Math 708 Fall 2024

Course Announcement *(June 2024)*

Course details

Instructor	**Tamon Stephen**.
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Webpage	`http://www.math.sfu.ca/~tamon/Teaching/1247_Math408/`.
Meeting	**M 2:30–4:20, W 2:30–3:20 Surrey 2740**.
Text	**Integer Programming by Conforti, Cornuéjols and Zambelli**.
Grading	**40% Homework, 15% Team Homework, 10% Midterm, 15% Project, 20% Final**.

Math 708 (Discrete Optimization) will be offered in the Fall 2024 term at the Surrey campus. Discrete optimization is a field that has grown almost from scratch in the past 70 years. This development is driven in part from its applicability to a wide range of practical problems, such as scheduling and network design, and its close ties to computer science. However, it is also a beautiful mathematical topic, that connects to diverse areas of mathematics, including classical problems in combinatorics, algebra and geometry.

Arguably the most famous discrete optimization problem is the *Travelling Salesman Problem* of finding the shortest tour through a given set of cities. For instance, the circuit below is the shortest tour through the 13509 cities in the mainland U.S.A. with a population of at least 500.

Math 708 is an introductory graduate course that focuses on formulating integer programs, and solving them with polyhedral methods. The main background required is some familiarity with linear programming.

Images from the TSP homepage, `http://www.math.uwaterloo.ca/tsp/`. The inset is a a tour on 200,000 points.