

COURSE DETAIL

ALGORITHMS

Country

Taiwan

Host Institution

National Taiwan University

Program(s)

National Taiwan University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Electrical Engineering

UCEAP Course Number

133

UCEAP Course Suffix**UCEAP Official Title**

ALGORITHMS

UCEAP Transcript Title

ALGORITHMS

UCEAP Quarter Units

4.50

UCEAP Semester Units

3.00

Course Description

This course focuses on the design and analysis of algorithms and their applications, as well as the development of problem-solving techniques. The course covers: Algorithmic fundamentals: mathematical foundations, growth of functions, recurrences; Sorting and order statistics; Data structures: heap, binary search trees, RB trees, disjoint sets; Advanced design and analysis techniques: dynamic programming, greedy algorithms, amortized analysis; Graph algorithms: graph representations, searching, minimum spanning trees, shortest paths, network flow, matching (14 hrs); Computational complexity, NP-completeness, and approximation algorithms, and as time permits, general-purpose algorithms: simulated annealing and machine learning.

Language(s) of Instruction

Chinese

Host Institution Course Number

EE4033

Host Institution Course Title

ALGORITHMS

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Electrical Engineering

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