

COURSE DETAIL

NON-LINEAR PROGRAMMING

Country

Singapore

Host Institution

National University of Singapore

Program(s)

National University of Singapore

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mathematics

UCEAP Course Number

115

UCEAP Course Suffix**UCEAP Official Title**

NON-LINEAR PROGRAMMING

UCEAP Transcript Title

NON-LINEAR PROGRAMG

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course examines how optimization principles are of undisputed importance in modern design and system operation and illustrates how algorithms can be designed from mathematical theories for solving optimization problems. Topics include fundamentals, unconstrained optimization: one-dimensional search, Newton-Raphson method, gradient method, constrained optimization: Lagrangian multipliers method, Karush-Kuhn-Tucker optimality conditions, Lagrangian duality and saddle point optimality conditions, and convex programming: Frank-Wolfe method. The course requires students to take prerequisites.

Language(s) of Instruction

English

Host Institution Course Number

MA3236

Host Institution Course Title

NON-LINEAR PROGRAMMING

Host Institution Course Details

<https://nusmods.com/courses/MA3236/non-linear-programming>

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Mathematics

Course Last Reviewed

2025-2026

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