

MA4198 PROJECT PROPOSAL (PROJECT CUM SEMINAR GROUP)

SUPERVISOR'S INFO

Name:	To Wing Keung
Email:	mattowk@nus.edu.sg
Tel number:	65162757
Office location:	S17-06-19

PROJECT ID: PS2520-08

TITLE

Aspects of matroids

BRIEF DESCRIPTION OF PROJECT

Matroids are mathematical structures that arise from the study of 'independence' in various settings, including the notion of linear independence in linear algebra as well as analogous notion in graph theory. In this project, students will study various aspects of matroids. First students will study together the basic notions associated to matroids and the various equivalent definitions of matroids. Then each student will focus study on one or more aspects of matroids, such as duality, minors and connectivity of matroids, some application of matroids in combinatorial optimization, and unimodularity issues in matroids.

EXPECTATION/S

Students are expected to demonstrate good understanding of mathematical content encountered in the project as well as competence in report writings and oral presentation associated to the project. Students are expected to be able to work out the mathematical details encountered in their reading of the project materials.

PREREQUISITE/S (at level 3000 or below, with at most one course at level 3000)

MA2101 Linear Algebra II.
MA2214 Combinatorics and Graphs I

READING REFERENCE/S

James Oxley: Matroid Theory, 2nd edition, Oxford University Press