

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2024-2025

Semester: 6th Discipline: Comp. Sci. and Engg.

Subject: DSA (Data Science and Analytics)

Name of the Teaching Faculty: Sunita Mahapatra

Subject: DSA No. of Days/per week class allotted: 04
 Semester From Date: 4.2.2025 To Date: 17.5.2025 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
<u>1st</u>	1	Introduction to Data Science
	2	Data Science, convergence of various knowledge domains
	3	Related Terminologies
	4	Methods of Data Repositories
<u>2nd</u>	1	personnel involved in Data Science
	2	Types of Data
	3	Data Science process
	4	popular Data Science Toolkits
<u>3rd</u>	1	Data Science projects Life cycle
	2	Existing Applications
	3	Introduction to data management using IBM SPSS
	4	Data management planning

Sunita Mahapatra

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Subject: DSA No. of Days/per week class allotted : 04
 Semester From Date : 4.8.2025 To Date: 17.5.2025 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
<u>4th</u>	1	data management plan
	2	data collection and management
	3	methods, documentation
	4	Application of programming interface
<u>5th</u>	1	Explaining data and building models
	2	Storage Management
	3	importing data, IBM SPSS
	4	Examples of IBM SPSS
<u>6th</u>	1	Introduction to data Analysis using 'R' prog. Language.
	2	Applied statistical techniques, Types of statistical data
	3	Types of Big Data Analytics
	4	collecting data for sampling and distribution

Lakshmi Mahapatra

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Week	Class Day	Theory / Practical Topics
<u>7th</u>	1	probability, frequency distribution
	2	population and parameters, central tendency
	3	central value, measurement of central tendency
	4	Different types of statistical means
<u>8th</u>	1	Estimation problem
	2	Normal distribution curve
	3	introduction to data visualization
	4	importance of data visualization
<u>9th</u>	1	Types of variables
	2	data visualization methods
	3	visual perception and data visualization
	4	Mapping of data visualization

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Week	Class Day	Theory /Practical Topics
<u>10th</u>	1	variables and encoding
	2	choosing appropriate encodings
	3	Application of Data Science, Technologies for visualization
	4	python programming
<u>11th</u>	1	development environment of python
	2	Data types, operations
	3	modules
	4	Library
<u>12th</u>	1	Loop in python
	2	The pythonpath variable
	3	Different functions in python
	4	pycharm, matplotlib

Lunita mahapatra
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Semester From Date : 4.2.2025 To Date: 17.05.2025 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
<u>13th</u>	1	Histograms, Scatter plots
	2	Introduction to Bokeh
	3	Introduction to recent trends in data science
	4	Data collection and Analysis techniques
<u>14th</u>	1	Importance of things
	2	Big data visualization tools and visualizing
	3	Edge computing, cloud computing
	4	Importance of Big Data visualization
<u>15th</u>	1	Visualizing Big Data
	2	Challenges of Big Data visualization
	3	Potential solution
	4	Future progress of Big Data visualization

Sumita Mahapatra
Signature of the Faculty