VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE::VIJAYAWADA

(AUTONOMOUS)

DEPARTMENT OF IT

MICRO LEVEL SYLLABUS

Class	**B Tech**	**Regulation**	**VR20**
Subject Code	**20IT5205A**	**Year & Semester**	**III / I**
Title of the Subject	**AI TOOLS, TECHNIQUES AND APPLICATIONS**		

Unit No	Content/Topics Covered (Mention Sub Topics as found in books)	Text Book	Chapter/ Section No.	Page Number
Unit I	Introduction	[T1]	1/1.1	1
	Foundations of AI		1/1.2	5-16
	Solving Problems by Searching		3	59
	Problem-Solving Agents		3/3.1	59-64
	Searching for Solutions		3/3.3	69-73
	Uninformed Search Strategies		3/3.4	73-81
	Constraint Satisfaction Problems		5/5.1	137-141
	Backtracking Search for CSPs		5/5.2	141-150
	Logical Agents - Knowledge-based Agents		7/7.1	195-197
	Wumpus World		7/7.2	197-200
	Logic		7/7.3	200-204
	Propositional Logic		7/7.4	204-211
	First order logic		8/8.1	240-244
	Syntax and Semantics of First-Order Logic		8/8.2	245-253
Unit II	Uncertainty - Acting under Uncertainty	[T1]	13/13.1	462-466
	Basic Probability Notation		13/13.2	466-471
	Bayes' Rule and its Use		13/13.6	479-482
	Probabilistic Reasoning		14	492
	Representing Knowledge in an Uncertain Domain		14/14.1	492-495
	Learning		18	649
	Learning from observations-Forms of Learning		18/18.1	649-651
	Inductive Learning		18/18.2	651-653
	Learning decision trees		18/18.3	653
	Decision trees as performance elements		18/18.3	653-654
	Expressiveness of decision trees		18/18.3	655
	Inducing decision trees from examples		18/18.3	655-659
	Choosing attribute tests		18/18.3	659-660
Unit III	Natural Language Processing	[T2]	2	9-10
	Overview of NLP		2	10-11
	The Components of NLP		2	11-12
	Enterprise Applications of NLP		2	12-15
	Usage of NLP		2	15-16
	Challenges of NLP		2	17
	Chatbots: Introduction		3	19
	The Rise of Chatbots		3	20
	NLP in the cloud		3	20
	NLP Interface		3	21
	Building a Chatbot		3	21-28

	Challenges of Building a Successful Chatbot		3	28
	Best practices for chatbot development		3	28-33
	Industry Case Studies		3	34-35
Unit IV	Introduction to Reinforcement Learning	[T1]	21/21.1	763-764
	Game Playing [Deep Blue in Chess, IBM Watson in Jeopardy, Google's DeepMind in AlphaGo],		Web Resource3	https://stanford.edu/~cpiech/cs221/apps/deepBlue.html
	Agents and Environment		2/2.1	32-34
	Action-Value Function		21/21.3	775-777
	Deep Reinforced Learning		Web Resource4	https://medium.com/@jonathan_hui/rl-introduction-to-deep-reinforcement-learning-35c25e04c199
	Applications: Robotics, Gaming		Web Resource5	https://www.analyticsindiamag.com/reinforcement-learning-goes-beyond-gaming-robotics-will-become-a-game-changer-in-2019/