



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

COURSE CONTENT

RESEARCH METHODOLOGY AND STATISTICAL ANALYSIS											
I SEMESTER											
Course Code	Category	Hours/Week				Credits			Maximum Marks		
		L	T	P	C	CIE	SEE	Total			
20MBA005	CORE	4	0	-	4	40	60	100			
		Contact Classes:45		Tutorial Classes: Nil		Practical Classes: Nil		Total Classes: 45			
Prerequisite: Basic concepts of research											

COURSE OVERVIEW:

This course on Research Methodology and Statistical Analysis provides a comprehensive understanding of research concepts, design, and analytical techniques essential for management decision-making. It begins with an introduction to research, covering types of research, research processes, variable conceptualization, measurement, and ethical considerations. The course then explores research design, including problem formulation, data collection methods, questionnaire design, and sampling techniques. It further develops skills in data organization through classification, tabulation, and graphical representation of univariate, bivariate, and multivariate data. Advanced statistical tools such as t-tests, ANOVA, and Chi-square tests are introduced for hypothesis testing and data analysis. Finally, the course covers time series analysis techniques for forecasting along with effective research report writing, documentation, and citation practices, enabling students to present findings in a structured and professional manner.

COURSE OBJECTIVES:

- To understand the fundamentals of research, including types of research, research process, measurement of variables, and ethical considerations.
- To analyze research design methods, data collection techniques, questionnaire design, and sampling applications.
- To apply tabulation techniques and graphical methods for effective presentation of univariate, bivariate, and multivariate data.
- To evaluate statistical tools such as t-tests, ANOVA, and chi-square tests for hypothesis testing and data analysis.
- To develop skills in time series analysis and research report writing, including data interpretation, documentation, and proper referencing.

COURSE OUTCOMES: After Completion of the course, students should be able to

1. Outline the key concepts, types, measurements, process, variables and ethical aspects of business research.

2. Summarize credible research using appropriate frameworks, methods, sampling, and data collection techniques.
3. Apply statistical techniques for data tabulation, graphical representation, central tendency, dispersion and small sample tests.
4. Interpret data using mathematical methods like ANOVA, correlation and regression.
5. Develop time series breakdown using trend investigation and index numbers for a research report with relevant data.

UNIT-I INTRODUCTION TO RESEARCH: Types of Research, Research Process- Conceptualization of variables and Measurement – Types and measurement of variables – Reliability and validity in measurement of variables- sources of error in measurement- Ethics in business research.

UNIT-II RESEARCH DESIGN: Research Problem- purpose of Research design, Types of Research Design- Experimental research design, Research Design for cross sectional, longitudinal studies. Data Collection Methods & Tools: Types of Data, Sources and Instruments for data, Guidelines for questionnaire, Sampling and its application

UNIT-III TABULATION: TABULATION of Univariate, Bivariate and multivariate data, Data classification and Tabulation, Diagrammatic and graphical representation of data. One dimensional, two dimensional and three- dimensional diagrams and graphs

UNIT-IV STATISTICAL TOOLS T-Distribution-properties and applications, testing for one and two means, paired t test. One Way and Two-Way ANOVA (with and without Interaction). Chi-Square distribution: Test for a specified Population variance, Test for Goodness of fit, Test for Independence of Attributes.

UNIT-V TIME SERIES ANALYSIS AND REPORT WRITING

(a) Components, Models of Time Series–Additive, Multiplicative and Mixed models; Trend Analysis- Free hand curve, Semi averages, moving averages, Least Square methods.

(b) Importance of Report writing, Types of Research Reports, Report Preparation and presentation, Report structure, Report formulation, Guides for effective documentation, Research Briefings. Referencing styles and citation in Business Management Research.

TEXT BOOKS:

- Research Methodology: Methods and Techniques – C. R. Kothari & Gaurav Garg – New Age International Publishers – 4th Edition – 2019
- Research Methodology – Vinod Chandra & Anand Harindran – Pearson Education India – 1st Edition – 2017
- Research Methodology – Suresh Chandra, Mohit Kumar Sharma & Mohit Kr. Sharma – Alpha Science International – Illustrated Edition – 2013
- The Craft of Research – Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams, Joseph Bizup & William T. Fitzgerald – University of Chicago Press – 5th Edition – 2024

- Research Methodology and Statistical Analysis – Dr. D. Obul Reddy & Dr. O. R. Krishnaswamy – Himalaya Publishing House – Latest Edition – 2021
- Research Methods for Business: A Skill Building Approach – Uma Sekaran & Roger Bougie – John Wiley & Sons – 9th Edition – 2026
- Statistics for Management – Levin, Richard I. & Rubin, David S. – Pearson Education – 8th Edition – 2017

REFERENCE BOOKS:

- Shashi.K. Gupta, P Rangi, Research Methodology: Methods, Tools & Techniques, Kalyani Publishers,6e, 2020
- .Donald R Cooper, Pamela S. Schindler, Business Research Methods, Tata Mc Graw Hill, 12e, 2019.
- William G Zikmund, Barry J Babin, Jon C. Carr, Atanu Adhikari, Mitch Griffin , Barry J. Babin, Business Research Methods Cengage Learning, 2012.
- Prahalad Mishra, Business Research Methods, Oxford University Press, 2015
- Naval Bajpai, Business Research Methods, Pearson Publications, 2e 2017
- P.C. Tulsian, Bharat Jhunjunwala, Business Statistics, S. Chand, 2016

ELECTRONIC RESOURCES:

1. <https://in.sagepub.com/en-in/ind/research-methods-resources>
2. https://www.classcentral.com/subject/research-methodology?utm_source=chatgpt.com
3. https://www.socialpsychology.org/methods.htm?utm_source=chatgpt.com
4. <https://nptel.ac.in/courses>
5. <https://www.socr.umich.edu/>

MATERIALS ONLINE:

1. Course template
2. Tutorial question bank
3. Tech talk and Concept Video topics
4. Open-ended experiments
5. Definitions and terminology
6. Assignments
7. Model question paper – I
8. Model question paper – II
9. Lecture notes
10. PowerPoint presentation
11. Drishya Siksha Sangrah (DSS) Videos

