JGI JAIN DEEMED-TO-BE UNIVERSITY | SCHOOL OF COMPUTER SCIENCE AND IT

DEPARTMENT OF BACHELOR OF COMPUTER APPLICATIONS

TITLE	EMERGING TECHNOLOGIES IN COMPUTER SCIENCE
SUBJECT CODE	
HOURS PER WEEK	3 Hrs/Week
CREDITS	3

COURSE OBJECTIVES	
COB1	To provide the most fundamental knowledge to the students about emerging technologies in computer science
COB2	Explore the current scope, potential, limitations, and implications of EMERGING TECHNOLOGIES
COB3	To demonstrate use cases of emerging technologies in current and futuristic scenarios.

COURSE OUTCOMES	
CO1	Fundamental understanding of the history of artificial intelligence (AI) and its foundation to apply the basic principle of AI.
CO2	Demonstrate the usage of different machine learning models in real time applications.
CO3	Recognize and explore the basics of IoT.
CO4	Exploring data mining and to carryout the analysis using predictive model to support business decision making.
CO5	Interpret various concepts of cyber security and cyber laws.

SYLLABUS				
Module No	**Contents**	**Assessments and Activity**	**CO Mapping**	**PO Mapping**
Module 1 (9 Hours)	**Artificial Intelligence and Robotics:** A brief review of AI, History of AI, working concepts of AI, Introduction to Robotics: History of Robotics, building a basic robot using cardboard.	Usage of WEKA Tool, Model Making	CO1	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12
Module 2 (9 Hours)	**Machine Learning:** Introduction to ML, Types of ML Models, supervised, unsupervised and reinforcement learning, use-cases of ML.	Exploratory data analysis (MNIST Data Set), tool based learning.	CO2	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12
Module 3 (9 Hours)	**Internet Of Things:** Brief review of IoT, History of IoT, Current Scenario, Use-cases of IoT, basic examples of IoT.	Exploring google home and Alexa Architecture, Linked-in Learning Certification.	CO3	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12
Module 4 (9 Hours)	**Big Data Analytics:** Defining Data, types of data, Structured and semi structured data, Different source of data generation, understanding RDBMS and why it is failing to store big data, Uses-cases of Bigdata.	Tool based learning-Hadoop, Linked-in Learning Certification.	CO4	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12
Module 5 (9 Hours)	**Cyber Security:** Fundamentals of Security, terminologies, CIA Triad, computer security policies, types of cyber-crime, cyber security initiatives in India, Cyber laws.	Scenario Based Learning, Technology based puzzles.	CO5	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12

Textbook and References	
1	Introduction to AI Robotics, Robin R Murphy, MIT Press, 2000 Publication.
2	Introduction to Machine Learning, Ethem Alpaydin, MIT Press,2nd Edition, 2010 Publication.
3	Designing the Internet of Things, Adrian McEwen and Hakim Cassimally, Wiley Publication, 2014, ISBN: 9781118430620.
4	Analytics in a Bigdata World - The Essential Guide To Data Science And Its Applications, Bart Baesens, Wiley Publication,2014 Copyright.ISBN : 9781118892718
5	Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives, Nina Godbole and Sunit Belapure, Wiley India,2011

CO-PO Mapping (3-strong, 2-Good, 1-Weak)												
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	1	-	2	2	3	-	-	2	2	2	3	2
CO2	1	2	2	2	3	-	-	-	2	-	2	-
CO3	1	2	3	3	3	-	-	2	2	2	2	2
CO4	2	3	2	2	3	-	-	1	2	-	2	-
CO5	2	3	1	3	3	3	2	-	2	3	2	-