COURSE WORK FOR Ph.D DEGREE IN EDUCATION AND PHYSICAL EDUCATION

Paper-I
RESEARCH METHODOLOGY IN EDUCATION

Credits 04
Hours 30
Total Marks 100

Unit-I
Educational Research, Areas and Strategy to locate

1. Educational Research**:** Conceptual understanding, need, importance, types of educational research with applications.

2. Identification of research problem across diverse areas of education like; pedagogic concerns, curricular and co-curricular domains of education, psychological and philosophical perspectives, sociology of education, educational technology, guidance and counseling, history of education, economics of education, educational policy perspectives, multicultural and gender studies in education, special education, educational inclusion-exclusion and contemporary educational issues.

3. Review of related Literature: Function and use of review in qualitative and quantitative research, strategy of locating primary and secondary review resources; decoding and using the documents; design techniques in literature use; strategy to review online and offline resources and citation procedures.

4. Defining a research problem; analyzing the research problem; theoretical underpinning; purpose statement; designing the strategy of inquiry; Designing research questions; hypotheses and objectives; operationalizing the variables.

Unit-II
Research Methods and Procedures

1. Quantitative Methods: Descriptive method; Experimental method; concept; designs; pre, quasi, true, single subject and factorial; historical method, co relational and casual comparative methods of educational research; defining surveys; use of theory in quantitative research.
2. Qualitative Methods: Assumptions of qualitative method, process to decide qualitative strategy of inquiry, ethnography, participatory, observation, case study, interview and focus group discussions; narrative enquiries, Judging and evaluating; the qualitative write up.
3. Mix Methods: The components of mix method; types of mixed method strategies of combined designs; alternative strategies and visual models; data collection procedures; analyzing and validation of procedures. Report presentation structures. Examples of mix methods.

Unit-III
Sample, Tools and Techniques

1. Sample**:** Sample selection; defining population, methods and procedure of sample selection; Probability sampling techniques with examples; determining sample size; methods of minimizing sampling biases and errors, sample description.

2. Tools and Techniques**:** Selection of measuring techniques; evaluating research instruments; selecting tools for quantitative and qualitative research; tests; questionnaires, inventories' checklists, scale; development, standardization and administration of research tools; interview; observations and procedures of participatory techniques.

3. Data Collection:Aspects of data collection; field work; coding and tabulation of quantitative and qualitative data, techniques of data analysis.

Unit-IV
Writing Research Proposal, Report and Other Academic Writings

1. Research Proposal**:** Theoretical and conceptual framework, Criteria of a good research proposal, types and components of a research proposal.

2. Research Reports: General rules for writing a research report; format and types of research reports; essential styles of citation and references.

3. Criteria for the evaluation of research; general and method- specific criteria of evaluation; an overview of the dissemination strategies, Scholarly writing; criteria of writing a research paper, essential characteristics of a good manuscript.

PAPER II

STATISTICS IN EDUCATIONAL RESEARCH AND E-COMPETENCIES

Credits	**04**
Hours	**30**
Total Marks	**100**
Theory (External)	**80**
Theory (Internal)	**20**

PART-A

Unit-I

Data and Descriptive Features of Data:

1. Levels/scales of measurement & relevance for application of statistical procedures (with examples), frequency distribution.
2. Measures of central tendency (Mean, Median, Mode) & Measures of variability (Range, Quartile Deviation, Average Deviation, Standard deviation)
3. Normal Probability Curve: properties and applications
4. Features of normality: skewness, kurtosis, normality test (Shapiro-Wilk)
5. Parametric and Non-parametric statistics: concept, examples

Unit-II

Inferential Analysis:

1. Concepts, computation, hypothesis formulation & interpretation: t-test statistic, ANOVA & ANCOVA (one-way & two-way), Assumption testing (Levene's statistic), interpretation of main effects & interaction effect (kxk; kxkxk)
2. Concept and interpretation of Post-hoc test statistics for ANOVA/ANCOVA; Bonferroni procedure; Scheffe's method; Turkey's test; Fisher's Least Significant Difference (LSD)
3. Concept and interpretation of effect size & confidence intervals.
4. Concept of Type I & Type II errors; Degrees of freedom; levels of significance; power analysis
5. Conceptual understanding, hypothesis formulation & interpretation of results (not calculation) of MANOVA & MANCOVA.

Unit-III
Correlational Analysis

1. Concept of Correlation; causation & coefficient correlation
2. Concept, hypothesis formulation, consumption & interpretation: Product moment correlation; Rank difference correlation; Bi-serial & Point bi-serial, tetrachoric& Phi coefficient of correlation; significance of statistic
3. Concepts, hypothesis formulation, computation & interpretation: Partial correlation (first & second order only) &Multiple correlation (with two independent variables only)
4. Concept of Regression analysis for prediction; hypothesis formulation; regression equation (one predictor variable); standard error of estimate.
5. Conceptual understanding of Factor analysis (Exploratory & Confirmatory)

