

CIRCULAR :-

A reference is invited to the Ordinances, Regulations and syllabi relating to the Post Graduate Certificate Course in Research Methodology in Education vide this office Circular No./UG 469 of 2004 dated 1st November, 2004 and the Head, University Department of Education and the Principals of the affiliated training collages in Education are hereby informed that the recommendation made by the Board of Studies in Education at its meeting held on 18th March, 2008 has been accepted by the Academic Council at its meeting held on 15th April, 2008 vide item No. 4.58 and that, in accordance therewith, the revised syllabus for the Post graduate Certificate Course in Research Methodology in Education is as per Appendix and that the same has been brought into force with effect from the academic year 2008 - 2009.

MUMBAI-400 032
2nd August, 2008

PRIN.K.VENKATARAMANI
REGISTRAR

To, The Head, University Department of Education and the Principals of the affiliated training collages in Education.

A.C./4. 58/15.04.2008

No.UG/349 - A of 2008,

MUMBAI-400 032

2nd August, 2008

Copy forwarded with compliments for information to :-

- 1) The Dean, Faculty of Arts.
- 2) The Chairperson, Board of Studies in Education .
- 3) The Controller of Examinations,
- 4) The Co-Ordinator, University Computerization Centre,

(D. E. SATE)
DEPUTY REGISTRAR
(U.G.F.G.Section.)

Copy to :-

The Director, Board of College and University Development, , the Deputy Registrar (Eligibility and Migration Section), the Director of Students Welfare, the Executive Secretary to the Vice-Chancellor, the Pro-Vice-Chancellor, the Registrar and the Assistant Registrar, Administrative sub-center, Ratnagiri for information:

The Controller of Examinations (10 copies), the Finance and Accounts Officer (2 copies), Record Section (5 copies), Publications Section (5 copies), the Deputy Registrar, Enrolment, Eligibility and Migration Section (3 copies), the Deputy Registrar, Statistical Unit (2 copies), the Deputy Registrar (Accounts Section), Vidyanagari (2 copies), the Deputy Registrar, Affiliation Section (2 copies), the Director, Institute of Distance Education, (10 copies) the Director Unvers Computer Center (IDE Building), Vidyanagari, (2 copies) the Deputy Registrar (Special Cell), the Deputy Registrar, (PRC the Assistant Registrar, Academic Authorities Unit (2 copies)and the Assistant Registrar, Executive Authorities Unit (2 copy). They are requested to treat this as action taken report on the concerned resolution adopted by the Academic Council refer to in the above Circular and that, no separate Action Taken Report will be sent in this connection. the Assistant Regis Constituent Colleges Unit (2 copies), BUCT(1 copy), the Deputy Account, Unit V(1 copy), the In-charge Director, Centre Computing Facility (1 copy), the Receptionist (1 copy), the Telephone Operator (1 copy), the Secretary MUASA (1 copy) Superintendent, Post-Graduate Section (2 copies), the Superintendent, Thesis Section (2 copies)

UNIVERSITY OF MUMBAI



**REVISED SYLLABUS
FOR THE
POST-GRADUATE
CERTIFICATE COURSE IN
RESEARCH METHODOLOGY IN EDUCATION**

(with effect from the academic year 2008-2009)

Detailed Syllabus

Objectives of the Course

- 1) To enable teachers to understand concept of research in education, its need, methodology, sampling techniques and tools and techniques.
- 2) To enable teachers to understand the qualitative and quantitative techniques of data analysis and to be able to apply it in data analysis.
- 3) To enable teachers to understand qualitative research methods in detail.

PAPER I RESEARCH IN EDUCATION

100 Marks

1. EDUCATIONAL RESEARCH

- (a) Meaning and scope of educational research.
- (b) Meaning and steps of scientific method. Aims of research as a scientific activity: Problem-solving, Theory Building and Prediction.
- (c) Paradigms of educational research: Quantitative and Qualitative.
- (d) Types of research: Fundamental, Applied and Action.

