

## M Ed Two Year Programme

### S.Exp.2 (I) : Experimental Research in Education

Maximum Marks: 100

#### Rationale

An expert in the field of education can't be a real expert without having knowledge of experimental education. For having an in-depth knowledge and understanding of the field of experimental education, one needs to develop critical understanding of the concept and designs of experimental research. Sampling designs along with statistical techniques, parametric as well as non-parametric, are important aspects in this regard which one must learn focusing on their advantages and applications.

#### Objectives

1. To develop critical understanding about the concept of experimental education in a broad and contemporary framework
2. To analyze and comprehend various experimental designs with reference to their applications
3. To criticize various sampling designs and statistical techniques both parametric and non-parametric techniques in a continuum from traditional to the contemporary ideas on these
4. To develop an in-depth understanding about the needs for different analysis techniques focusing upon continuum of their advantages

#### Unit 1 Experimental Education:

Concept, significance and scope Experimental Method: Nature, steps in Experimental methods

#### Unit 2 Experimental Designs:

Pre-experimental, Quasi-experimental, True Experimental, Factorial, Latin Square designs and current developments in Experimental designs  
Critique about Experimental Research in Education

#### Unit 3. Sampling Designs:

Traditional designs and current developments in Sampling  
Statistical techniques appropriate to analyze various designs studied in Unit-2

#### Unit 4. Parametric Statistical techniques:

- a) ANOVA - One-way and two-way with relevant Post-hoc tests
- b) ANCOVA - One-way only and two-way with relevant Post-hoc tests
- c) Factor Analysis, Discriminant Analysis, Path Analysis: Concepts and analysis using relevant softwares such as Excel, SPSS, STAT, R, and other available softwares

## **Unit 5. Non-parametric Statistical techniques:**

Concept, significance and scope

Run test, Kolmogorov-Smirnov tests (One sample & two samples), Sign test, Wilcoxon-Signed Rank test, Median test, Mann-Whitney U-test, Non-parametric ANOVA (One-way & Two-way)

### ***Practical Work:***

- (1) *Locating recently published Experimental studies using different higher level designs and critique thereof*
- (2) *Designing and implementing an experimental study using higher level designs and analyzing the collected data*
- (3) *Analyzing data using SPSS/ STAT / R on all above statistical methods*

### **Suggestive Readings**

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