STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 – April 2025

Department	: MATHEMATICS
Name/s of the Faculty	: Dr. CHINTHAMANI. S
Course Title	: Automata
Course Code	: 19MT/GE/AM22
Shift	: I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6) 2 Hours	**Unit 1 : Introduction to the Theory of Computation** 1.1 Mathematical preliminaries and notations, Sets, Functions and Relations 1.2 Graphs and Trees, Proof Techniques 1.3 Three Basic Concepts	Lecture & Problem Solving	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005. Rani Siromoney, *Formal Languages and Automata*. Madras: The Christian Literature Society, 1974.	Questioning
Nov 26- Dec 3, 2024 (Day Order 1 to 6) 2 Hours	**Unit 1 : Introduction to the Theory of Computation** 1.4 Languages, Grammars and Automata 1.5 Some Applications	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Quiz

Dec 4-11, 2024 (Day Order 1 to 6) 2 Hours	**Unit 1 : Finite Automata** 1.6 Deterministic Finite Accepters 1.7 Deterministic Accepters and Transition Graphs	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Slip Test
Dec 12-19, 2024 (Day Order 1 to 6) 2 Hours	**Unit 1 : Finite Automata** 1.8 Languages and Dfas, Regular Languages 1.9 Nondeterministic Finite Accepters, Definition of a NDA	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Questioning
Dec 20-21, 2024 (Day Order 1 & 2) 0 Hrs	-			
Jan 3 – 7, 2025 (Day Order 3 to 6) 2 Hours	**Unit 1: Finite Automata** 1.10 Why Nondeterminism? **Unit 2: Regular Languages and Regular Grammars** 2.1 Regular Expressions	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Slip Test
Jan 8 – 17, 2024 (Day Order 1 to 6) 2 Hours	**Unit 2: Regular Languages and Regular Grammars** 2.2 Languages Associated with RE 2.3 RE Denote RL , RE for RL	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	**III COMPONENT TEST I ASSIGNMENT (10 marks) PORTION: UNIT 1**
Jan 18 - 23, 2025	**C.A. Test – I (No Test)**			

Jan 24 - 30, 2025 (Day Order 1 to 6) 2 Hours	2.4 RG, Right- and Left-Linear Grammars **Context Free Languages** 2.5 Context Free Grammar	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Discussion
Feb 3-8, 2025 (Day Order 1 to 6) 2 Hours	**Context Free Languages** 2.6 Left Most and Right Most Derivations	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Quiz
Feb 10– 18, 2025 (Day Order 1 to 4) 1 Hour	**Context Free Languages** 2.6 Left Most and Right Most Derivations	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Slip Test
Feb 19- 26, 2025 (Day Order 1-6) 2 Hours	**Unit3: Project** 3.1 Application of Finite Automata and Formal Language	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Questioning
Feb 27- Mar 6, 2025 (Day Order 1 to 6) 2 Hours	**Unit3: Project** 3.2 Design of Vending Machine 3.3 Document Language Design	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	**III COMPONENT TEST II Quiz Test & Problem Solving Test (15 Marks) Portion: Unit 2**
Mar 7 – 11, 2025 (Day Order 1 to 3)	-	Lecture & Group Discussion	Peter Linz, *An Introduction to*	Slip Test

			Formal Languages and Automata, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	
Mar 12 –17, 2025	**C.A. Test – II (No Test)**			
Mar 18 – 20, 2025 (Day 4 to 6) 2 Hours	**Unit3: Project** 3.2 Design of Vending Machine 3.3 Document Language Design	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	Questioning
Mar 21 - 28, 2025 (Day Order 1 to 6) 2 Hours	**Unit3: Project** 3.4 Cryptography 3.5 DNA Computing	Lecture & Group Discussion	Peter Linz, *An Introduction to Formal Languages and Automata*, 3rd Edition. New Delhi: Narosa Publishing House, 2005.	**CA TEST: 25 marks Portion : All units**
Mar 29- April 2, 2025 (Day Order 1 to 3)	**REVISION**			