PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

LESSON PLAN

Semester: 5th Sem

Subject Name: Formal Language & Automata Theory Subject Code: PC-CS-303A

Sr. No.	Lecture No.	Topics to Be Covered
1	L 1	Study and Central Concepts of Automata Theory, Applications of Finite Automata
2	L 2	Introduction of Deterministic Finite Automata (DFA)
3	L 3	Introduction of Non-Deterministic Finite Automata (NFA)
4	L 4	Finite Automata with Epsilon (€) Transitions
5	L 5	Regular Expressions (RE)
6	L 6	Finite Automata and Regular Expressions
7	L 7	Applications of Regular Expressions, Algebraic Laws of Regular Expressions
8	L 8	Closure Properties of Regular Languages
9	L 9	RE to NFA Conversion
10	L 10	RE to DFA Conversion
11	L 11	DFA to RE Conversion
12	L 12	Equivalence and Minimization of NFA and DFA automata
13	L 13	Parse Trees
14	L 14	Context Sensitive Grammar
15	L 15	Context Free Grammar, Applications of Context Free Grammars
16	L16	Ambiguity in Grammars and Languages
17	L 17	Closure Properties of CFL
18	L 18	Chomsky Theorem
19	L 19	Chomsky Hierarchy
20	L 20	Normal forms of context free grammars: Chomsky Normal Form

21	L 21	Greibach Normal Form
22	L 22	Introduction to Pumping Lemma, pumping lemma for context free languages
23	L 23	Applications of Pumping Lemma, Minimization
24	L 24	Minimization of Finite Automata, and Recursive Language
25	L 25	Mealey Machine: Definitions, Representation
26	L 26	Moore Machine: Definitions, Representation
27	L 27	Equivalence of Moore and Mealey Machines and its Designing
28	L 28	Introduction of Push Down Automata (PDA), Language of PDA
29	L 29	Equivalence of PDA's and CFG's
30	L30	Deterministic Push Down Automata, Designing of PDA
31	L 31	Applications of PDA
32	L32	The Turing Machine: Programming Techniques for Turing Machine
33	L33	Extensions of Turing Machine, Restricted Turing Machines
34	L34	Universal Turing Machines and Designing of Turing Machines
35	L35	Time and Tape Complexity Measures of Turing machines
36	L36	Post's Correspondence Problem (PCP)
37	L37	Rice's Theorem, Decidability and Undecidability properties
38	L38	P-NP class and completeness