

Comprehensive Exam in Algorithm Analysis

Optional text: Computer Algorithms, Horowitz, Sahni and Rajasekaran

The exam is based on the course material of CSCI 741, Algorithm Analysis, covered until the midterm plus Divide and Conquer. The exam is on basic algorithms and basic computations. Special/advanced algorithms and computations are not included. The topics of approximately half the course you are responsible for are listed below:

Introduction-algorithms, best, worst and average cases.

Sorting algorithms and complexity

Sum of series and applications

Average case analysis, probability applications

Complexity analysis, O , Ω , Θ , o , ω notation.

Complexity of sums

Floor and ceiling functions, and applications

Finding a maximum and a minimum, algorithms and complexity

Recursion, recursive algorithms, recursive equations and solutions

Stack structure for procedure calls

Smooth functions and complexity

Sorting algorithms- special data, algorithms and complexity

Heaps and algorithms

Greatest common divisor, algorithms and complexity

Merging ordered lists, algorithms and complexity

Divide and conquer basics, recursive equations and solutions