AC–11-03-2025
Item No. – 03

Approved by the Bos in Bachelor of Science (Information of Technology) on 13-11-2024 Item No.03

As Per NEP 2020

Tolani College of Commerce (Autonomous)

Title of the Course: Artificial Intelligence

Programme: Bachelor of Science (Information Technology)Semester V

Syllabus for 2 credits Course

From the academic year-2025-2026

Name of the Course: Artificial Intelligence

Sr. No.	Heading	Particulars
1	**Description the course :**	The goals of artificial intelligence include computer-enhanced learning, reasoning, and perception. AI is being used today across different industries from finance to healthcare.
2	**Vertical:**	Vocational Skill Course
3	**Type:**	Theory and Practical
4	**Credit**:	2 credits
5	**Hours Allotted:**	30 Hours
6	**Marks Allotted**:	Total : 50 Marks Practical Evaluation: 20 Marks Semester-End: 30 Marks
7	**Course Objectives**: 1. Apply selected basic AI techniques 2. Artificial intelligence (AI) refers to the simulation or approximation of human intelligence in machines.	
8	**Course Outcomes**: 1. AI system accepts data input in the form of speech, text, image, etc. 2. The system then processes data by applying various rules and algorithms, interpreting, predicting, and acting on the input data.	

9	**Modules**:-
	Module 1: Introduction and Intelligent Agents (15 hours)
	• What is Artificial Intelligence? Foundations of AI, history, the state of art AI today. • agents and environment, good behavior, nature of environment, the structure of agents.
	Module2: Solving Problems by Searching and **Beyond Classical Search (15 hours)**
	• Problem solving agents, examples problems, searching for solutions, uninformed search, informed search strategies, heuristic functions. • local search algorithms, searching with non-deterministic action, searching with partial observations, online search agents and unknown environments.
10	**Reference Books:** 1) **Author/s:** Rahul Deva **Title** :Artificial Intelligence: A Rational Approach, **Publisher** :Shroff publishers , **Edition** :$_1$st, **Year**:2018. 2) **Author/s:** Deepak Khemani **Title** A First Course in Artificial Intelligence, **Publisher** :TMH , **Edition** :First, **Year**:2017.

11	**Internal Continuous Assessment: 20%**	**Semester End Examination: 30%**
12	**Continuous Evaluation through:**	Practical Assessment

13 **Format of Question Paper:**

Scheme of Evaluation Pattern

Table 1A: Scheme of Continuous Evaluation (CE/Practical)

Scheme of Evaluation Pattern

Sub-components	Maximum Marks	Conditions for passing
1) Practical exam	16	A learner must be present for each of the sub-components
2) Journal and Viva	04	
Total	20	

Table 1B: Scheme of Semester End Examination (SEE) Evaluation

Question Paper Pattern for Semester End Examination (SEE)

Maximum Marks: 30 **Duration: I Hrs.**

Note: All questions are compulsory. Each question has an internal choice.

Question Number		Nature of Questions	Maximum Marks
1)		**Attempt any Three**	15
	a)		
	b)		
	c)		
	d)		
	e)		
2)		**Attempt any Three**	15
	a)		
	b)		
	c)		
	d)		
	e)		

Course Name: Artificial Intelligence Practical			
Periods per week (1 Period is 60 minutes)		**2**	
Credits		**1**	
		Hours	**Marks**
Evaluation System	**Practical Examination**	**1**	**20**

Practical No		**Details**
1	a	Write a program to implement depth first search algorithm.
	b	Write a program to implement breadth first search algorithm.
2	a	Write a program to simulate 4-Queen / N-Queen problem.
	b	Write a program to solve tower of Hanoi problem.
3	a	Write a program to implement alpha beta search.
	b	Write a program for Hill climbing problem.
4	a	Write a program to implement A* algorithm.
	b	Write a program to implement AO* algorithm.
5	a	Write a program to solve water jug problem.
	b	Design the simulation of tic – tac – toe game using min-max algorithm.
6	a	Write a program to solve Missionaries and Cannibals problem.
	b	Design an application to simulate number puzzle problem.
7	a	Write a program to shuffle Deck of cards.
	b	Solve traveling salesman problem using artificial intelligence technique.
8	a	Solve the block of World problem.
	b	Solve constraint satisfaction problem
9	a	Derive the expressions based on Associative law
	b	Derive the expressions based on Distributive law
10	a	Write a program to derive the predicate. (for e.g.: Sachin is batsman , batsman is cricketer) - > Sachin is Cricketer.
	b	Write a program which contains three predicates: male, female, parent. Make rules for following family relations: father, mother, grandfather,grandmother, brother, sister, uncle, aunt, nephew and niece, cousin. Question: i. Draw Family Tree. ii. Define: Clauses, Facts, Predicates and Rules with conjunction and disjunction

1	Q.1	08
2	Q.2	08
3	Viva	02
4	Journal	02
5	**Total**	**20**