

CCS3402 Theory of Computation**COURSE INFORMATION**

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
CCS1001	3	5	2	2	0	3

COURSE AIM

- Understand the capabilities and limitation of computational models.
- Prove whether a given language is regular.
- Prove whether a given language is context-free.
- Design variants of Turing machines.
- Understand the relationship between the regular, context-free, and recursively enumerable languages.
- Implement simple parsers using Finite State Automata and regular expressions.

COURSE WEEKLY CONTENTS

- 1 Introduction
- 2 Deterministic Finite State Automata part 1
- 3 Deterministic Finite State Automata part 2
- 4 Non-Deterministic Finite State Automata, Equivalence between DFA and NFA
- 5 Regular Expressions
- 6 Non-Regular Languages
- 7 Context-Free Grammars
- 8 Push-Down Automata
- 9 Non-Context Free Languages
- 10 Turing Machines part 1
- 11 Turing Machines part 2
- 12 Variants of Turing Machines
- 13 Complexity Theory Part 1
- 14 Complexity Theory Part 2
- 15 Revision

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook Michael Sipser, Introduction to the Theory of Computation, Cengage Learning.