

COURSE DETAIL

COMBINATORICS

Country

Singapore

Host Institution

Nanyang Technological University

Program(s)

Nanyang Technological University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mathematics

UCEAP Course Number

140

UCEAP Course Suffix**UCEAP Official Title**

COMBINATORICS

UCEAP Transcript Title

COMBINATORICS

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This upper division course applies concepts in symbolic methods and analysis to solve a variety of problems in combinatorics. Course content includes: 1. Combinatorial Structures and Ordinary Generating Functions: symbolic enumeration methods, integer compositions and partitions, words and regular languages, tree structures 2. Labelled Structures and Exponential Generating Functions: labelled classes, surjections, set partitions, words, alignments, permutations, labelled trees, mapping and graphs 3. Complex Analysis, Rational and Meromorphic Asymptotics: generating functions as analytic objects, analytic functions and meromorphic functions, singularities and exponential growth of coefficients 4. Singularity Analysis of Generating Functions: coefficient asymptotics, process of singularity analysis. The course requires students to take prerequisites.

Language(s) of Instruction

English

Host Institution Course Number

MH4300

Host Institution Course Title

COMBINATORICS

Host Institution Course Details

https://wis.ntu.edu.sg/webexe/owa/aus_subj_cont.main

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Mathematics

Course Last Reviewed

2025-2026

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