Panipat Institute of Engineering & Technology
Department of CSE-AI&DS
LESSON PLAN

Subject: Natural Language Processing **Subject code:** PE-CS-AIDS-429A
Semester: 7th

S.No	Topic	CO covered	Assignment No.	Teaching Methodology
1	Basic Concepts of Natural language Processing	C01	1.Define the key concepts of NLP & the technologies used in Processing of Natural Language.	Smart Board
2	Introduction and uses of key algorithms in the noisy channel paradigm.	Co1	2. Classify Bayesian, MLE and Viterbi Algorithms.	Smart Board
3	Fundamentals of Lexicography, syntax, semantics.	Co1	3. Explain the concept of Natural language heirarchy.	Smart Board
4	Overview of prosody, phonology, pragmatic analysis.	Co1	4. Discuss the classifications in the Fundamentals of NLP.	Smart Board
5	World knowledge and Representation.	Co1		Smart Board
6	Knowledge Representation schemes	Co1		Smart Board
7	Conceptual Dependency and Scripts in knowledge representation.	Co1		PPT
8	Semantic net and Frames.	Co1		PPT
9	Revision & Q& A			PPT
10	Introduction to the concept of Logical Programming.	C02	1.What is logic programming and how is it used?	White Board
11	Basic concepts of LISP Programming. Syntax and Control flow.	Co2	2. Explain the key differences between LISP and Prolog.	Smart Board
12	Introduction to the PROLOG. Programming with Logics. Work flow and Knowledge base.	Co2	3. Briefly describe the Chomsky Hierarchy in formal languages.	White Board
13	Rules based deduction systems.	Co2	4. How are ambiguities resolved in grammars?	PPT
14	General concepts in knowledge acquisition.	Co2		Smart Board
15	Introduction to Computation and Syntax Analysis: Formal Languages and grammars	Co2		Smart Board

16	Chomsky Hierarchy, Left-Associative Grammars, ambiguous grammars, resolution of ambiguities.	Co2		White Board
17	Computation Linguistics: Recognition of Natural Language.	Co3	1. What is the role of ATN and RTN in parsing natural language structures?	PPT
18	Parsing of natural language structures- ATN and RTN	Co3	2. Explain the CKY parsing algorithm.	PPT
19	General Techniques of parsing- CKY, Earley and Tomitas algorithm	Co3	3. Briefly describe semantic networks and their role in knowledge representation.	PPT
20	semantics networks logic and inference pragmatics.	Co3	4. What are graph models used for in computational linguistics?	White Board
21	Introduction to Semantics: Knowledge representation.	Co3		Smart Board
22	Brief of graph models and optimization.	Co3		Smart Board
23	Overview and basics of language processing.	Co4	1. What is the role of LP in intelligent word processors?	Smart Board
24	LP in spell-check, grammar-check, predictive text.	Co4	2. Explain the process of machine translation.	White Board
25	Techniques and uses of machine translation.	Co4	3. Briefly describe the use of LP in speech recognition.	White Board
26	NLP in user interfaces and search queries.	Co4	4. What are the commercial applications of NLP?	White Board
27	LP in enhancing human-computer interaction.	Co4		PPT
28	LP in adaptive tutoring and content generation.	Co4		PPT
29	LP's role in voice recognition technologies.	Co4		Smart Board
30	NLP in chatbots, marketing, and analytics.	Co4		White Board
31	Issues in translation and voice recognition.	Co4		PPT
32	Ethical concerns and data privacy in NLP.	Co4		Smart Board
33	Emerging trends and future applications.	Co4		Smart Board
34	Review and Q&A.			GD
35	Review and Q&A.			GD