

Artificial Intelligence Syllabus	
Session 1	
➤ Introduction to Artificial Intelligence	➤ Propositional Logic Language
➤ Semantics and Reasoning, Syntax and Truth Table	➤ Valid Argument and Proof System
Session 2	
➤ Rules of Inference and Natural Deduction	➤ Axiomatic System and Hilbert Style Proofs
➤ The Tableau Method	➤ The Refutation Method
Session 3	
➤ First Order Logic (FOL) Syntax, semantics	➤ Entailment and Models, Proof Systems
➤ Forward Chaining, Unification	➤ Forward Chaining Rule Based Systems
Session 4	
➤ The Rete Algorithm	➤ Programming in a Rule Based Language
➤ The OPS5 Expert System Shell	
Session 5	
➤ Resource Description Framework (RDF)	➤ The Event Calculus: Reasoning About Change
Session 6	
➤ Representation in FOL Skolemization	➤ Knowledge Representation
➤ Properties and Categories	➤ Reification and Abstract Entities
Session 7	
➤ Mapping Natural Language to FOL understanding	➤ Fulfill Expectation, Conceptual Dependency Theory
Session 8	
➤ Programming in Logic Deductive Retrieval in Backward Chaining	➤ Logic Programming, Prolog, Depth First Search and Efficiency Issues, Controlling Search
➤ The Cut Operator in Prolog	
Session 9	
➤ Theorem Proving in FOL Incompleteness of Forward and Backward Chaining	➤ The Resolution Refutation Method for FOL
➤ Clause Form and The Resolution Rule	➤ FOL with Equality, Complexity
Session 10	
➤ Knowledge Structures Semantic Nets using Frames	➤ Scripts, Script Applier Mechanism (SAM), Goals, Plans and Actions
➤ Plan Applier Mechanism (PAM):Expectations and Recognition	➤ PAM: Top Down and Bottom Up Reasoning
Session 11	
➤ Working with Projects based on AI	