

Mahaveer Institute of Technology & Science, Jadan

II B.Tech. IV-Semester. Computer Science & Engineering

LESSON PLAN

4CS4-06: Theory of Computation

Credit: 3
3L+0T+0P

Max. Marks: 150 (IA:30, ETE:120)
End Term Exam: 3 Hours

NAME OF THE FACULTY: MANJARI AGARWAL

Year: II

Semester: IV

Total Hours: 40

Year: 2019-20

Unit No:	Content	Hour
1	Introduction of TOC	1
2	Finite Automata & Regular Expression	7
3	Context Free Grammar	8
4	Push down automata	8
5	Turing Machines	8
6	Tractable and Untractable Problems	8

Lecture No:	Topic Covered	Proposed Date	Actual Date	Remark	Signature of Faculty
1	Introduction of TOC	16-01-2019			
2	Finite Automata & Regular Expression: Basic machine, Finite state machine, Transition graph, Transition matrix, Deterministic and non deterministic finite automation,	17-01-2019			
3	Equivalence of DFA and NDFA, Decision properties, minimization of finite automata,	21-01-2019			
4	Mealy & Moore machines.	23-01-2019			
5	Alphabet, words, Operations, Regular sets, relationship and conversion between Finite automata and regular expression and vice versa,	24-01-2019			
6	designing regular expressions,	28-01-2019			
7	closure proportion of regular sets, Pumping lemma for regular sets	30-01-2019			
8	Myhill-Nerode theorem , Application of pumping lemma, Power of the languages.	04-02-2019			
9	Context Free Grammars (CFG), Derivations and Languages, sentential forms, parsing and ambiguity,	06-02-2019			

10	Relationship between derivation and derivation trees, leftmost and rightmost derivation,	07-02-2019			
11	simplification of CFG,	11-02-2019			
12	Chomsky Normal form ,	13-02-2019			
13	Greibach Normal form	14-02-2019			
14	Problems related to CNF	18-02-2019			
15	Problems related to GNF	20-02-2019			
16	membership problem	21-02-2019			
17	Nondeterministic PDA and CFL	25-02-2019			
18	CFG for PDA	27-02-2019			
19	Deterministic PDA,	28-02-2019			
20	Deterministic CFL ,	04-03-2019			
21	The pumping lemma for CFL's,	06-03-2019			
22	Closure Properties for CFL	07-03-2019			
23	Decision properties for CFL	11-03-2019			
24	Deciding properties of CFL	13-03-2019			
25	Introduction, Definition of Turing Machine,	14-03-2019			
26	TM as language Acceptors and Transducers,	18-03-2019			
27	Computable Languages and functions,	20-03-2019			
28	Universal TM & Other modification, multiple tracks Turing Machine.	21-03-2019			
29	Hierarchy of Formal languages: Recursive & recursively enumerable languages,	25-03-2019			
30	Properties of RL and REL,	27-03-2019			
31	Introduction of Context sensitive grammars and languages,	28-03-2019			
32	The Chomsky Hierarchy.	01-04-2019			
33	Tractable Problems:	03-04-2019			
34	Untractable Problems:	04-04-2019			
35	P- NP, NP hard problems	08-04-2019			
36	P- NP, NP complete problems	10-04-2019			
37	Un-decidability,	11-04-2019			
38	vertex cover problem,	15-04-2019			
39	Hamiltonian path problem,	17-04-2019			
40	traveling sales man problem.	18-04-2019			

Signature of the HOD:

Signature of the faculty:

Signature of Dean

Signature of Principal