

M.Phil.

(EDUCATION  
)

SYLLABUS

PAPER – I (CORE)

**ADVANCED RESEARCH  
METHODOLOGY AND**

**EDUCATIONAL STATISTICS**

**Objectives:**

After the completion of this course student will be able to

1. understand the foundations of Educational Research.
2. identify the sources of research problems and variables.
3. formulate hypotheses, design of Educational research and to make them understand different techniques of data collection.
4. familiarize with different methods and approaches of Educational Research.
5. understand the contemporary developments in Educational Research.
6. define the ‘concept’ research as acquisition of information.
7. comprehend the methods of acquiring information.
8. analyze the nature of enquiry.
9. describe the philosophical bases of research
10. identify the different paradigms.
11. explain the theory behind statistics.
12. choose appropriate statistical techniques for the analysis of data collected.
13. use and interpret the results on analysis.
14. acquire the skill in using computer for data analysis.
15. illustrate simple statistical analysis using computer.

**UNIT I:**

Research as a process of acquisition of knowledge – Methods of acquiring knowledge Older methods –Modern Scientific method – Steps in Scientific Methods – Assumption underlying Scientific Method – Theory building – Nature, Type and Functions of theories.

**UNIT II:**

Nature of Enquiry – Search for Truth, Conceptions of Social reality, Positivism – Understanding Natural and Social phenomena – Physical and Social reality – Ontological, Epistemological, Methodological and Human- related assumptions – the Objectivist and Subjectivist polarization.

**UNIT III:**

The Philosophical bases of research – Positivistic and Anti-Positivistic movements – Phenomenology, Symbolic interactionism, Ethno- methodology – Feminist Research – Ethics of Educational

Research.

**UNIT IV:**

Normative, Interpretive and Critical Paradigms – Emerging paradigms – Complexity theory.

**UNIT V:**

Scientific Research Methods

- a) Hypotheses for Problem Solving – Construction and Confirmation of Hypothesis - logic of Hypotheses Testing – Null Hypothesis and its significance – Testing Hypothesis of different types.
- b) Experimental research – Designs with and without control – Purpose and Methods of Control – Factors to be controlled designs with minor, partial and rigorous control – Validity of Designs – Internal and External validities – Quasi Experiments – Single Case research.

**UNIT VI:**

Humanistic research Methods: Case Study Method – Critical Theory Model  
– Ethnographic research methods – History Method.

**UNIT VII:**

Statistical Analysis for Humanistic researches. Participant Observation; Participant Verification Procedure; Triangulation; Analysis of evidence – Qualitative Analysis of Data – Data Reduction, Matrix Display Tactics for drawing conclusions confirming Findings, Summarising and Integrating findings.

Recent Developments in Educational Research – Internet Uses – Internet based Research in Education. Simulation, Geographical Information Systems (GIS), Needs Analysis and Evidence Based Education.

**UNIT VIII:**

Statistical Analysis for Scientific Researches.

- a) Sampling Procedures: Probability and Non-Probability sampling – Effective Sample Size – Sampling Errors;
- b) Univariate and Bivariate Analysis – Analysis of Variance (ANOVA) between Subjects, One Way, Factorial within Subjects; Parameter Estimation; Association; Correlation; Regression.
- c) Multivariate Analysis: i) Multiple Regression – Multiple R; Canonical R, ii) Group Differences – ANOVA, Factorial ANOVA; One Way ANOVA, Factorial MANOVA; MANCOVA; iii) Prediction of Group Membership – Discriminant function; iv) Structure – Principal Component, Factor Analysis, Path analysis.
- d) Meta Analysis.

## UNIT IX:

Computer and Data Analysis – i) About Data Base Packages – MS Excel, FOXPRO, Visual FOXPRO. Use of MS Excel for Data Entry: Variables – Import and Export of files – Data Manipulation – Data Transformation – Performing Simple Statistical Analyses like Measures of Central Tendency, Measures of Variability, Percentiles, Correlation, t – Value etc. ii) About Statistical Packages – SPSS – STATISTICA – OPENSTAT4 – NCSS – STATPAC – SAS – MINITAB – VISTA – STRATA – R-Statistics, Q-Plus etc. iii) Review of Packages and their Uses in Educational Research.

