

## **TOOL COURSE**

### **SEMESTER – III**

#### **TC2 - ADVANCED EDUCATIONAL RESEARCH AND STATISTICS**

**Credits: 4**

**Internal: 40**

**Hours/Week: 4 Hrs**

**External: 60**

#### **Objectives**

**At the end of the course, the prospective teacher educators will be able to:**

- comprehend the characteristics and major types of qualitative research;
- understand the role of sampling in qualitative, quantitative and mixed research;
- appreciate the various tools of research;
- recognize the steps in writing a research report;
- gain knowledge in hypothesis testing;
- comprehend the need and importance of agencies in Educational Research.

#### **Unit I: Qualitative Research**

Introduction - Characteristics of Qualitative Research – Major types of Qualitative Research: Phenomenology, Document or Content Analysis, Ethnography, Case Studies, Genetic Studies and Grounded theory - Advantages and Limitations of Qualitative Research.

#### **Unit II: Sampling In Qualitative, Quantitative and Mixed Research**

Concepts of population- type, and sample, sampling unit, sampling frame, sample size, sampling error, Random sampling techniques: simple random sampling, systematic sampling, stratified random sampling, cluster sampling, and multi-stage sampling -Non – random sampling techniques, convenience sampling, purposive sampling, quota sampling, snowball sampling, theoretical sampling, incidental and critical case - Determining the sample size

#### **Unit III: Tools of Research**

Criteria for selection of tools – Factors related to construction of tools – Tools of different types: Observation, Interview, Questionnaire, Check list, Rating scale, Attitude scale (Thurston methods and Likert methods) – Achievement test – Diagnostic test and Prognostic test – Aptitude Test, Personality inventories – Characteristic of research tools – Reliability, Validity and Objectivity, feasibility – Standardized of tests and general procedure for item analysis.

#### **Unit IV: Educational Research Report**

##### **Writing**

Format, Language, Style, Content and Chapterization - Bibliography, Appendices - Characteristics of a good research report –

#### **Unit V: Educational Statistics**

Organization and tabulation of data- Classification and frequency distributions – Graphical representation – Frequency curve, ogive and overlapping distribution – Measures of central tendency and variability – Calculation, interpretation and uses – Elementary ideas of probability; the Normal Distribution – its properties and uses – t and Z scores – Skewness and Kurtosis Linear Correlation: its meaning and uses – Partial Correlation – Calculation of the Co-efficient of Correlation- Regression and prediction – Selected Non – Parametric methods: Ranking procedure, percentile rank, Chi-square test: its computation and uses.

The significance of statistical measures – concept of Standard Error and its uses – Testing of difference between two means – test for small large samples – Elementary ideas about F – test One Way Analysis of Variance (ANOVA)

#### **Unit VI: Agencies in Educational Research**

Need and Importance of Agencies in Educational Research – Role of Different Agencies: MHRD, UGC, NCERT, NCTE, ICSSR, ICHR, ICPR, SCERT's, State Ministries of Education.

**Practical Work:** (any one) (i) Review of Educational research report/article, (ii) Data analysis using computer

### **Suggested References:**

- ❖ Agarwal. L.P. (2007). *Modern educational research*, New Delhi: Dominant Publishers.
- ❖ Bhandarkar, P.L. Wilkinson, T.S., and Laldas, D.K., (2004). *Methodology and techniques of social research*, Mumbai: Himalaya Publishing House.
- ❖ Best, J.W. and Kahn, J.V. (2006). *Research in education, 10<sup>th</sup> Edition*, Delhi: PHI.
- ❖ Chandra, S.S and Sharma, R.K. (2007). *Research in education*. New Delhi: Atlantic Publishers.
- ❖ Keeves, John.P, (1998). *Educational research methodology and measurement. An International Hand Book*, Oxford: Pergamon Press.
- ❖ Kothari, C.R. (1998). *Quantitative techniques*, New Delhi: Vikas Publishing House.
- ❖ Kumar, (1999). *Research methodology*, Agra: Lakshmi Narayan Agarwal Ltd.,
- ❖ Kulbir.S.S. (2002). *Methodology of research in education*, New Delhi: Sterling Publications.
- ❖ Lokesh Koul, (2009). *Methodological of educational research*, 4<sup>th</sup> Edition, New Delhi: Vikas Publishing house.
- ❖ Munirudin, Qurishic, (2005). *Educational research*, New Delhi: Anmol Publications.
- ❖ Purohit.P.N. (2003). *Educational research tools and techniques*, Jaipur: Mangal Deep Publications.
- ❖ Radha Mohan, (2006). *Research methods in education*, Hyderabad: Neelkamal Publications.
- ❖ Ravi Prakash, (2003). *Problems of educational research*, New Delhi: Common Wealth Publications.