

North Maharashtra University, Jalgaon
Syllabus for course work for Ph.D.

Paper-I: Research Methodology

(For the candidates admitted under the faculties **Arts and Fine Arts, Mental Moral and Social Sciences, Commerce and Management, Education and Law**)

- **Foundation of Research**
 - What is Research?
 - Objectives of Research
 - Scientific Research
 - Research and Theory
 - Conceptual and Theoretical Models

- **Social Science Research**
 - Meaning and Scope
 - Objectivity
 - Limitations of Social Science Research
 - Ethics of Social Science Research

- **Types and Methods of Research**
 - Classification of Research
 - Pure and Applied Research
 - Exploring or Formulative Research
 - Descriptive Research
 - Diagnostic Research/Study
 - Evaluation Research/Studies
 - Action Research
 - Experimental Research
 - Analytical Study of Statistical Method
 - Historical Research
 - Surveys
 - Case Study
 - Field Studies

- **Review of Literature**
 - Need for Reviewing Literature
 - What to Review and for What Purpose
 - Literature Search Procedure
 - Sources of Literature
 - Planning of Review work
 - Note Taking

- **Planning of Research**
 - The planning Process
 - Selection of a Problem for Research
 - Formulation of the Selected Problems
 - Hypothesis Formation
 - Measurement
 - Research Design/Plan

- **Sampling**
 - Sampling Techniques or Methods
 - Choice of Sampling Techniques
 - Sample Size
 - Sampling and Non-Sampling Errors

- **Methods of data collection**
 - Meaning and Importance of Data
 - Sources of Data
 - Use of Secondary Data
 - Methods of Collecting Primary Data
 - Observation Method
 - Experimentation
 - Simulation
 - Interviewing
 - Panel Method
 - Mail Survey
 - Projective Technique
 - Sociometry

- **Tools for data collection**
 - Types of Data
 - Construction of Schedules and Questionnaires
 - Measurement of Scales and Indices
 - Pilot Studies and Pre-tests

- **Field work**
 - The Nature of Field Work
 - Selection and Training of Investigators
 - Sampling Frame and Sample Selection
 - Field Operation
 - Field Administration

- **Processing of Data**
 - Editing
 - Classification and Coding
 - Transcription
 - Tabulation
 - Introduction to Statistical Software: SPSS
 - Graphical Representation

- **Statistical Analysis of Data**
 - Statistical Analysis
 - Measures of Central Tendency
 - Measures of Dispersion
 - Measures of Association/Relationship
 - Regression and Correlation Analysis
 - Hypothesis Testing(For Proportion and Means)
 - Test of Significance

- **Report writing**
 - Types of Reports
 - Planning of Report Writing
 - Research Report Format
 - Principles of Writing
 - Documentation
 - Data and Data Analysis reporting in a Thesis
 - Writing of Report
 - Typing of Report
 - Briefing

Books/References:

Methodology of Research in Social Sciences by O. R. Krishnaswamy and M. Rangnatham
Himalaya publication House, 2005, ISBN: 8184880936

Research Methodology: Methods and Techniques by C. R. Kothari, New Age International
Publishers, ISBN:81-224-1522-9

SPSS online manual

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(For the candidates admitted under the faculties Science, Engineering and Technology and Pharmacy)

- **Foundation of Research**
 - What is Research?
 - Objectives of Research
 - Scientific Research
 - Research and Theory
 - Conceptual and theoretical Models
 - Importance of research methodology in scientific research

- **Types and Methods of Research**
 - Classification of Research
 - Pure and Applied Research
 - Exploring or Formulative Research
 - Descriptive Research
 - Diagnostic Research/Study
 - Evaluation research/Studies
 - Action Research
 - Experimental Research
 - Analytical Study of Statistical Method
 - Historical Research
 - Surveys
 - Case Study
 - Field Studies

- **Review of Literature**
 - Need for Reviewing Literature
 - What to Review and for what purpose
 - Literature Search Procedure
 - Sources of Literature
 - Planning of Review work
 - Note Taking
 - Library and documentation

- **Planning of Research**
 - The planning process
 - Selection of a Problem for Research
 - Formulation of the Selected Problems
 - Hypothesis formation
 - Measurement

- Research Design/Plan
- **Sampling**
 - Sampling Techniques or Methods
 - Choice of sampling Techniques
 - Sample size
 - Sampling and Non-Sampling errors
 - Estimation of Population Proportion and Population Mean
 - Estimation of Standard Error and Confidence Interval
- **Methods of data collection**
 - Meaning and Importance of Data
 - Sources of Data
 - Use of Secondary Data
 - Methods of Collecting Primary Data
 - Observation Method
 - Experimentation, Design of Experiments
 - Simulation
- **Tools for data collection**
 - Types of Data
 - Construction of Schedules and Questionnaires
 - Measurement of Scales and Indices
 - Pilot Studies and Pre-tests
 - Experimental Data Sets
 - Check Sheet
- **Field work**
 - The Nature of Field Work
 - Selection and Training of Investigators
 - Sampling Frame and Sample Selection
 - Field Operation
 - Field Administration
- **Processing of Data**
 - Editing
 - Classification and Coding
 - Transcription
 - Tabulation
 - Introduction to Statistical Software: MINITAB
 - Graphical Representation
 - Measures of Relationship, Simple Regression Analysis
 - Multiple Correlation and Regression, Partial Correlation

- **Statistical Analysis of Data**
 - Statistical Analysis
 - Measures of Central Tendency
 - Measures of Dispersion
 - Measures of Association/Relationship
 - Probability distributions: Binomial, Poisson, Uniform, Normal and Exponential
 - Hypothesis Testing, Confidence Interval
 - Test of Significance
 - Comparison of Two Proportions
 - Comparison of Means(z test, t test, two sample t test, paired-t test)
 - ANOVA
 - Non-parametric Methods

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 - Briefing

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Research Methodology: Methods and Techniques by C. R. Kothari, New Age International Publishers, ISBN:81-224-1522-9

Statistical Methods for Research Workers by Fisher R. A., Cosmo Publications, New Delhi ISBN:81-307-0128-6

Design and Analysis of Experiments by Montgomery D.C. (2001), John Wiley, ISBN: 0471260088

MINITAB online manual