerned Department	
	Module V: Emerging Trends and Major Thrust areas in Discipline Specific Research Approaches	02					

CW04	Module VI: Formulating a Research Proposal	02	-	-	100 (Proposal Evaluation (50) Presentation and Viva – (50)	Concerned Department (with the help of Directorate of Research and Innovation)	Paper shall be of Eighty (80) marks divided into two (02) Sections A and B. SECTION – A (Long-answer-type questions).
CW05	Research and Publication Ethics (RPE)	02	70	30	-	Directorate of Research & Innovation	SECTION – B (Short-answer - type questions)
Total Credits and Marks		12			500		

Module I: Introduction of Research

- **Research:** Meaning and Characteristics. Why Research? Areas of Research.
- **Objectives of Research:** Exploration, Description, Explanation, Prediction, Influence.
- Research Method, Methodology & Designs.
- **General Kinds of Research (Brief Introduction):-**
 - Basic/Fundamental Research, Applied Research, Action Research; Orientational Research.
- **Quantitative Research:**
 - Experimental Research (True and Quasi): Concept, Types, Internal & External Validity, Experimental Designs; Non-Experimental Research/Descriptive Study.
 - Assessment Research and Evaluation Research
 - Descriptive Research
 - (a) Interrelationship Study: Ex-Post Facto Research/ Causal Comparative Study,
 - (b) Co-relational Study
 - (c) Developmental Study
 - (i) Growth Study-Longitudinal and Cross Sectional Study
 - (ii) Trend Developmental Study
- **Qualitative Research:** Concept, Characteristics &Types
 - Historical Research (Concept, Resources, Facts & Evidence, Criticism in Historical Researches); Philosophical Research; Case Study; Phenomenological Research; Ethnographical Research; Ethno-methodological Research; Symbolic Interactionism.
- **Mixed Research:** Concept, Characteristics &Types.
- **Hypothesis:** Concept, Characteristics of good Hypothesis.
- **Types of Hypothesis:** Directional & Non-directional, Null Hypothesis, Alternative Hypothesis; Simple & Complex Hypothesis; Causal & Descriptive Hypothesis),
- **Hypothesis Testing:** Area of Acceptance, Area of Rejection, Level of Significance, Level of Confidence, Confidence Interval, Type I Error, Type II Error.
- **Variables:** Qualitative and Quantitative Variables; Independent/Experimental Variables (Treatment/E-Type Variables, Attribute/S-Type Variables) Dependent Variables, Intervening Variables.

- **Population and Sampling:** Universe, Population (Homogeneous & Heterogeneous, Finite & Infinite, Existent & Hypothetical), Sample, Sampling Units, Sampling Frame, Sample Units, Sampling Fraction, Response Rate, Sampling Method, Inferential Statistical Methods, Statistical Inferences, Parameters & Statistics, Sampling Distribution, Standard Error, Central Limit Theorem.
- Types of Sampling: Probability/Random (Unrestricted/ Simple Random, Restricted: Systematic, Cluster, Stratified, Multistage), Non Probability/Non Random (Incidental/Accidental/Convenience, Quota, Purposive/Judgmental, Snowball); Sampling in Qualitative Research; Basis of determining the Sample Size.

ModuleII: Tools and Techniques for Data Collection

- **Measurement:** Concept of Measurement, Evaluation, Assessment & Appraisal;
- **Scales of Measurement:** Nominal, Ordinal, Interval and Ratio.
- **Data:** Concept and its types (Qualitative & Quantitative, Parametric & Non-parametric)
- Connotation of Tools and Techniques.
- **Techniques for data collection:** Observation Technique, Self-Reporting Technique, Testing Technique, Sociometry Technique, Projective Technique.
- **Tools for data collection:** Objective & Subjective Tools. Continuum of Objectivity in context of tools.
- **Different tools and their developmental procedures:** Questionnaires, Schedules, Inventories, Interviews, Check Lists, Rating Scales (Numerical, Graphical, Ordering, Position, Forced Choice), Projective Tools, Observation, Tests, Test Battery, Attitude Scales (Thurston, Likert), Q-Short Method, Semantic Differential Scale, Cumulative Record, Anecdotal Record, Content Analysis.
- Characteristics of good research tools: Objectivity, Reliability, Validity, Norms & Usability.

Module III: Research Writing and Technological Inputs

(A) Review, Research Proposal and Research Paper Writing

- **Review of literature:** Meaning, Field, Role of library in Research process (merits and demerits); Literature survey & review writing; Techniques of Research Paper Review; Techniques of Article Review; Techniques of Book Review
- Basic Principles of Abstract Writing, Research Paper Writing.
- **Seminar, Conference and Symposium:** Brief introduction about Seminar, Conference, Convention, Symposium, Workshop, Training Programme & Brain Storming Session.
- **Synopsis:** Meaning, Significance, Components and Structure
- Research Proposals of Minor & Major Projects

(B) Writing Research Report

- Research report writing and dissemination of research findings.
- Structure of Doctoral Dissertation (Thesis).
- Basic technicalities of Report Writing.
- Documentation: styles of documentation, use of Footnotes or Endnote.
- Citation styles: Style guides with examples (APA, MLA & Chicago).
- How to write References and Bibliography.

(C) The application of Information and Communication Technologies in Research

- Basics and Role of computer and Internet in Research.
- Introduction to operating systems– handling different operating systems PC/Mac etc.
- Introduction to Windows XP/Vista; Use of word processing software (MS Word/Latex etc.), Microsoft Excel, Microsoft Publisher and others.
- Data analysis and its applications.
- Drawing graphs and diagrams through computer.
- Microsoft Power point presentation.
- Role of web media for Literature survey.
- Open Education Resources and Research.
- SPSS.

Module IV: Discipline Specific Research Methodologies

(02 Credits: 60 Hrs.)

**Module V: Emerging Trends and Major Thrust areas in Discipline
Specific Research Approaches**

(02 Credits: 60Hrs.)

Module VI: Formulating a Research Proposal

(02 Credits: 60 Hrs.)

CW05 Research and Publication Ethics (RPE)

Philosophy and Ethics-Introduction to philosophy: definition, nature and scope, concept, branches.

Ethics: definition, moral philosophy, nature of moral judgements and reactions.

Scientific Conduct- 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.

Publication Ethics- 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 behaviour and vice versa, types.

Violation of publication ethics, authorship and contributorship Identification of publication misconduct, complaints and appeals Predatory publishers and journals.

Open Access Publishing- Open access publications and initiatives

SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies.

Software tool to identify predatory publications developed by SPPU Journal finder/ journal suggestion tools viz. JANE, Elsevier Journal.

Finder, Springer Journal Suggested, etc.

Publication Misconduct- Group Discussions Subject specific ethical issues, FFP, authorship, Conflicts of interest.

Complaints and appeals: examples and fraud from India and abroad Software Tools-Use of plagiarism software like Turnitin, Urkund and other open source software tools.

Data base and Research Metrics- Data bases and Research Metrics

Indexing data bases, Citation data bases: Web of Science, Scopus, etc.

Research Metrics- Impact Factor of journal as per Journal Citation Report, SNIP, SIR, IPP, Cite Score

Metrics: h-index, g index, i10 index, altmetrics