



**Ph. D Syllabus**

**24UC701**

**RESEARCH METHODOLOGY**

**(Common for all)**

<b>Course Category:</b>		<b>Credits:</b>	4
<b>Course Type:</b>	Theory	<b>Lecture -Tutorial- Practice:</b>	4 - 0 - 0
		<b>Semester End Evaluation:</b>	100
		<b>Total Marks:</b>	100

**COURSE CONTENT**

**Unit-I: Research Methodology – An Introduction (09 hours)**

Function of Research - Meaning of Research - Motivation in Research - Significance of Research – Characteristics of Research – Steps involved in Research – Research in Pure and Applied Sciences - Inter Disciplinary Research.

Literature review, Surveying, Synthesizing, critical analysis, reading materials, reviewing, rethinking, critical evaluation, interpretation, Research Purposes, Ethics in research – APA Ethics code

**Unit - II: Defining the Research Problem (09 hours)**

Selecting the Research problem – Necessity of defining the problem – Goals and Criteria for identifying problems for research.

Perception of Research problem – Techniques involved in defining the problem – Source of problems – Personal consideration.

**Unit- III: Research Design (15 hours)**

Formulation of Research design – Need for Research design – Features of a good design – Important concepts related to Research design - Basic Principles of Experimental Designs

**Methods of Data Collection:** Collection of Primary Data, Observation Method,

Interview Method, Collection of Data through Questionnaires, Collection of Data through Schedules, Difference between Questionnaires and Schedules, other methods - Warranty cards, Distributor or store audits, Pantry audits, Consumer panels, Use of mechanical devices, Projective techniques.

**Unit – IV: Processing and Analysis of Data (15 hours)**

Processing Operations, Some Problems in Processing, Elements/Types of Analysis, Statistics in Research, Measures of Central Tendency, Measures of Dispersion, Measures of Asymmetry (Skewness), Measures of Relationship, Simple Regression Analysis, Multiple Correlation and Regression

**Sampling Fundamentals:** Need for Sampling, Some Fundamental Definitions, Important Sampling Distributions, Central Limit Theorem, Sampling Theory, Sandler's A-test, Chi-square Test, Analysis of Variance and Covariance, Multivariate Analysis Techniques, Time Series Analysis.

**Unit-V: Interpretation and Report Writing (12 hours)**

Meaning and Technique of interpretation – Precautions in interpretation – Significance of report writing – Different steps in writing a report – Layout of a Research report.

Types of report – Mechanics of writing a research report – Precautions for writing a research report – Conclusion.

**TEXT BOOKS**

- [1] Research Methodology Methods & Techniques, C.R. Kothari – New Age international Publishers, Reprint 2008.
- [2] A Hand Book of Methodology of Research, Rajammall, P. Devadoss and K. Kulandaivel, RMM Vidyalaya press, 1976.
- [3] Montgomery, D.C., 2017. Design and analysis of experiments. John Wiley & sons

## **REFERENCE BOOKS**

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- [1] Donald H. McBurney, Research Methods, 5th edition, Thomson Learning, ISBN: 81-315- 0047-0, 2006
  - [2] Thesis and Assignment Writing, J. Anderson, Wiley Eastern Ltd., 1997.
  - [3] Research Methodology, Mukul Gupta, Deepa Gupta – PHI Learning Private Ltd., New Delhi, 2011.
  - [4] Fundamentals of Mathematical statistics, S.C. Gupta and V.K. Kapoor, Sultan Chand & Sons, New Delhi, 1999.
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