COURSE DETAIL

COMPUTATIONAL COMPLEXITY

Country
Singapore

Host Institution
National University of Singapore

Program(s)
National University of Singapore

UCEAP Course Level
Graduate

UCEAP Subject Area(s)
Computer Science

UCEAP Course Number
205

UCEAP Course Suffix

UCEAP Official Title
COMPUTATIONAL COMPLEXITY

UCEAP Transcript Title
COMPUTE COMPLEXITY

UCEAP Quarter Units
6.00

UCEAP Semester Units
4.00

Course Description

The aim of this course is to study the various measures of difficulty of problem solving in computing, and to introduce some techniques in theoretical computer science such as non-determinism, digitalization, simulation, padding, reduction, randomization and interaction. Topics covered include: space and time complexity - the classes P, NP, co-NP, PSPACE, EXP, etc.; tape compression; linear speedup; polynomial reduction; Cook's theorem; Savitch's theorem; translation lemma; Gap theorem; NP-completeness and NP-hard problems; probabilistic complexity classes; approximation algorithms; and interactive protocols.

Language(s) of Instruction

English

Host Institution Course Number

CS5230

Host Institution Course Title

COMPUTATIONAL COMPLEXITY

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Computer Science

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