

# COURSE DETAIL

## ALGORITHMS, DATASTRUCTURES, AND COMPLEXITY

**Country**

Sweden

**Host Institution**

Lund University

**Program(s)**

Lund University

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Engineering Computer Science

**UCEAP Course Number**

101

**UCEAP Course Suffix****UCEAP Official Title**

ALGORITHMS, DATASTRUCTURES, AND COMPLEXITY

**UCEAP Transcript Title**

ALGRTHM&DATA STRCTR

**UCEAP Quarter Units**

4.00

**UCEAP Semester Units**

2.70

## Course Description

Algorithms and data structures are fundamental in computer science. Data structures are used to model reality and the choice of data structures affects the efficiency of algorithms. This course gives students knowledge of advanced data structures for abstract models and advanced graphs. Students also obtain improved knowledge of algorithms, particularly graph algorithms. The course also gives students knowledge of: techniques for analyzing algorithms with respect to performance; graphs and graph algorithms; data structures for graphs; problem solving strategies such as divide and conquer, greedy algorithms and brute force; techniques for analyzing the time complexity of algorithms; introduction to the complexity classes P and NP, computability and the Church-Turing thesis.

## Language(s) of Instruction

English

## Host Institution Course Number

EDAF05

## Host Institution Course Title

ALGORITHMS, DATASTRUCTURES, AND COMPLEXITY

## Host Institution Campus

Engineering

## Host Institution Faculty

## Host Institution Degree

## Host Institution Department

Engineering- Computer Science

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