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

EMPOWERING THROUGH INNOVATIONS
MLRS

COURSE CONTENT

RESEARCH METHODOLOGY AND STATISTICAL ANALYSIS									
I Semester: MBA									
Course Code	**Category**	**Hours/Week**			**Credits**	**Maximum Marks**			
		L	T	P	C	CIE	SEE	Total	
25MB004	**CORE**	4	0	-	4	40	60	100	
Contact Classes:60	**Tutorial Classes:** Nil	**Practical Classes:** Nil				**Total Classes:** 60			
Prerequisite: Basic concepts of research									

COURSE OVERVIEW:

This course provides a comprehensive foundation in business research and statistical analysis. It begins with an introduction to research concepts, scope, ethics, variables, and the overall research process. It then examines research design, sampling techniques, data collection methods, measurement, scaling, reliability, and validity. The course further develops analytical skills through data classification, tabulation, graphical representation, measures of central tendency and dispersion, hypothesis testing, and small sample tests. Advanced topics such as ANOVA, chi-square tests, correlation, regression, discriminant and factor analysis are also covered. Finally, it introduces time series analysis and emphasizes effective research report writing, documentation, and referencing in business management research.

COURSE OBJECTIVES:

- To introduce the basic concepts of research and measurement of variables.
- To impart knowledge on research design and various data collection tools and methods for research process.
- To describe Tabulation and graphical representation of One, Two, Three-Dimensional Data and various small sample tests.
- To study the significance of statistical tools for analysis and interpretation of Qualitative & Quantitative data
- To introduce the concepts of time series analysis and report writing.

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

1. Summarize the basic concepts of research and measurement of variables.
2. Interpret various types of research design and data collection tools and methods for research process.
3. Apply different methods of representing data through Graphs and Tables and various small sample tests used for hypothesis testing.
4. Analyze the application of suitable statistical tools for interpretation of Qualitative &

Quantitative data
5. Examine time series data analysis and importance of writing research report.

Unit – I: Introduction to Research: Meaning, Scope, Role of Business Research, Types of Research, Research Process, Conceptualization of Variables and Measurement, Types and Measurement of Variables, 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, Characteristics of Good Research Design, Sampling and its Applications. Data Collection Methods & Tools: Types of Data, Sources and Instruments for Data, Guidelines for Questionnaire, Sampling and its Application. Measurement and Scaling, Reliability and Validity in Measurement of Variables, Sources of Error in Measurement.

Unit – III: a) 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. Introduction to Statistics, Measurement of Central Tendency and Dispersion. **b) Small Sample Tests**: t-Distribution, Properties and Applications, Testing for One and Two Means, Paired t-Test, Hypothesis Formulation and Testing.

Unit – IV: a) **Analysis of Variance:** 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. b**) Correlation Analysis**: Correlation, Limits for Coefficient of Correlation, Karl Pearson's Coefficient of Correlation, Spearman's Rank Correlation, Linear and Multiple Regression Analysis, Discriminant Analysis, Exploratory Factor Analysis.

Unit–V: Time Series Analysis and Report Writing:
Components, Models of Time Series, Additive, Multiplicative and Mixed Models, Trend
Analysis: Free hand Curve, Semi Averages, Moving Averages, Least Square Methods.
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:
- S.P. Gupta, Statistical Methods, Sultan Chand & Sons, 46e, 2021.
- Gerald Keller, Statistics for Management and Economics, Cengage, 12e, 2025
- S.C. Gupta, Fundamentals of Statistics, Himalaya Publishing House, 8e, 2023
- P.C. Tulsian, Bharat Jhunjhunwala, Business Statistics, S. Chand Publishing, 2016.

REFERENCE BOOKS:

- Donald R. Cooper & Pamela S. Schindler – *Business Research Methods* (Tata McGraw Hill)
- Shashi K. Gupta & P. Rangi – *Research Methodology: Methods, Tools & Techniques* (Kalyani Publishers)
- Deepak Chawla & Neena Sondhi – *Research Methodology: Concepts & Cases* (Vikas Publishing)
- S.P. Gupta – *Statistical Methods* (Sultan Chand & Sons)
- Gerald Keller – *Statistics for Management and Economics* (Cengage Learning)

ELECTRONIC RESOURCES:

1. http://socialresearchmethods.net/kb/
2. http://www.coursera.org/browse/social-sciences/research
3. http://www.edx.org/learn/data-analysis
4. http://www.khanacademy.org/math/statistics-probability
5. http://nptel.ac.in/courses

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. Drshya Siksha Sangrah (DSS) Videos