

## SEMESTER – II

COURSE CODE: MS2TC2

CREDITS: 4

### ADVANCED EDUCATIONAL RESEARCH AND STATISTICS

#### COURSE OBJECTIVES:

CO1: Enable the students to know about the process of conducting research.

CO2: Enable them to select suitable research design for their study.

CO3: Enable them to understand the significance of qualitative study in research

CO4: Provide knowledge about the significance of mixed method of research

CO5: Enable students to understand the steps present in action research.

CO6: Enable to provide knowledge on the process of collecting, analyzing, interpreting quantitative data

CO7: Make them to describe the significance of qualitative data analysis in research.

CO8: Enable them to comprehend the different types of parametric and non-parametric tests.

CO9: Make them understand the process of data analysis in mixed mode research.

CO10: Make them to prepare a model research report.

#### UNIT - I: THE PROCESS AND METHODS OF CONDUCTING RESEARCH (QUALITATIVE AND QUANTITATIVE)

Definition of Research- Steps in the process of Research- Characteristics of research, skills required to design and conduct Research. Quantitative Research Method : Definition, Characteristics- Methods : Survey - Correlational designs , Experiment designs . Qualitative Research Method : Definition, characteristics, designs : one to one interview, focus groups, ethnographic, Case study research, Record keeping and process of observation, Grounded theory designs , Ethnographic designs - Narrative Research designs.

#### UNIT - II: MIXED METHOD AND ACTION RESEARCH

Mixed Methods : Meaning- Purpose- Types of Mixed methods design - Key Characteristics of Mixed Method designs- Steps in conducting a mixed methods study - Values added in

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TAMIL NADU TEACHERS EDUCATION UNIVERSITY  
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conducting mixed method research - challenges in conducting the mixed mode research.  
Action Research : Meaning and definition – Purpose - Types : individual, collaborative, school wide and district wide - Key Characteristics of Action Research- Steps in conducting Action Research.

### **UNIT - III: COLLECTING, ANALYZING, INTERPRETING QUANTITATIVE AND QUALITATIVE DATA**

Quantitative Data: Administering the data collected - Steps in the process of quantitative data analysis - Preparing master chart - Analyzing the data: Descriptive analysis and inferential analysis - Preparing and interpreting the results.

Qualitative Data: Types of qualitative data to be collected: Observation, Interview, Documents, Audio-Visual materials - Procedures to be used to record data - Steps in analyzing, interpreting qualitative data: Organizing data, transcribing data, coding the data, using codes and themes - Representing and reporting findings, summarizing findings.

Mixed Method Data: Data analysing methods: inductive, deductive, writing theoretical notes, Quantification, Shaping metaphors, Critical methods: testing the findings and communicative validation.

### **UNIT - IV: PARAMETRIC AND NON-PARAMETRIC TESTS**

Parametric tests:  $t$  test,  $F$ -ratio, ANNOVA, ANCOVA, MANOVA, MANCOVA, Correlation- pearson, Regression: Linear & Multiple regression, and Factor analysis, cohen's effect size test.

Non -Parametric:

Kolmogrov-smirnov test(KS test of normality), Chi-square test, Mann-Whitney test, Kruskal-Wallis test, Sign test, spearman's correlation test, Cochran's Q-test and their statistical applications.

### **UNIT - V: WRITING RESEARCH REPORT**

Writing the research report - Format of the Research Report: Title page, acknowledgement, table of content, table of figures, contents, introduction, review of literature, methodology, analysis and interpretation of data, discussion and conclusion, references and appendices.

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### SSUGGESTED ACTIVITIES:

1. Prepare master chart in MS-Excel for 50 samples for any type questionnaire
2. Prepare a "rating scale or Inventory" with 5 points
3. Critically tabulate the various statistical techniques for various samples
4. Try out any one validation techniques for items in the research instruments
5. Prepare a model research report of your study

### TEXT BOOKS:

1. Best, W. J and Kahn, J. W. (2006). *Research in education*. Prentice Hall.
2. Chandra, S. S and Sharma, R. K. (2007). *Research in education*. Atlantic.
3. Creswell, J. W. (2014). *Educational research*. PHI Learning.
4. Henry E. Garrett. (2008). *Statistics in psychology and education*. Surjeet.
5. Neuman, W. L. (1997). *An introduction to educational research methods: Qualitative and quantitative approaches*. Allyn and Bacon.

### SUPPLEMENTARY READINGS:

1. Bryman, Alan. (2008). *Social research methods. 4th Edition*. Oxford University Press.
2. Cohen, Louis. et.al (2008). *Research methods in education*. Routledge.
3. Cresswell, John W. (2012). *Educational research*. Pearson.
4. Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Sage.
5. Turabian, K. L. (1973). *A manual for writers of term papers, theses and dissertation*. Chicago University Press.

### E - RESOURCES:

1. [http://www.ncert.nic.in/pdf\\_files/basic\\_in\\_education.pdf](http://www.ncert.nic.in/pdf_files/basic_in_education.pdf)
2. <http://guides.lib.utexas.edu/education>
3. [http://researchbasics.education.uconn.edu/types\\_of\\_research/](http://researchbasics.education.uconn.edu/types_of_research/)
4. <http://www.eldis.org/go/home&id=2419&type=Document>
5. <http://researchbasics.education.uconn.edu/sampling/>

  
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## COURSE OUTCOMES:

After completing this course, the students will be able to

CO1: Explain the process of conducting research.

CO2: Select suitable research design for their study.

CO3: Understand the significance of qualitative study in research

CO4: Understand the significance of mixed method of research

CO5: Understand the steps in action research.

CO6: Explain the various techniques in collecting, analysing and interpreting the quantitative, qualitative and mixed method data.

CO7: Apply suitable statistical techniques to analyse the qualitative data.

CO8: Interpret the analysed data of the mixed mode research

CO9: Select suitable parametric or non-parametric tests for the data collected.

CO10: Write a research report on their own.

## OUTCOME MAPPING

COURSE OUTCOMES	PROGRAMME SPECIFIC OUTCOMES																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CO1	✓					✓			✓	✓							✓
CO2	✓					✓			✓	✓							✓
CO3	✓					✓			✓	✓							✓
CO4	✓					✓			✓	✓							✓
CO5	✓					✓			✓	✓							✓
CO6	✓					✓			✓	✓							✓
CO7	✓					✓			✓	✓							✓
CO8	✓					✓			✓	✓							✓
CO9	✓					✓			✓	✓							✓
CO10	✓					✓			✓	✓							✓

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