



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

DATA ANALYTICS								
I Semester: CE / CSD / CSE / CSM / ECE / EEE / ME								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
24X0533	P.E	L	T	P	C	CIA	SEE	Total
		3	0	0	3	40	60	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes: 45			
Prerequisites: There are no prerequisites to take this course.								

Course Overview:

This course provides a comprehensive foundation in C programming, focusing on problem-solving, structured program design, and efficient implementation of algorithms. Students will develop logical thinking skills and gain hands-on experience in designing, implementing, and testing programs using core features of the C language.

Course Objectives:

1. To explore the fundamental concepts of data analytics.
2. To learn the principles and methods of statistical analysis
3. Discover interesting patterns, analyze supervised and unsupervised
4. models and estimate the accuracy of the algorithms.
5. To understand the various search methods and visualization techniques.

Course Outcomes: After Completion of the Course, Students should be able to

1. Understand the impact of data analytics for business decisions and strategy
2. Perform data analysis/statistical analysis
3. Do standard data visualization and formal inference procedures
4. Design Data Architecture
5. Utilize various Data Sources

UNIT – I:

Data Management: Design Data Architecture and manage the data for analysis, understand various sources of Data like Sensors/Signals/GPS etc. Data Management, Data Quality(noise, outliers, missing values, duplicate data) and Data Processing & Processing

UNIT - II:

Data Analytics: Introduction to Analytics, Introduction to Tools and Environment, Application of Modeling in Business, Databases & Types of Data and variables, Data Modeling Techniques, Missing Imputations. Need for Business Modeling.

UNIT - III:

Regression – Concepts, Blue property assumptions, Least Square Estimation, Variable Rationalization, and Model Building etc. Logistic Regression: Model Theory, Model fit Statistics, Model Construction, Analytics applications to various Business Domains etc.

UNIT - IV:

Object Segmentation: Regression Vs Segmentation – Supervised and Unsupervised Learning, Tree Building – Regression, Classification, Overfitting, Pruning and Complexity, Multiple Decision Trees etc. Time Series Methods: Arima, Measures of Forecast Accuracy, STL approach, Extract features from generated model as Height, Average Energy etc. and analyze for prediction

UNIT - V:

Data Visualization: Pixel-Oriented Visualization Techniques, Geometric Projection Visualization Techniques, Icon-Based Visualization Techniques, Hierarchical Visualization Techniques, Visualizing Complex Data and Relations

TEXT BOOKS:

1. Student's Handbook for Associate Analytics – II, III.
2. Data Mining Concepts and Techniques, Han, Kamber, 3rd Edition, Morgan Kaufmann Publishers.

REFERENCE BOOKS:

- Introduction to Data Mining, Tan, Steinbach and Kumar, Addison Wisley, 2006.
2. Data Mining Analysis and Concepts, M. Zaki and W. Meira
 3. Mining of Massive Datasets, Jure Leskovec Stanford Univ. Anand Rajaraman Millway Labs Jeffrey D Ullman Stanford Univ

ELECTRONIC RESOURCES:

1. <https://www.geeksforgeeks.org/data-analytics-language/>
2. <https://www.programiz.com/data-science>
3. <https://www.w3schools.com/c/>
4. <https://www.codechef.com/learn/course/c>

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. E-Learning Readiness Videos (ELRV)