ST.ANN'S COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LECTURE SCHEDULE

SUBJECT: FORMAL LANGUAGES & AUTOMATA THEORY ACADEMIC YEAR: 2018-19
FACULTY: Mr. T. KRISHNA KISHORE YEAR-SEM: II – II Semester 'A'
No. of Lectures per Week: 5+1*(Tutorial)

S.No.	Date	UNIT	TOPIC TO BE COVERED
1	19-11-2018	I	**Finite Automata:** Why Study Automata Theory?
2	20-11-2018		The Central Concepts of Automata Theory
3	22-11-2018		Automation, Finite Automation, Transition Systems
4	23-11-2018		Acceptance of a String by a Finite Automation
5	26-11-2018		DFA, Design of DFAs NFA
6	27-11-2018		Design of NFA
7	28-11-2018		Equivalence of DFA and NFA
8	28-11-2018		**TUTORIAL**
9	29-11-2018		Conversion of NFA into DFA
10	30-11-2018		Finite Automata with E-Transition
11	03-12-2018		Minimization of Finite Automata
12	04-12-2018		Mealy and Moore Machines
13	05-12-2018		Applications & Limitation of Finite Automata
14	05-12-2018		**TUTORIAL**
15	06-12-2018		**REVISION**
16	07-12-2018		**CLASS TEST - I**
17	10-12-2018	II	**Regular Expressions**
18	11-12-2018		Regular Sets, Identity Rules, Equivalence of two REs
19	12-12-2018		Manipulations of Regular Expressions, Inter Conversion
20	12-12-2018		**TUTORIAL**
21	13-12-2018		Equivalence between Finite Automata and Regular Expressions
22	14-12-2018		Pumping Lemma ,Closer Properties
23	17-12-2018		Applications of Regular Expressions
24	18-12-2018		Finite Automata and Regular Grammars
25	19-12-2018		Regular Expressions and Regular Grammars
26	19-12-2018		**TUTORIAL**,
27	20-12-2018		**REVISION**
28	21-12-2018		**CLASS TEST - II**
29	26-12-2018	III	**Context Free Grammars,** Formal Languages
30	26-12-2018		**TUTORIAL**
31	27-12-2018		Grammars, Classification of Grammars
32	28-12-2018		Chomsky Hierarchy Theorem
33	31-12-2018		CFG, Leftmost and Rightmost Derivations
34	02-01-2018		Parse Trees ,Ambiguous Grammars,
35	02-01-2018		**TUTORIAL**
36	03-01-2018		Simplification of Context Free Grammars
37	04-01-2018		Elimination of Useless Symbols
38	07-01-2018		Null and Unit Productions
39	08-01-2018		Normal Forms for Context Free Grammars – CNF
40	09-01-2018		**TUTORIAL**
41	09-01-2018		Normal Forms for Context Free Grammars - GNF, Pumping Lemma
42	10-01-2018		Closure Properties Applications of Context Free Grammars
43	11-01-2018		**REVISION**
44	17-01-2018		REVISION
45	18-01-2018		REVISION
46	21-01-2018		REVISION
47	22-01-2018		REVISION
48	23-01-2018		REVISION
49	23-01-2018		REVISION
50	24-01-2018		**Pushdown Automata:** Definition, Model, Graphical Notation
51	25-01-2018		Instantaneous Description, Language Acceptance, Design
52	28-01-2018		Deterministic Pushdown Automata

53	29-01-2018	IV	Non – Deterministic Pushdown Automata
54	30-01-2018		Examples on PDA design
55	30-01-2018		**TUTORIAL**
56	31-01-2018		Equivalence of Pushdown Automata and Context Free Grammars
57	01-02-2018		Examples on Intrconversion
58	04-02-2018		Conversion of Pushdown Automata and Context Free Grammars
59	05-02-2018		Two Stack Pushdown Automata
60	06-02-2018		Application of Pushdown Automata.
61	06-02-2018		**TUTORIAL**
62	07-02-2018		**REVISION**
63	08-02-2018		**CLASS TEST - III**
64	11-02-2018	V	**Turning Machine :** Definition, Model
65	12-02-2018		Representation of Turing Machines
66	13-02-2018		Instantaneous Descriptions
67	13-02-2018		**TUTORIAL**
68	14-02-2018		Transition Tables and Transition Diagrams
69	15-02-2018		Language of a Turing Machine
70	18-02-2018		Design of Turing Machines
71	19-02-2018		Design of Turing Machines-Examples
72	20-02-2018		Design of Turing Machines-Examples
73	20-02-2018		**TUTORIAL**
74	21-02-2018		Techniques for Turing Machine Construction
75	22-02-2018		Types of Turing Machines
76	25-02-2018		Church's Thesis
77	26-02-2018		Universal Turing Machine
78	27-02-2018		Restricted Turing Machine
79	27-02-2018		**TUTORIAL**
80	28-02-2018		**REVISION**
81	01-03-2018		**CLASS TEST - IV**
82	05-03-2018	VI	**Computability** : Decidable
83	06-03-2018		Un-decidable Problems
84	06-03-2018		**TUTORIAL**
85	07-03-2018		Halting Problem of TM
86	08-03-2018		Post's Correspondence Problem
87	11-03-2018		Modified Post's Correspondence Problem
88	12-03-2018		Classes of P and NP
89	13-03-2018		NP- Hard
90	13-03-2018		**TUTORIAL**
91	14-03-2018		NP-Complete Problems
92	15-03-2018		Satisfiability Problem
93	18-03-2018		Vertex Colouring Problem
94	19-03-2018		Travelling Salesperson Problem
95	20-03-2018		Other Examples on Computational [Problems
96	20-03-2018		**TUTORIAL**
97	22-03-2018		**REVISION**
98	25-03-2018		REVISION
99	26-03-2018		REVISION
100	27-03-2018		REVISION
101	27-03-2018		REVISION
102	28-03-2018		REVISION
103	29-03-2018		REVISION

Text Books:

1. Introduction to Automata Theory, Languages and Computation, J.E.Hopcroft, R.Motwani and J.D.Ullman, 3rd Edition, Pearson, 2008.
2. Theory of Computer Science-Automata, Languages and Computation, K.L.P.Mishra and N.Chandrasekharan, 3rd Edition, PHI, 2007.

Reference Books:

1. Formal Language and Automata Theory, K.V.N.Sunitha and N.Kalyani, Pearson, 2015.
2. Introduction to Automata Theory, Formal Languages and Computation, Shyamalendu Kandar, Pearson, 2013.
3. Theory of Computation, V.Kulkarni, Oxford University Press, 2013.
4. Theory of Automata, Languages and Computation, Rajendra Kumar, McGraw Hill, 2014.

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