

Lesson Plan

Faculty Name : Dr. Arushi Bansal
 Subject : Introduction to Data Science (OE/CSE/9-T)
 Semester : ME 6th SEM
 Work Load : 03 hrs. /week

Week	Theory		Topic Covered Date and Remarks		
	Lecture-Day	Topic (Including Assignment/Test)	Date	HOD	Director-Principal
1.	1.	Evolution of Data Science			
	2.	Introduction to Data Science – Types of Data			
	3.	Data Science Vs Big Data			
2.	4.	Concept of Big Data			
	5.	Concept of Big Data			
	6.	Concept of Data Warehousing			
3.	7.	Introduction to Data Mining			
	8.	Role of Data Scientist			
	9.	Data Science Life Cycle			
4.	10.	Data Science Roles – Data Science Project Stages			
	11.	Data Science Roles – Data Science Project Stages			
	12.	Data Science Applications in Various Fields			
5.	13.	Data Science Applications in Various Fields			
	14.	Data Security Issues			
	15.	Data Security Issues			
6.	16.	Way to solve data science problem statements			
	17.	Need of Data Pre-processing			
	18.	Pre-processing of data			
7.	19.	Data collection			
	20.	Data Pre-Processing Overview			
	21.	Data Cleaning			
8.	22.	Data Integration and Transformation			
	23.	Data Reduction			
	24.	Data Discretization			
9.	25.	Data Storage and management			
	26.	Data Storage and management			
	27.	Data preparation with Sandbox for analytics			
10.	28.	Simple Regression			
	29.	Linear Regression			
	30.	Visual Model Evaluation			
11.	31.	Visual Model Evaluation -Residual Plot			
	32.	Visual Model Evaluation -Distribution Plot			
	33.	Polynomial Regression and Pipelines			
12.	34.	Polynomial Regression and Pipelines -Residual Plot			
	35.	Polynomial Regression and Pipelines -Distribution Plot			
	36.	In- sample Evaluation Measures			
13.	37.	Prediction and Decision Making			
	38.	Metrics for Out-of-Sample Evaluation Error			
	39.	Metrics for Out-of-Sample Evaluation Error			
14.	40.	Cross Validation			
	41.	Over fitting			
	42.	Under fitting			
15.	43.	Model Selection			
	44.	Ridge Regression Prediction			
	45.	Grid Search Testing Multiple Parameters			
16.	46.	Grid Search Testing Multiple Parameters			
	47.	Data handling			
	48.	Data wrangling using Python Definition			