

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Information Technology

Lesson plan of faculty member for the academic year 2017–18

Class: II B Tech

Branch-Section: IT-A

Semester: II

Subject: Formal Languages and Automata Theory

Lectures per week: 5

Lecture Number	Topics to be covered	Date (s)
UNIT – I		
1	Introduction to Finite Automata	18 December 2017
2	Structural Representations	20 December 2017
3	Automata and Complexity	21 December 2017
4	Alphabets, Strings, Languages,	21 December 2017
5	Problems: Deterministic Finite Automata	23 December 2017
6	Nondeterministic Finite Automata	27 December 2017
7	Text Search	28 December 2017
8	Finite Automata with Epsilon-Transitions	28 December 2017
UNIT-II		
9	Regular Expressions	30 December 2017
10	Finite Automata and Regular Expressions	3 January 2018
11	Applications of Regular Expressions	4 January 2018
12	Algebraic Laws for Regular Expressions	4 January 2018
13	Properties of Regular Languages	6 January 2018
14	Pumping Lemma for Regular Languages,	8 January 2018
15	Applications of the Pumping Lemma	10 January 2018
16	Closure Properties of Regular Languages	11 January 2018
17	Decision Properties of Regular Languages	11 January 2018
18	Equivalence and Minimization of Automata.	13 January 2018
UNIT-III		
19	Context-Free Grammars	17 January 2018
20	Derivations Using a Grammar	18 January 2018
21	Leftmost and Rightmost Derivations	18 January 2018
22	The Language of a Grammar	20 January 2018
23	Sentential Forms	22 January 2018
24	Parse Tress	24 January 2018
25	Applications of Context-Free Grammars	25 January 2018
26	Ambiguity in Grammars and Languages	25 January 2018
27	Problems of NFA and DFA	27 January 2018
28	Revision of Regular Expressions	29 January 2018
29	Revision of Context Free Grammar	31 January 2018
30	Revision	1 February 2018
31	Definition of Push Down Automata	1 February 2018
32	The Languages of a PDA	3 February 2018
33	Equivalence of PDA's and CFG's	5 February 2018
34	Deterministic Pushdown Automata	10 February 2018
UNIT-IV		
35	Normal Forms for Context- Free Grammars	12 February 2018
36	The Pumping Lemma for Context-Free Languages	14 February 2018
37	Closure Properties of Context-Free Languages	15 February 2018
38	Decision Properties of CFL's	15 February 2018
39	Complexity of Converting among CFG's and PDA's	17 February 2018
40	Running time of conversions to Chomsky Normal Form	19 February 2018
41	Introduction to Turing Machines	21 February 2018
42	Problems That Computers Cannot Solve	22 February 2018
43	The Turing Machine	22 February 2018

44	Programming Techniques for Turing Machines	24 February 2018
45	Extensions to the basic Turing machine	26 February 2018
46	Restricted Turing Machines	28 February 2018
47	Turing Machines, and Computers	3 March 2018
UNIT-V		
48	Undecidability: A Language that is Not Recursively Enumerable	5 March 2018
49	An Undecidable Problem That is RE	7 March 2018
50	The Universal Language	8 March 2018
51	Undecidable Problems about Turing Machines	8 March 2018
52	Rice's Theorem and Properties of the RE Languages	10 March 2018
53	Post's Correspondence Problem	12 March 2018
54	The "Modified" PCP	14 March 2018
55	Other Undecidable Problems	15 March 2018
56	Undecidability of Ambiguity for CFG'S	15 March 2018
57	Intractable Problems	17 March 2018
58	The Classes P and NP	19 March 2018
59	An Example: Kruskal's Algorithm	21 March 2018
60	An NP-Complete Problem	22 March 2018
61	NP-Completeness of the SAT Problem	22 March 2018
62	Revision of UNIT-I	24 March 2018
63	Revision of UNIT-II	28 March 2018
64	Revision of UNIT-III	29 March 2018
65	Revision of UNIT-IV	29 March 2018
66	Revision of UNIT-V	2 April 2018

Text books:

1. Introduction to Automata Theory, Languages, and Computation, 3rd Edition, John E. Hopcroft, Rajeev Motwani, Jeffrey D. Ullman.
2. Introduction to the Theory of Computation, Michael Sipser, 3rd edition, Cengage Learning.

Name and signature of the faculty: Minhaj Begum ----

Name and signature of Head of the Department: Vinod M ----