

Course: M.A. Education

Semester	II
Paper Number	MAEDCR24
Paper Title	Methodology of Educational Research & Educational Statistics
No. of Credits	6
No. of periods assigned per week	Theory: Six
Course description / objective and outcome	Students will be able to: <ol style="list-style-type: none">1. Illustrate and analyse the concepts, purpose and significance of educational research.2. Explain the types and techniques of research.3. Explain and analyse the various process of data collection, interpretation, referencing styles & research ethics.4. Apply the theoretical knowledge for the purpose of report writing.5. Explain the use of statistics in Educational Research.
Syllabus	Module 1: (40 marks) Unit-I: Educational Research: Basic Concept and understanding <ul style="list-style-type: none">○ Understanding the need for research: Rationale/ purpose, significance and application○ Basics concept of types of research: qualitative, quantitative and mixed method○ Review of related literature○ General steps of educational research Planning Empirical Research <ul style="list-style-type: none">○ Selection of the research problem and formulation of research design, population and samples, concept of variables etc.○ Concept of assumption, objectives, research questions, hypothesis, delimitation, limitation○ Research Design: Sampling types, criteria of good sample etc.○ Tool development: standardization and adaptation, (Reliability, Validity, and levels of measurement)

Unit-II:

Data Collection Methods and Analysis

- Different methods of data collection, observation, interviews, tests (NRT, CRT), Questionnaire, scales etc.
- Sampling Techniques: probability and non-probability sampling.
- Tools and Measures: NRT, CRT, Nominal scale, Ordinal Scale, Ratio scale, Interval scale etc.
- Data Interpretation: Descriptive statistics and inferential statistics

Writing Research report, Ethics and referencing style

- Research Ethics
- Referencing style: APA, MLA, and others
- Manuscript/ publication of findings: basics
- Preparation of Research Report

Module 2: (40 marks)

Unit III:

Statistics in Educational Research

- Definition and need of statistics in educational research.
- Concept of hypothesis and Null hypothesis. Confidence Limit, significance testing and interpretation
- Concept of Errors- Type I and Type II, One tailed and two tailed tests.

Concept of the following:

- Scales of Measurement
- Normal Probability Curve - Central Limit theorem
- Population means, Sample mean and its estimation
- Parametric and Non-Parametric Testing

Unit IV:

Descriptive Statistics

- Pictorial representation and interpretation- Histogram, Polygon, Bar graph, ogive, piechart
- Measures of central tendency
- Measures of variability

Inferential statistics

- Parametric testing- t –test, ANOVA
- Non-Parametric testing – Chi Square test, Median

	<p>test, Sign Test</p> <ul style="list-style-type: none"> ○ Correlation and Regression- Product moment, Rank Difference, Partial, Multiple, Biserial, Point biserial. Regression equation and its use.
Texts / References	<ol style="list-style-type: none"> 1. Koul, L. (2008). Methodology of Educational Research. New Delhi: Viksha publishing House Pvt. Ltd. 2. Best J.W. & Kahn, J.V. (2008). Research in Education. New Delhi: Pearson Education 3. Lichtman, M. (2010). Understanding and Evaluating Qualitative Educational Research. New Delhi: Sage. 4. McMillan. J. H. (2016). Fundamentals of Educational Research (7th ed). Pearson 5. McMillan, J. & Schumacher, S. (2014). Research in Education: Evidence-Based Inquiry (7th ed). Edinburgh: Pearson 6. Schreiber, J. & Asner-Self, K. (2011). Educational Research: The Interrelationship of Questions, Sampling, Design and Analysis. John Wiley & Sons 7. Creswell, J. W. & Guetterman, T. C (2019). Educational Research: Planning, Conducting, and Evaluating Quantitative and Oualitative Research (6th ed). New York: Pearson 8. Coe, R., Waring, M., Hedges, L. V. & Arthur, J (2017). Research Methods and Methodologies in Education (2nd ed). Sage Publications 9. Christensen, L. B., Johnson, R. B. & Turner, L. A. (2015). Research Methods, Design and Analysis (12th ed). Pearson 10. Leavy, P. (2017). Research Design. New York: The Guilford Press
Evaluation	<p>CIA- 20 marks</p> <p>End Sem Exam- 80 marks</p>