Unit-IV
Non-Parametric and other

1. Concept, hypothesis formulation, computation & interpretation: Chi-square test of independence and association
2. Concept, hypothesis formulation, computation & interpretation: Wilcoxin's matched pairs test: Kruskal-Wallis test; Sign test
3. Percentage analysis & significance of percentage (hypothesis testing)
4. Concept & computation of Percentile & Percentile Ranks
5. Concept of standard score (z-score; Sten score; T-score)

PART-B

E-COMPETENCIES:

1. SPSS: Introductory level
2. Software for qualitative data analysis (any two free online versions)
3. Producing FIVE tasks each using either MS Office or any Open Source in the following and saving the files in different formats including: PDF, Word, Excel, Power Point, Publisher, Page Maker.
4. Graphic presentation of data in diversified presentations preferably using SPSS
5. Using email, web pages, blogs, search engines
6. Surfing national and international education specific portals: Brahaspati, Moodles etc.
7. Surfing and storing latest research trends in education worldwide.
8. Communication Skills: verbal and nonverbal communication and presentation skills.

PAPER-III

ETHICS IN RESEARCH AND PUBLICATIONS

Credits	**04**
Hours	**30**
Total Marks	**100**
Theory	**80**
Practical	**20**

Unit-I

Philosophy and Research Ethics

Philosophy of Research Ethic; Defining Ethics, moral philosophy; Ethical frame works and Principles; Ethical codes, Ethical Issues.

Ethics with respect to research; Need and importance.

Ethics Approaches: Utilitarianism, Cultural Relativism, Egoism, Absolute moral rules, The Social Contract, Rights Approach, Justice approach, Common Good Approach, Virtue Approach, The Human Community Approach; Basis for ethical decision making.

Nature of moral judgments and reactions, dealing with moral disagreements.

Unit-II

Ethical Thinking and Scientific Conduct of Research

History of research ethics

Approaches that underpin all of our ethical thinking about research: goal-based, duty-based and rights-based

Ethical principles and rules, Autonomy, Non-malefience, Benefience, Justice.

Ethical rules, Practical application of ethical principles and rules; Consent, Privacy and Confidentiality, Vulnerable and non-competent subjects, Risks, Deception

Code of Ethics; Intellectual honesty and research integrity.

Research misconducts: Falsification, Fabrication and Plagiarism (FFP).

Redundant publications duplicate and overlapping publications, salami slicing.

Selective reporting and misrepresentation of data.

Unit-III

Publication Ethics and Publication Misconduct

Publication ethics: definition, introduction and importance.

Best practices/ standards setting initiatives and guidelines: COPE, WAME, etc.

Conflicts of interest.

Publication misconducts: definition, concept, problems that lead to unethical behavior and vice versa, types.

Violation of publication ethics, authorship and contributor ship.

Identification of publication misconduct, complaints and appeals.

Subject specific ethical issues, FFP, authorship.

Conflicts of interest.

Knowledge of plagiarism software like Turnitin, Urkund and other open source software tools.

Unit-IV

Open Access Publishing, Database and Research Metrics

Open Access publication and initiatives.

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

Software tool to identify predatory publication developed by SPPU.

Journal finder/ journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggested etc.

Indexing database.

Citation databases: Web of Science, Scopus etc.

Impact factor of journal as per Journal Citation Report, SNIP, SIR, IPP, Cite Score.

Metrics: h-index, g index, i10index, Altmetrics.

PAPER-IV

(IN HOUSE SEMINAR PRESENTATIONS)

Credits	**02**
Hours	**20**
Total Marks	**50**
Presentation I	**25**
Presentation II	**25**

The presentations are be prepared on Contemporary issues related to Education such as:

1. Topic related to different aspect of NEP-2020
2. Philosophical and Sociological perspectives in Education
3. Education and Society; Social psychology of education.
4. Contemporary issues of Education and research with reference to education of women, rural poor, under privileged and socio-economically marginalised sections of the society.
5. Use of technology in education; merits and demerits.
6. Economic and political aspects of education.
7. History of education in India; ancient vis-a-vis modern.
8. Latest policy trends in education as evident through legislations in India.
9. Teacher education related to pedagogical concerns; Process of preparing of humane teachers.
10. Curriculum development; contradictions and challenges.
11. Educational administration, planning and management.
12. Evaluation in education; role, techniques and procedures.
13. Inclusion in Education and Disability studies.
14. Comparative education
15. Environment education, education and sustainable development
16. Adult and Continuing education
17. Education for community development etc.

Evaluation: The presentations of candidates will be evaluated by an Expert Panel of the Department.

NOTE: *THE CANDIDATE WILL BE REQUIRED TO MAKE PRESENTATION OF ONE HOUR DURATION EACH ON ANY OF THE TWO OF THE ABOVE LISTED SUBJECTS AT AN IN HOUSE SEMINAR.*

PAPER-V

PREPARATION FOR RESERACH IN EDUCATION

Credits	**02**
Hours	**20**
Total Marks	**50**

Production of a mini pilot project/ synopsis. Preparation for the same will be done under the supervision of the allotted supervisor.

The time schedule for the same will be circulated by the Chairperson, Department of Education to the concerned section/ supervisors/ candidates so as the information reaches them within 20 days of the commencement of the course.

Evaluation: The projects of candidates will be evaluated by an Expert Panel of the Department.