Note: What is expected is an understanding of the assumptions, objectives, principles and theory behind the Statistics, their uses and Interpretation and not the actual computations.

### References:

1. Balasubramanian, P.S. (1986), Quantitative and Qualitative Approaches to Educational research in Journal of the Madras University Vol.LVIII, No:1&2, 1986.
2. Borg, W.R., Gall, M.D. (1979). Educational Research – An Introduction, 3<sup>rd</sup> Edition, New York: Longman Inc.
3. Burgen, Robert, G. Ed., (1985). Issues in Educational Research: Qualitative Methods. London: The Falmer Press.
4. Burroughs, G.E.R. (1975). Design and Analysis in Educational Research. 2<sup>nd</sup> Edition. Oxford: Alden & Mowbray Limited.
5. Chamberlin, J.G. (1969). Toward a Phenomenology of Education. Philadelphia: West Minister Press.
6. Cohen, Brenda. (1983). Means and Ends in Education. London: George Allen & Unwin.
7. Cohen, Louis. et.al (2000), Research Methods in Education (5<sup>th</sup> edition). London: Routledge.
8. Denzin, Norman K. and Lincoln, Yvonna S. (1994). Hand Book of Qualitative Research. New Delhi: Sage Publications.
9. Festinger, U & Katz.. (1972). Research Methods in Behavioural Sciences. New York: Bold Dryden.
10. Freive, P (1973), Pedagogy of the Oppresses, New York: Seabary.
11. Golten, C and Manion, L. (1985). Research Methods in Education. London: Routledge.
12. Golten, C and Manion, L. (1981). Perspectives on Classrooms and Schools. London: Holt, Rinehart and Winston.
13. Hadin, Catherine. (1987). Research Design: Strategies and Choices in the design of Social Research. London: Allen and Unwin.
14. Hair, Joseph F. et.al. (1996). Multivariate Data Analysis. (5<sup>th</sup> Edn.). New Jersey: Prentice-Hall International, Inc.
15. Keenes, J.P. (1988). Educational Research Methodology and Measurement, An International Handbook Educational, New York: Pergamon Press.
16. Kerlinger, Fred, N (1964). Foundations of Behavioural Research: Educational and Psychological Inquiry. New York: Holt and Rinehart and Winston, Inc.

17. Kerlinger, Fred,N (1978). Foundations of Behavioural Research. New Delhi: Surjeet Publications.
18. Lather, P. (1986). Research as Praxis, Harvard Educational Review, Vol.56 No:3.
19. Mc.Kernan, James. (1991). Curriculum Action Research - A Handbook of Methods and Resources for the Relative Practitioner, London: Kogan Page.
20. Nisbet (ed.). (1985). Research, Policy and Perspective. London: Kogan Page.
21. Peokewits, T. (1984). Paradigm and Ideology in Educational research. London: Palmer Press.
22. Polkinghorne, D. (1983). methodology for Human Sciences: Systems of Enquiry. Albany: State University of New York Press.
23. Popham, W.J. (1981). Modern Educational Measurement. Englewood Cliffs: Prentice Hall Inc.
24. Reason, P and Rowan, J. (1981). Human Enquiry. New York: Wiley.

Stangge, Sherman, M. (1987). Adult Education and Phenomenological Research. Florida: Robert, E, Krieger Publishing Company.

25. Swami, Satprakashananda. (1974). Methods of Knowledge. Calcutta: Advaita Ashrama.
26. Tabachnik, B.G and Fidell L.S. (1983). Using Multivariable Statistics, New York: Harper.D.Row.
27. Van Dalen, Deobold B. (1979). Understanding Educational Research – An Introduction (4<sup>th</sup> Edition). New York: Mc Graw Hill Book Company.
28. Wasford, Geoffrey (Ed.) (1991). Doing Educational research, London: Routledge.

---oooOOOooo---