SSN COLLEGE OF ENGINEERING
KALAVAKKAM-603110
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Staff Incharge:	Ms. Beulah A. & Dr. S. Kavitha
Batch:	2015 - 2019
Academic Year	2017-2018
Class:	V Sem CSE 'A' & 'B' Section
Subject:	Theory of Computation
Subject Code:	CS6503
Teaching Methodology/Aids:	Black Board,Chalk /PPT & Projector
Content Delivery Methods (CDM):	T-Tutorial, S-Seminar

S.No	Topic	Content Delivery Methods	Proposed hours	Actual hours	Deviation
Unit 1 Finite Automata					
1	Introduction- Basic Mathematical Notation and techniques		1		
2	Finite State systems - Basic Definitions- Finite Automaton - DFA & NDFA	T	1		
3	Finite Automaton with e- moves		1		
4	Regular Languages - Regular Expression		1		
5	Equivalence of NFA and DFA- Equivalence of NDFA's with and without e-moves	T	1		
6	Equivalence of finite Automaton and regular expressions		1		
7	Minimization of DFA		1		
8	Pumping Lemma for Regular sets		1		
9	Problems based on Pumping Lemma	T	1		
10	Tutorial - Unit I	T	1		
	Total hours for Unit 1		**10**		
Unit 2 Grammars					
11	Grammar Introduction - Types of Grammar		1		
12	Context Free Grammars and Languages		1		
13	Derivations and Languages		1		
14	Ambiguity- derivation and derivation trees	T	1		
15	Simplification of CFG - Elimination of Useless symbols - Unit productions - Null productions		2		
16	Greiback Normal form		1		
17	Chomsky normal form		1		
18	Problems related to CNF and GNF.	T	1		
19	Tutorial - Unit II	T	1		
	Total hours for Unit 2		**10**		

Unit 3 Pushdown Automata					
20	Pushdown Automata- Definitions – Moves		1		
21	Instantaneous descriptions		1		
22	Deterministic pushdown automata		2		
23	Equivalence of Pushdown automata and CFL	T	2		
24	pumping lemma for CFL.		2		
25	problems based on pumping Lemma	T	1		
26	Tutorial - Unit III	T	1		
	Total hours for Unit 3		**10**		

Unit 4 Turing Machines					
27	Definitions of Turing machines		1		
28	Models		1		
29	Computable languages and functions		1		
30	Techniques for Turing machine construction		1		
31	Multi head and Multi tape Turing Machines		1		
32	The Halting problem		1		
33	Partial Solvability		1		
34	Problems about Turing machine	T	1		
35	Chomskian hierarchy of languages		1		
36	Tutorial - Unit IV	T	1		
	Total hours for Unit 4		**10**		

Unit 5 Unsolvable Problems and Computable Functions					
37	Unsolvable Problems and Computable Functions		1		
38	Primitive recursive functions		1		
39	Recursive and recursively enumerable languages		1		
40	Universal Turing machine		1		
41	Measuring and classifying complexity: Tractable and Intractable problems		2		
42	Tractable and possibly intractable problems	S	1		
43	P and NP completeness	S	1		
44	Polynomial time reductions		1		
	Total hours for Unit 5		**9**		
	Total hours		**49**		

Prepared by **Approved by**

(Ms.Beulah A. & Dr. S.Kavitha) HOD/CSE