Faculty of Science
Department of Mathematics

HONOURS PROJECT PROPOSAL (PROJECT CUM SEMINAR GROUP)

SUPERVISOR'S INFO

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PROJECT ID: PS2510-01

TITLE

Hypergraphs with applications in data science

PREFERRED GROUP SIZE (MIN. 6, MAX. 12)

4-6

BRIEF DESCRIPTION OF PROJECT

Hypergraphs generalize traditional graphs by allowing edges (called hyperedges) to connect any number of nodes, rather than just two. This flexibility makes them well-suited for capturing complex relationships that standard graphs cannot adequately represent—such as co-authorship in scientific publications, multilateral chemical interactions, or group conversations.

This project aims to explore the underlying geometry of hypergraphs while also investigating their potential applications in data science.

EXPECTATION/S

We expect that in the project, one can quickly and easily learn the notion of hypergraph as well as the applications to data analysis.

PREREQUISITE/S

MA2101 Linear Algebra II; MA2108, Mathematical Analysis I

RELEVANT MA4000 MODULES/CO-REQUISITES

N/A

READING REFERENCE/S

Hypergraph theory-An Introduction, by Alain Bretto