



**M.Ed. Spl. Ed. (Intellectual Disability) (Master of Education-Special Education
 Semester (II))**

Course Code	PE02CMES03	Title of the Course	RESEARCH METHODOLOGY AND STATISTICS
Total Credits of the Course	04	Hours per Week	04

Course Objectives:	<ol style="list-style-type: none"> 1. Develop a conceptual understanding of research, its need and ethical research practices. 2. Describe the types, methods and process of research. 3. Apply statistical techniques for analysis of data. 4. Explain the methods and techniques of qualitative research. 5. Prepare research proposal and report.
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Course Content		
Unit	Description	Weightage* (%)
1.	Scientific Knowledge and Research 1.1 Sources and philosophy of knowledge 1.2 Scientific thinking and research 1.3 Role of theory in research 1.4 Need for research in Education and Special Education 1.5 Ethics in research	20
2.	Types and Methods of Research 2.1 Types of research- Quantitative, Qualitative, Fundamental, Applied, Action. 2.2 Methods of Research: 2.2.1 Descriptive 2.2.2 Correlational 2.2.3 Ex-post facto 2.2.4 Experimental; Designs: (i) Pre-experimental, (ii) Pre-Post designs, (iii) Quasi Experimental design, (iv) single subject design 2.3 Variables- Types and threats 2.4 Process of research- Selection of problem, Review of literature, Sampling; Types and selection process, Hypothesis - Instruments; tests, questionnaire, interview, observation schedule, rating scale - Data collection and analysis 2.5 Standardization of research instrument- Selection of items, reliability and validity and norms	20
3.	Methods of Quantitative Analysis 3.1 Parametric and non-parametric tests: Concept and difference 3.2 Descriptive Statistics: - Measures of Central Tendency -	20





	<p>Correlations; Product-moment, Biserial-r, Point-biserial, Phi-coefficient, Regression analysis</p> <p>3.3 Inferential statistics - Underlying concepts: Sampling error, standard error of mean, confidence level, degrees of freedom, one tail-two tail test, type I and type II errors - Student t- test, ANOVA, Ancova, Chi-square, Sign Test, Mann Whitney U test, Kruskal-Wallis test</p> <p>3.4 Computer applications for analysis</p> <p>3.5 Tabulation and graphic representation</p>	
4.	<p>Qualitative Research Methods and Analysis</p> <p>4.1 Grounded theory</p> <p>4.2 Ethnography and case study</p> <p>4.3 Narrative/discourse and visual methodologies</p> <p>4.4 Mixed method</p> <p>4.5 Themes, coding and presentation</p>	20
5.	<p>Preparing Research Proposal & Report</p> <p>5.1 Components of research proposal</p> <p>5.2 Presentation of proposal</p> <p>5.3 Writing of thesis/dissertation</p> <p>5.4 Writing technical paper for publication</p> <p>5.5 Research management</p>	20

Teaching-Learning Methodology	The research concepts and processes included in this course should be taught using examples from special education and disability studies. The topics from statistics should be explained through variables, hypothesis and type of data collected in selected research studies. Evaluation may be done by asking students to select and apply suitable statistical measure to a given set of data.
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Sr. No.	<i>Course Work/ Practical/ Field Engagement</i>
1.	Review a research paper published in refereed journal
2.	Prepare and present a research proposal
3.	Review a text book and submit a report
4.	Analyze a set of data using computer application

<i>Evaluation Pattern</i>		
Sr. No.	Details of the Evaluation	Weightage





1.	Internal Written / Practical Examination	20%
2.	Internal Continuous Assessment in the form of Practical, Assignment submission, Viva-voce, Seminar presentation, Attendance	10%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to

1.	The learners will be able to develop within the student a temperament for scientific thinking and research
2.	The learners will enable to apply statistical techniques for analysis of data
3.	It orients the student to the methods of conducting research, enables him/her to prepare research proposal and report subscribing to the standard norms and criteria.
4.	The learners will be able to understand methods and techniques of qualitative research

Essential & Suggested References:

S. No.	References
1.	Agarwal, A.N. (2002). Quantitative Methods. Vrinda Publishing, New Delhi.
2.	Best, J.W., & Kahn, J.V. (1996). Research in Education. Prentice-Hall, New Delhi.
3.	Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences. Academic Press, New York.
4.	Desu, M.M., & Raghavarao, D. (1990) Sample Size Methodology. Academic Press, Boston.
5.	Dooley, D. (1997). Social Research Methods. Prentice-Hall, New Delhi.
6.	Gaur, A.S., & Gaur, S. S. (2009). Statistical Methods for Practice and Research: A Guide to Data Analysis Using SPSS. Sage Publishers, New Delhi
7.	Greene, S., & Hogan, D. (2005). Researching children's experience. Sage





	Publication, London.
8.	Grewal, P.S. (1990). Methods of Statistical Analysis. Sterling Publishers, New Delhi.
9.	Guptha, S. (2003). Research Methodology and Statistical Techniques. Deep & Deep Publishing, New Delhi.
10.	Hegde, M. N. (2003). Clinical research in communicative disorders. PRO-ED: Austin, Texas
11.	Khan, M.S. (2005). Educational research. Ashish Publishing House: New Delhi
12.	Koul, L. (1996). Methodology of Educational Research. Vikas Publishing House, New Delhi.
13.	Potti, L.R. (2004). Research Methodology. Yamuna Publications, Thiruvananthapuram.
14.	Siegel, A., & Castellen, N.J. (1988). Non Parametric statistics for Behavioural Sciences. McGraw-Hill, New York.
15.	Silverman, D. (2012). Qualitative Research. Sage Publication, London.
16.	Berg, B.L., & Lune, H. (2011). Qualitative Research Methods for the Social Sciences. Pearson Publication, Boston.
17.	Bogdan, R. C., & Biklen, S. K. (2007). Qualitative research for education: An introduction to theory and methods (5th ed). Pearson, Boston
18.	Lipsey, M.W. (1990). Design Sensitivity: Statistical Power for Experimental Research. Sage Publications, Newbury Park, CA.
19.	.Singh, A. K. (2004). Tests Measurement and Research Methods in Behavioural Science. Tata McGraw-Hill Publishing, New Delhi

On-line resources to be used if available as reference material
On-line Resources

