COURSE TITLE	**ADVANCE MACHINE LEARNING**
COURSE CODE	**01CT0816**
COURSE CREDITS	**3**

Objective:

1 The course has been kept flexible so that Instructor can choose special topics which have evolved or added in this area. It has been specially designed in this way, to cover up all the latest tools, research and industry relevant content and the gaps due to the fast changes happening in the technology

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Course Outcomes: After completion of this course, student will be able to:

1 To familiarize and learn about the latest trends and research in the field.

2 To equip themselves with the conceptual and practical experience of few latest methods, tools, technologies or algorithms in Machine Learning.

3 Understand the mathematics necessary for constructing novel machine learning solutions.

4 Be able to design and implement various machine learning algorithms in a range of real-world applications

Pre-requisite of course: Programming, Algorithms, Data Structures, Machine Learning, Artificial Intelligence

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	0	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	**Module** Major focus of the course will be on Relational Machine Learning, Bayesian Machine Learning, Graph learning, Reinforcement learning, Causal inference, handling bias and variance in the dataset, variational methods, etc. The course includes understanding the implementation of Machine Learning concepts to predict, classify, cluster or generate from the real time data dealing with different fields like Bioinformatics, Transportation, Logistics, Security, Education, Healthcare, Environment, Military, etc.	42
Total Hours		**42**

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DR. RAJENDRASINH BAHADURSINH JADEJA
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Textbook :

1 Deep Learning (Adaptive Computation and Machine Learning), Aaron Courville, Ian Goodfellow, and Yoshua Bengio, MIT Press Ltd, 2015

References:

1 Machine Learning, Machine Learning, S Sridhar , M Vijayalakshmi, Oxford University Press, 2021

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
10.00	20.00	30.00	40.00		

Instructional Method:

1 Students may use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory, etc.

Supplementary Resources:

1 MOOC Course, NPTEL, COURSERA, Udemy, Infosys, Springboot, SWYAM etc. Online learning platform

2 https://ml2.inf.ethz.ch/courses/aml/

3 https://www.futurelearn.com/courses/advanced-machine-learning

4 https://developers.google.com/machine-learning/advanced-courses

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