

COMPUTING THEORY (COT)

COT 3400 - Design&Analysis of Algorithms (3 Credits)

The design, implementation, analysis, and application of a range of computer algorithms are explored. Function order of growth and amortized analysis are used in analyzing algorithms. A review and extension of data structure topics including trees and graphs are covered. Algorithm design strategies such as divide-and- conquer, the greedy method, and dynamic programming are studied.

Prerequisite(s): COP 3530

COT 4420 - Theory of Computation (3 Credits)

This course focuses on the theoretical foundations of computing, grammars, automata, and formal languages including finite-state and push-down automata, regular expressions, context free and context sensitive languages, Turing machines, and introduction to complexity theory.

Prerequisite(s): COP 3003

COT 5405 - Design and Analysis of Algo. (3 Credits)

This course will cover techniques for the design of algorithms and the theory of np-completeness. The main topics covered in the course include dynamic programming; divide and conquer; union-find data structures; graph algorithms; np-completeness; and advanced topics.