

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF  
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN  
Session-2023-2024

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

Subject: Data Science and Analytics (DSA)

Name of the Teaching Faculty: Sunita Mahapatra

Subject: DSA No. of Days/per week class allotted : 04

Semester From Date : 16-01-2024 To Date : 26-04-2024 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 Repository
<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

*Sanita Mahapatra*  
Signature of the Faculty



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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 Analytics using R programming language.
	2	Applied statistical techniques, Types of statistical data
	3	Types of Big Data Analytics
	4	Collecting data for sampling and distribution

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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

*Surita Mahapatra*  
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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	Loops in Python
	2	The PYTHONPATH variable
	3	Different Functions in Python
	4	pygame, matplotlib

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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	Internet 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

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