



GUJARAT TECHNOLOGICAL UNIVERSITY
Syllabus for Bachelor of Vocation (B.Voc.), 6th Semester
Branch: Information Technology
Subject Name: Introduction to Artificial Intelligence Lab
Subject Code: 1160506

Type of subject: Practical

Prerequisite: Python Programming,

Rationale: AI is increasingly becoming a fundamental technology across various industries. Teaching AI as a practical subject equips students with skills that are directly applicable in the field of AI. Practical exercises enable students to understand theoretical concepts better and develop proficiency in implementing AI algorithms and techniques as per requirement.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE (E)	PA(M)	ESE(V)	PA(I)		
0	0	4	2	0	0	30	20	50

L- Lectures; P- Practical; OJT- On Job Training; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Suggested List of Exercise / Practical:

Sr. No.	Practical/Exercises	Hrs.
1	Study of PROLOG.	8
2	Write a Program to Implement Breadth First Search using Python.	6
3	Write a Program to Implement Depth First Search using Python.	6
4	Write a Program to Implement Tower of Hanoi using Python.	8
5	Write a Program to Implement Water-Jug problem using Python.	8
6	Write a Program to Implement 8-Puzzle problem using Python.	12
7	Write a program to Implement A* algorithm.	8
Total		56

Suggested Specification table with Marks (Practical):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	05	10	10	15	0

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



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Reference Book:

1. Artificial Intelligence by Elaine Rich, Kevin Knight & Shivashankar Nair.
2. Principles of AI & ES Development by David W Rolston.
3. Artificial Intelligence, An Engineering Approach by Robert J Scialkaff

Course Outcomes:

Sr. No.	CO Statement	% Weightage
CO-1	Students will demonstrate proficiency in implementing and analysing search algorithms.	20
CO-2	Students will demonstrate proficiency in solving constraint satisfaction problems.	25
CO-3	Students will understand the concept of recursion and its application in solving complex problems.	25
CO-4	Students will be able to apply heuristic search techniques to solve combinatorial optimization problems.	30

Learning Of Open Source Software/Learning Websites:

1. <https://www.geeksforgeeks.org>.
2. <https://www.tutorialspoint.com>.
3. <https://www.javatpoint.com>.
4. <http://www.journals.elsevier.com/artificial-intelligence/>.
5. <https://www.technologyreview.com/s/534871/our-fear-of-artificial-intelligence>.