2. **THEORY BUILDING AND RESEARCH:** The Role of theory in educational research. Structure of theory: theory as (i) concept (ii) conceptual scheme and (iii) communication of explanations. Meaning of laws, assumptions, facts, concepts and constructs. Generating a theory. Use of inductive and deductive reasoning research. Meaning of explanations and generalisations with reference to theory. Criteria of evaluating a theory. Types of theory. Meaning of a model. Types of models: Classificatory, Typological, Contingency, Associative and Functional models.

3. RESEARCH PROPOSAL

- (a) Identification of a research topic: Sources and Need.
- (b) Review of related literature.
- (c) Rationale and need of the study.
- (d) Conceptual and operational definition of the terms.
- (e) Variables.
- (f) Research questions, aims, objectives and hypotheses.
- (g) Assumptions, if any.
- (h) Methodology, sample and tools.
- (i) Scope, limitations and delimitations.
- (j) Significance of the study.
- (k) Bibliography.
- (l) Time Frame.
- (m) Budget, if any.
- (n) Chapterisation.

4. VARIABLES AND HYPOTHESES

(a) Variables:

- Meaning of Variables
- Types of Variables (Independent, Dependent, Extraneous, Intervening and Moderator)

(b) Hypotheses

- Concept of Hypothesis
- Sources of Hypothesis
- Types of Hypothesis (Research, Directional, Non-directional, Null)
- Formulating Hypothesis
- Characteristics of a good hypothesis.

5. RESEARCH METHODOLOGY

(a) Descriptive Research:

- Causal-Comparative
- Correlational
- Document Analysis

(b) Historical Research: Meaning, Scope of historical research, Uses of history, Steps of doing historical research (Defining the research problem and types of historical inquiry, Searching for historical sources, Summarizing and evaluating historical sources and Presenting pertinent facts within an interpretive framework.) Types of historical sources, External and internal criticism of historical sources.

(c) Experimental Research:

- Pre-Experimental Design, Quasi- Experimental Design and True-Experimental Designs.
- Factorial Design.
- Nesting Design.
- Single-subject Design.
- Internal and External Experimental Validity.
- Controlling extraneous and intervening variables.

6. SAMPLING:

(a) Concepts of Universe and Sample

(b) Need for Sampling

(c) Characteristics of a good Sample

(d) Determining Sample Size

(e) Techniques of Sampling

- Probability Sampling
- Non- Probability Sampling

7. TOOLS AND TECHNIQUES OF RESEARCH

- Classical Test Theory: Model, Assumption, Limitations.
- Item Response Theory: Models, Parameters, Estimation, Assumptions.
- Uni-dimensional Logistic Rasch Model.
- IRT with Polychotomous Response Format

(b) Steps of preparing a research tool.

- Validity (Meaning, types, indices and factors affecting validity)
- Reliability (Meaning, types, indices and factors affecting reliability)

- Item Analysis (Discrimination Index, Difficulty Index)
 - Index of Measurement Efficiency.
 - Standardisation of a tool.
- (c) Tools of Research
- Rating Scale
 - Attitude Scale
 - Opinionnaire
 - Questionnaire
 - Aptitude Test
 - Check List
 - Inventory
 - Semantic Differential Scale
- (d) Techniques of Research
- Observation
 - Interview
 - Projective.
- (Tools to be used for collecting data using these techniques to be discussed in detail.)

8. RESEARCH REPORTING

- (a) Format, Style and Mechanics of Report Writing with Reference to
 (i) Dissertation and Thesis and (ii) Paper.
- (b) Bibliography
- (c) Evaluation of Research Report.

