

CA528 THEORY OF COMPUTATION

Prerequisite: Nil

Aim: First course in theory of computation leading up to the concepts of complexity and undecidability.

Course Content: Introduction, Graph Notation, Set theory, grammar and relations. \

Finite Automata: DFA, NFA, Regular Expressions and their Equivalencies, Moore and Melay machines.

Regular Expressions: Properties, Pumping lemma, Minimizing the Automata.

Context Free Grammars: Definitions, Derivation tree, Ambiguity, Chomsky and Greibach - Normal forms, Pumping Lemma for CFL.

PDA: Definition and Equivalence of PDA and CFL. Introduction to Turing Machines, undecidability and complexity theory.

Book:

Aho, Hopcraft & Ullman: Automata, Languages and Computation; Narosa.