GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering (Minor/Honours Degree Syllabus)

Subject Code : 116AG02

Subject Name : Special topics in Artificial Intelligence

WEF Academic Year :	2021-22
Semester :	6
Category of the Course :	Compulsory

Course Objective : To give fundamental knowledge to the students so that they can understand what the AI is and study important topics related to the field.

Course Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
				Theory		Practical		
L	T	PR	C	ESE (E)	PA(M)	ESE (V)	PA (I)	
03	00	00	03	70	00	00	00	70

Course Content :

Sr. No.	Course Content	No. of Hours	% of Weightage
1	**Module 1 :** Bayesian Filtering; Recurrent Neural Networks, Deep Neural Networks, Deep Reinforcement Learning.	9	20
2	**Module 2 :** Self-Play Networks, Generative Adversarial Networks, Learning from Concept-Drifting Data Streams.	7	15
3	**Module 3 :** Audio Signal Processing Basics, mirtoolbox contains many useful audio processing library functions, VOICEBOX: Speech Processing Toolbox for MATLAB, Audio processing in Matlab.	9	20
4	**Module 4 :** Architectures for second generation knowledge based systems, Distributed AI and its applications.	10	30
5	**Module : 5** An introduction to neurocomputing and its possible role in AI, The role of uncertainty measures and principles in AI.	7	15
	Total	**42**	**100**

Reference Book :

1. Dr. Nilakshi Jain, Artificial Intelligence: Making a System Intelligent, John Wiley & Sons.
2. Artificial Intelligence & Soft Computing for Beginners, 3rd Edition-2018, by Anindita Das, Shroff Publisher Publisher.
3. Artificial Intelligence: A Modern Approach, 3rd Edition, by Stuart Russell and Peter Norvig, Pearson Publisher.
4. New Artificial Intelligence (Advanced), Takashi Maeda and Fumio Aoki, Ohmsha Publisher.

Course Outcome :

After Completion of the Course, Student will able to :

No	Course Outcomes	RBT Level*
01	To understand various AI techniques.	UN
02	To decide when to use which type of AI technique.	RM

*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

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