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1. Best, J. W. and Kahn, J. Research in Education. (7th ed.) New Delhi: Prentice -Hall of India Ltd. 1997.
2. Borg, B.L. Qualitative Research Methods. Boston: Pearson. 2004.
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PAPER II DATA ANALYSIS TECHNIQUES

100 Marks

1. TYPES OF DISTRIBUTION

- (a) Discrete and Continuous distribution of data.
- (b) Normal Probability Distribution
 - Areas under the normal curve
 - Applications
- (c) Types of Measurement Scale (Nominal, Ordinal, Interval and Ratio)

2. HYPOTHESIS TESTING

- (a) Testing of Hypothesis
- (b) Levels of Significance
- (c) Type I and Type II Errors.
- (d) Power of a test.

3. DESCRIPTIVE DATA ANALYSIS

- (a) Measures of central tendency.
- (b) Variability
- (c) Measures of Divergence from Normality
 - Skewness
 - Kurtosis
- (d) Estimation of Population Parameters of Mean and SD.
- (e) Graphical Presentation of Data.

4. PARAMETRIC TECHNIQUES

- (a) Conditions to be satisfied for using parametric techniques
- (b) Pearson's Coefficient of Correlation
- (c) t-test for comparison of Mean Scores.
- (d) z-test for comparison of r's.
- (e) ANOVA

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- (f) Hotelling's t-test
- (g) Biserial and Point-Biserial r.

5. NON-PARAMETRIC TECHNIQUES

- (a) Spearman's Rho
- (b) Chi-square (Equal Probability and Normal Probability Hypotheses).
- (c) Contingency Coefficient and Chi-square
- (d) Tetrachoric and Phi Coefficients
- (e) Median Test
- (f) Sign Test
- (g) Mann-Whitney U-Test

6. MULTIVARIATE TECHNIQUES OF DATA ANALYSIS

- (a) Partial and Multiple Correlation, Part Correlation.
- (b) Multiple Regression
- (c) Two-way ANOVA
- (d) MANOVA
- (e) ANCOVA.
- (f) Path Analysis
- (g) Factor Analysis
- (h) Canonical Correlation
- (i) Discriminant Analysis

7. USE OF ICT IN DATA ANALYSIS

8. QUALITATIVE DATA ANALYSIS

- (a) Data Reduction and Classification
- (b) Analytical Induction
- (c) Constant Comparison
- (d) Triangulation (Meaning, Purpose and Types).

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PAPER III
QUALITATIVE RESEARCH METHODS

100 Marks

SECTION I: QUALITATIVE RESEARCH METHODS

(50 Marks)

1. **GROUNDING THEORY DESIGNS:** Strengths and weaknesses of grounded theory. Types and key characteristics of grounded theory designs. Steps in conducting a grounded theory research. Criteria for evaluating a grounded theory design.
2. **NARRATIVE RESEARCH DESIGNS :** Meaning and key characteristics of narrative research design. Its types. Steps in conducting narrative research design. Strengths weaknesses of narrative research designs. Criteria for evaluating narrative research.
3. **EVALUATION RESEARCH :** Meaning of evaluation research. Purpose and roles of evaluation (with reference to research). Types of evaluation. Approaches to evaluation : (a) objective- oriented (b) decision-oriented (c) consumer oriented (d) expertise-oriented (e) adversary-oriented and (f) naturalistic and participant - oriented evaluation. Standards for judging the quality of evaluation research.
4. **POLICY RESEARCH :** (A) Meaning of policy analysis. Characteristics of policy analysis methods :focused synthesis, secondary analysis, field experiments, quasi -experiments, large scale experimental and quasi - experimental evaluations.(B) Cost -analysis : Meaning. Modes of cost- analysis . Cost-benefit analysis. Cost- effective analysis. Cost-utility analysis and Cost-feasibility analysis.
5. **MIXED METHOD DESIGNS:** Key characteristics of mixed method designs. Types of mixed method designs: (i) Triangulation, (ii) explanatory and (iii) exploratory designs. Steps in conducting a mixed method study. Strengths and weaknesses of mixed method research.

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PRACTICUM

(50 Marks)

Any two of the following:

1. A critical review of related literature in an area of educational importance.
2. Preparation of a research proposal on a topic of educational relevance.
3. Development of a tool of research.

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