COURSE DETAIL

ADVANCED ALGORITHMS
Country Hong Kong
Host Institution Chinese University of Hong Kong
Program(s) Chinese University of Hong Kong
UCEAP Course Level Graduate
UCEAP Subject Area(s) Mathematics Computer Science
UCEAP Course Number 216
UCEAP Course Suffix
UCEAP Official Title ADVANCED ALGORITHMS
UCEAP Transcript Title ADVANCED ALGORITHMS
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

This course will study the design and analysis of exact and approximation algorithms for various optimization problems using advanced techniques such as combinatorial methods, probabilistic methods, linear programming, semidefinite programming, and spectral methods. The course also covers spectral algorithms and related convex programs, SDP duality, multiplicative weight update, graph spectrum, eigenvalue interlacing, Cheeger–Alon–Milman inequality, random walks, local graph partitioning, expanders, Laplacian solver, effective resistance, sparsification, matrix scaling, abstract simplicial complex, and random spanning trees.

Language(s) of Instruction
English

Host Institution Course Number
CSCI5160

Host Institution Course Title
ADVANCED ALGORITHMS

Host Institution Course Details

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed
2021-2022

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