Course: BTech **Semester:** 5

Prerequisite: Data structure, automata, and languages, Mathematics

Rationale: This course provides a broad introduction to Artificial Intelligence. AI techniques for search and knowledge representation also Apply knowledge of AI planning and machine learning techniques to real-world problems

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
0	0	2	-	1	-	-	20	-	30	50

SEE - Semester End Examination, **CIA** - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Outcome

After Learning the Course the students shall be able to:

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1. Demonstrate knowledge of the building blocks of AI as presented in terms of intelligent agents.
2. Analyze and formalize the problem as a state space, graph, design heuristics and select amongst different search or game-based techniques to solve them.
3. Develop intelligent algorithms for constraint satisfaction problems and design intelligent systems for Game Playing.
4. Attain the capability to represent various real-life problem domains using logic-based techniques and use this to perform inference or planning.
5. Formulate and solve problems with uncertain information using Bayesian approaches.
6. Apply concept Natural Language processing to problems leading to understanding of cognitive computing

List of Practical

1.	**Practical-1** Write a program in prolog to implement simple facts and Queries.
2.	**Practical -2** • Write a python program to print the multiplication table for the given number? • Write a python program to check whether the given number is prime or not? • Write a python program to find factorial of the given number?
3.	**Practical-3** Write a python program to implement simple Chatbot?
4.	**Practical-4** • Write a python program to implement List operations (Nested List, Length, Concatenation, Membership, Iteration, Indexing and Slicing)? • Write a python program to implement List methods (Add, Append, Extend & Delete).
5.	**Practical-5** • Write a python program to Illustrate Different Set Operations? • Write a python program to generate Calendar for the given month and year? • Write a python program to implement Simple Calculator program?
6.	**Practical-6** • Write a python program to Add Two Matrices. • Write a python program to Transpose a Matrix.
7.	**Practical-7** Write a python program to implement Breadth First Search Traversal?
8.	**Practical-8** Write a python program to implement Water Jug Problem?
9.	**Practical-9** Write a program to implement Tic-Tac-Toe game using python.
10.	**Practical-10** • Write a python program to remove stop words for a given passage from a text file using NLTK? • Write a python program to implement stemming for a given sentence using NLTK? • Write a python program to POS (Parts of Speech) tagging for the give sentence using NLTK?
11.	**Practical-11** • Write a python program to implement Lemmatization using NLTK? • Write a python program to for Text Classification for the give sentence using NLTK?

Miscellaneous

Exam Requirement

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.