Math 408 Fall 2024

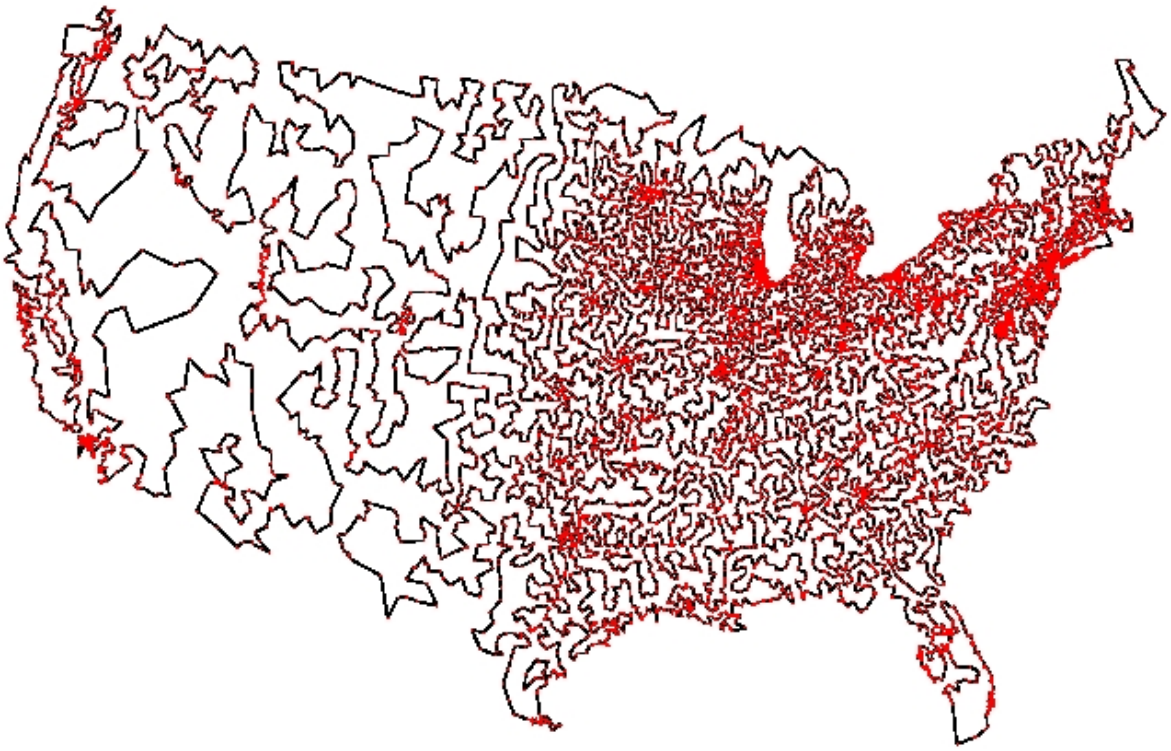
Course Announcement *(June 2024)*

Course details

Instructor	**Tamon Stephen**.
e-mail	**tamon@sfu.ca**.
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, 20% Team Homework, 15% Midterm, 25% Final**.

Math 408 (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 408 is an introductory course that explains some of the key ideas used in solving such problems.

Images from the TSP homepage, `http://www.math.uwaterloo.ca/tsp/`. The inset is a a tour on 120,000 points.