GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 6th Semester
Branch: Sowtware Development
Subject Name: Artificial Intelligence Lab.
Subject Code: 1160205

Type of course: Core

Prerequisite: Data Structures

Rationale: With the usage of Internet and World Wide Web increasing day by day, the field of AI and its techniques are being used in many areas which directly affect human life. Various techniques for encoding knowledge in computer systems such as Predicate Logic, Production rules, Semantic networks find application in real world problems. The fields of AI such as Game Playing, Natural Language Processing, and Connectionist Models are also important. Student should know some programming language for AI.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE (E)	PA(M)	ESE (V)	PA(I)	
0	0	2	2	0	0	30	20	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Practical List:

Sr. No.	Practical / Hands on Exercise	Hrs.
1	Study of PROLOG.	2
2	Write a Prolog Program for: a. Find Factorial of a given number. b. To perform union and intersection of two lists. c. To solve tower of Hanoi problem using recursion.	4
3	Write a program to solve N-Queens problem using Prolog.	2
4	Write a program to implement Tic-Tac-Toe game problem using Prolog.	2
5	Write a program to implement BFS for missionaries and cannibals Problem using Prolog.	2
6	Write a program to implement DFS for Water Jug Problem using Prolog.	2
7	Write a program to implement Best First Search for 8-Puzzle Problem using Prolog.	4
8	Solve Robot (traversal) problem using means End Analysis using Prolog.	4
9	Write a program to solve travelling salesman problem using Prolog.	4
10	Write a program to solve Monkey Banana problem using Prolog.	2
	Total	**28**

Reference Books:

1. Artificial Intelligence, Elaine Rich And Kevin Knight, Tata Mcgraw-Hill

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With effective from academic year 2018-19

2. Artificial Intelligence, Ela Kumar, I. K. International
3. Artificial Intelligence, Munish Chandra Trivedi, Khanna Publishing House
4. PROLOG Programming for Artificial Intelligence, Ivan Bratko, Pearson

Suggested Specification table with Marks (Theory): (For BVOC only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	20	20	0	0	0

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Course Outcomes:

Sr. No.	CO Statement	Marks % Weightage
CO-1	Understand various search methods with heuristic.	30
CO-2	Understand various knowledge representation methods.	20
CO-3	Understanding of Natural Language Processing.	30
CO-4	Understanding of Expert System.	20

Laboratory work: NA

List of Open Source Software/learning website :

1.http://www.journals.elsevier.com/artificialintelligence/
2.https://www.technologyreview.com/s/534871/our-fear-of-artificial intelligence/
3.http://www.sanfoundry.com/artificial-intelligence-mcqs-inductive-logic-unification-lifting-1/