COURSE DETAIL

COMBINATORICS

Country
New Zealand

Host Institution
University of Auckland

Program(s)
University of Auckland

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
103

UCEAP Course Suffix

UCEAP Official Title
COMBINATORICS

UCEAP Transcript Title
COMBINATORICS

UCEAP Quarter Units
6.00

UCEAP Semester Units
4.00

Course Description

This course is intended for students who have enjoyed basic combinatorics and discrete mathematics. It expands on the concepts seen in those classes. Topics: introduction to graph colorings, planarity, etc.; theorems in the area: the Five-Color Theorem, Euler's Formula, Hall's Marriage Theorem. The syllabus also includes incidence structures such as designs, projective planes. To show applicability of combinatorics to real-life problems prefix codes and universal compression codes are considered with applications to computer science, and simple games which have applications to economics and political science. This course uses a Team Based Learning approach. At the beginning of the course, students are assigned to teams of approximately five students in each team. After a preliminary topic devoted to revision of the basics, the course is divided into five main topics. Each topic has the same structure: preliminary reading, available in advance, followed by a readiness assurance test (RAT). This is a multi-choice quiz based on the reading, and it has an individual and a team components. Near the end of each topic, there is a team task, where students are set a problem to solve as a group during class.

Language(s) of Instruction
English

Host Institution Course Number
MATHS 326

Host Institution Course Title
COMBINATORICS

Host Institution Course Details

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

Course Last Reviewed

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