



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

(Autonomous)

Department of Artificial Intelligence

(Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)
(Aziz Nagar, C.B. Post, Hyderabad -500075)

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Introduction to Data Science (PE - 1)

Course Outcomes:

- Understanding the fundamental concepts of Data Science
- Understanding how data is collected, managed and stored for data science
- Understand the real-world applications of data scientists
- Visualize and present the inference using various tools
- Implement data collection and management scripts using MongoDB

UNIT – I

Introduction to core concepts and technologies:

Introduction to Data Science, Terminology, Data Science Process, Data Science Toolkit, Types of Data, Example Applications, Data Science Tools, Applications of Data Science

UNIT – II

Data Collection and Management:

Sources of data, Data Collection and APIs, Exploring and Fixing Data, Data Storage and Management, Using Multiple Data Sources

UNIT-III

Data Analysis:

Terminology and Concepts, Applying statistics, Central Tendencies and Distributions, Variance, Distribution Properties and Arithmetic, Samples/CLT, Basic Machine Learning Algorithms, Linear Regression, SVM, Naive Bayes.

UNIT-IV

Data Visualization:

Types of data Visualization, Data for Visualization: Data Types, Data Encodings, Retinal Variables, Mapping Variables to Encodings, Visual Encodings

UNIT-V

Different Technologies for Visualization, Bokeh (Python), Recent Trends in Various Data Collection and Analysis Techniques, Various Visualization Techniques, Application Development methods of used in Data science

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TEXT BOOKS :

1. Cathy O'Neil, Rachel Schutt, "Doing Data Science, Straight Talk from The Frontline", O'Reilly
2. Davy Cielen, Arno D. B. Meysman, Mohamed Ali, "Introducing Data Science", Manning Publications Co., 1st Edition, 2016

REFERENCE BOOKS :

1. Jure Leskovek, Anand Rajaraman, Jeffrey Ullman, "Mining of Massive Datasets", v2.1, Cambridge University Press, 2014.
2. Joel Grus, "Data Science from Scratch: First Principles with Python", O'Reilly, 1st Edition, 2015

BOS Members' Signatures :-

1. DR. SIDDHARTHA GHOSH Chairman , BOS for AI&DS, VJIT	2. DR. O.B.V. RAMANAIAH JNTUH Nominee	3. DR. MV KRISHNAMURTHY MD, UOSD Pvt. Ltd.	4. MR. PRASAD YERRAMSETTI Lead Program Manager in Data Science, Microsoft
5. MR. GOPALKRISHNA MADDIPATLA Director of Intelligence Automation (ML) Practice, EPAM Solutions, Hyderabad	6. DR. PADMAJA SAVARAM, HOD, CSE, Keshav Memorial Institute of Technology, Hyderabad	7. DR.V. VIJAYA KUMAR DEAN CSE & IT, Anurag Group of Institutes	8. DR.B. VIJAYA KUMAR HOD, CSE, VJIT
			DATE OF BOS MEETING
9. DR. K. VASANTH HOD, ECE, VJIT	10. DR. D ARUNA KUMARI Professor in CSE, VJIT	11. PROF. B. SRINIVASULU HOD, IT, VJIT	23 – 06 – 2020