

MA4198 PROJECT PROPOSAL (PROJECT CUM SEMINAR GROUP)

SUPERVISOR'S INFO

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TITLE

Lanzhou Index of Graphs

BRIEF DESCRIPTION OF PROJECT

There are many graph indices that tells us (different) properties that a graph possesses. Some of these indices are related and can be applied to studies outside mathematics (e.g. molecular descriptors). In this project, we will study the Lanzhou index of a graph and some related graph indices.

EXPECTATION/S

Students are expected to understand basic graph terminologies and results relating to the Lanzhou index of a graph. In addition to presenting proofs taken from the main reference, students are also expected to read beyond the main reference and be able to draw connections between the Lanzhou index and other graph indices.

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

It would be good for students to have basic familiarity in graph theory introduced in MA2214 although it is not compulsory. Students with no graph theory background will be required to do some self-initiated reading (with guidance) to prepare for the project.

READING REFERENCE/S

Main reference: On Lanzhou Index of Graphs, S. Bera and K.C. Das. *Ars Combinatoria* (157), 143-157 (2023).
Other references will be provided subsequently.