SSN COLLEGE OF ENGINEERING, KALAVAKKAM – 603 110
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

V SEMESTER – CSE 'A' & 'B' SECTION
CS6503 – THEORY OF COMPUTATION

ACADEMIC YEAR: 2017-2018 (Odd)   **BATCH: 2015-2019**

COURSE OBJECTIVES
        The students should be made to:
- Understand various Computing models like Finite State Machine, Pushdown Automata, and Turing Machine.
- Be aware of Decidability and Undecidability of various problems
- Learn types of grammars.

Blooms Taxonomy

Remember	Understand	Apply	Analyze	Evaluate	Create
K1	K2	K3	K4	K5	K6

COURSE OUTCOMES
        At the end of the course, the student should be able to:
CO1: Design finite automata, pushdown automata and Turing machines **(K3)**
CO2: Understand the need of formal languages, and grammars for all models. **(K3)**
CO3: Describe and transform regular expressions vs finite automata and grammar vs pushdown automata. **(K3)**
CO4: Understand the key notions, such as computability, decidability and undecidability. **(K2)**

COURSE ASSESSMENT MATRIX

Assessment Tools	Course Outcomes			
	1	2	3	4
Assessment 1	X		X	
Assessment 2	X	X	X	
Assessment 3	X			X

CO	Knowledge Level	Reasoning
CO1	K3	To construct Finite Automata, Pushdown Automata and Turing Machines.
CO2	K3	Understanding the languages and grammars.
CO3	K3	To design regular expression from FA and grammar from PDA or vice versa
CO4	K2	Understanding computability, decidability and undecidability

PROGRAM OUTCOMES (PO)

1. Engineering knowledge: Our graduates will have the knowledge of mathematics, logic, probability and statistics, computer science and engineering, and the skill to apply them in the fields of computer software and hardware. **(K3)**
2. Problem analysis: Our graduates will have the knowledge and skill to identify, formulate, and solve hardware and software problems using sound computer science principles. **(K4)**
3. Experimentation: Our graduates will have the skill to design and conduct experiments, organize, analyze, and interpret data. **(K5)**
4. Design and development: Our graduates will have the skill to design and construct hardware and software systems, components, or processes as per needs and specifications**. (K4)**
5. Team work: Our graduates will have the interpersonal and communication skills to function as team players on multidisciplinary teams.
6. Modern tools usage: Our graduates will be able to use the techniques, skills, and modern hardware and software tools necessary for computer engineering practice. **(K3)**
7. Social and environmental responsibility: Our graduates will demonstrate knowledge related to social, ethical, legal, economical, health and safety, sustainability and environmental dimensions.
8. Communication skills: Our graduates will be able to effectively communicate technical information in speech, presentation, and in writing.
9. Contemporariness: Our graduates will have knowledge of contemporary issues in the practice of their profession.
10. Self-learning: Our graduates will develop confidence for self learning and ability for life-long learning.
11. Competitive exam preparedness: Our graduates will participate and succeed in competitive examinations such as GATE, IES, GRE.
12. Leadership: Our graduates are trained to enhance their managerial skills, leadership quality and entrepreneurial spirit.

COURSE OUTCOMES MAPPED TO PROGRAMME OUTCOMES

		PO											
CO		PO1 K3	PO2 K4	PO3 K5	PO4 K4	PO5	PO6 K3	PO7	PO8	PO9	PO10	PO11	PO12
CO1	K3	3	2	0	2	0	0	0	0	0	1	3	0
CO2	K3	3	2	0	0	0	0	0	0	0	1	3	0
CO3	K3	3	2	0	0	0	0	0	0	0	1	3	0
CO4	K2	2	0	0	0	0	0	0	1	0	1	3	1

1	Reasonable	2	Moderate	3	Strong

Prepared by   **Reviewed by**   **Approved by**

(A.Beulah & S.Kavitha)   **(PAC Team)**   **(HOD-CSE)**