20IT2701A - FUNDAMENTALS OF DATA SCIENCE

Offering Branches	IT		
Course Category:	Open Elective -III	Credits:	3
Course Type:	Theory	Lecture-Tutorial-Practical:	3-0-0
Prerequisites:	DATA MINING	Continuous Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	**Understand** the basic concepts of Data Science	K2
CO2	**Apply** different modelling methods	K3
CO3	**Discuss** the concepts of web mining	K2
CO4	**Analyze** the different modelling methods	K4

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3												3	
CO2	3	3	3										3	
CO3	3		3										3	
CO4	3	3											3	
Avg.	**3**	**3**	**3**										3	

1- Low **2-Medium** **3-High**

Course Content

UNIT-1	**Introduction to data science:** The Data Science process: Roles in a data science project, stages of a data science project **Managing Data:** Cleaning data, Sampling for modeling and validation	CO1
UNIT-2	**Modelling Methods:** Choosing evaluating models: Problems to machine learning tasks, Evaluating models,	CO1 CO2 CO4
UNIT-3	**Linear and Logistic Regression:** **Using Linear Regression:** Understanding Linear regression ,building a linear regression model, Making Predictions **Using Logistic Regression:** Understanding Logistic Regression, building a Logistic regression model, Making Predictions	CO1 CO2 CO4
UNIT-4	**Unsupervised methods:** **Clustering Analysis:** Preparing Data, K-Means Algorithm **Association Rules:** Overview of Association rules, Mining Associations rules	CO1 CO2 CO4
UNIT-5	**Web Mining** :Web Content mining, Web structure mining, Web usage mining, Text mining, Unstructured Text, Episode rule discovery for text ,Text Clustering	CO1 CO3

Learning Resources

Text Books	1. Nina Zumel, John Mount: Practical Data Science with R , Dreamtech, 2015 2. Data Mining Techniques 3rd Edition Arun K Pujari 2013
E-Resources & other digital material	http://nptel.ac.in