

COURSE DETAIL

DESIGN AND ANALYSIS OF ALGORITHMS

Country

Singapore

Host Institution

National University of Singapore

Program(s)

National University of Singapore

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Computer Science

UCEAP Course Number

111

UCEAP Course Suffix**UCEAP Official Title**

DESIGN AND ANALYSIS OF ALGORITHMS

UCEAP Transcript Title

DESIGN & ALGORITHMS

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course introduces different techniques of designing and analyzing algorithms. The course covers the framework for algorithm analysis, such as lower bound arguments, average case analysis, and the theory of NP-completeness. In addition, various algorithm design paradigms are studied. The course serves two purposes: to improve ability to design algorithms in different areas, and to prepare for the study of more advanced algorithms. The course covers lower and upper bounds, recurrences, basic algorithm paradigms (such as prune-and-search, dynamic programming, branch-and-bound, graph traversal, and randomized approaches), amortized analysis, NP-completeness, and some selected advanced topics.

Language(s) of Instruction

English

Host Institution Course Number

CS3230

Host Institution Course Title

DESIGN AND ANALYSIS OF ALGORITHMS

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Computer Science

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