Design & Analysis of Algorithms (Elective)

Course # COMP 3042

Credits 6

Prerequisites and/or Corequisites: Design & Analysis of Algorithms

Course Description

This course introduces mathematical modeling of computational problems. It covers the common algorithms, algorithmic paradigms, design of algorithms used to solve these problems. The course emphasizes the relationship between algorithms and programming and introduces basic performance measures and analysis techniques for these problems. It also covers the time complexity and space complexity of different algorithms to find the best algorithm having less time and space complexity for different problems.

Course Learning Outcomes

Upon the completion of the course, students will be able to:

- Identify the key characteristics of a problem.
- Analyze the suitability of a specific algorithm design technique for a problem.
- Apply different design techniques to design an algorithm.
- Explain different time analysis techniques and notations of algorithms.
- Analyze the time and space complexity of different algorithms.
- Compare different algorithms to select the best solution for a given problem.

Course Assessments and Grading

Item	Weight
Attendance & Activities	10%
Assignment (5 assignments)	15%
Quiz (10 quizzes)	25%
Midterm exam (Paper/Project)	20%
Final exam (Project)	30%