

## Curriculum Plan (Even Semester 2020-2021)

**Paper Name:** Artificial Intelligence  
**Class Type:** BSc (H)  
**Semester:** VI  
**Teacher Name:** Reshu Chaudhary

S.No.	Schedule (Approximate)	Topic
1	February 2021	<p><b>Introduction:</b> Introduction to AI, Background, Turing Test and Rational Agent approaches to AI, Application of AI</p> <p><b>Introduction to Intelligent Agents,</b> their structure, behaviour and environment</p> <p><b>Problem Solving and Searching Techniques:</b> Problem characteristics, Production Systems, Control Strategies: BFS, DFS, Hill Climbing and its variants.</p> <p><b>Heuristic Search Techniques:</b> Best First Technique</p> <p><b>PROLOG:</b> Introduction to programming in PROLOG, Control Structures, Backtracking, Cut, Recursion</p>
2	March 2021	<p><b>Heuristic Search Techniques:</b> A* algorithm, Constraint Satisfaction Problem, Means-End Analysis</p> <p><b>Introduction to Game Playing:</b> Min-Max Search, Alpha-Beta pruning</p> <p><b>Knowledge Representation:</b> First Order Predicate Knowledge, Resolution Principle, Unification; Semantic Nets, Conceptual Dependencies, Frames and Scripts, Production Rules, Conceptual Graphs</p> <p><b>Understanding Natural Languages:</b> Parsing Techniques Context free and Transformational Grammars</p> <p><b>PROLOG:</b> Lists Manipulation, Parser implementation</p> <p><b>Assignment</b></p>
3	April 2021	<p><b>Understanding Natural Languages:</b> Recursive and Augmented Transition Nets</p> <p><b>Dealing with Uncertainty and Inconsistencies:</b> Truth Maintenance System, Default Reasoning; Probabilistic Reasoning: Bayesian Probabilistic Inference, Possible World Representation</p> <p><b>PROLOG:</b> Semantic Network (ATN/RTN) implementation</p> <p><b>Test, Viva, Revision, Doubts Clearing</b></p>

**References:**

- [1] Dan W. Patterson, Introduction to AI and Expert Systems – PHI 2004.
- [2] Russell & Norvig, Artificial Intelligence – A modern Approach, LPE, Pearson Prentice Hall, 2<sup>nd</sup> Edition, 2005
- [3] Rich & Knight, Artificial Intelligence, Tata McGraw Hill, 3<sup>rd</sup> Edition, 2009.
- [4] Clocksin & Mellish, Programming in Prolog, Springer-Verlag Berlin, 5<sup>th</sup> Edition, 2003.