

# 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 Course Details

<https://nusmods.com/courses/CS3230/design-and-analysis-of-algorithms>

## Host Institution Campus

## Host Institution Faculty

## Host Institution Degree

## Host Institution Department

Computer Science

## Course Last Reviewed

2023-2024

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