

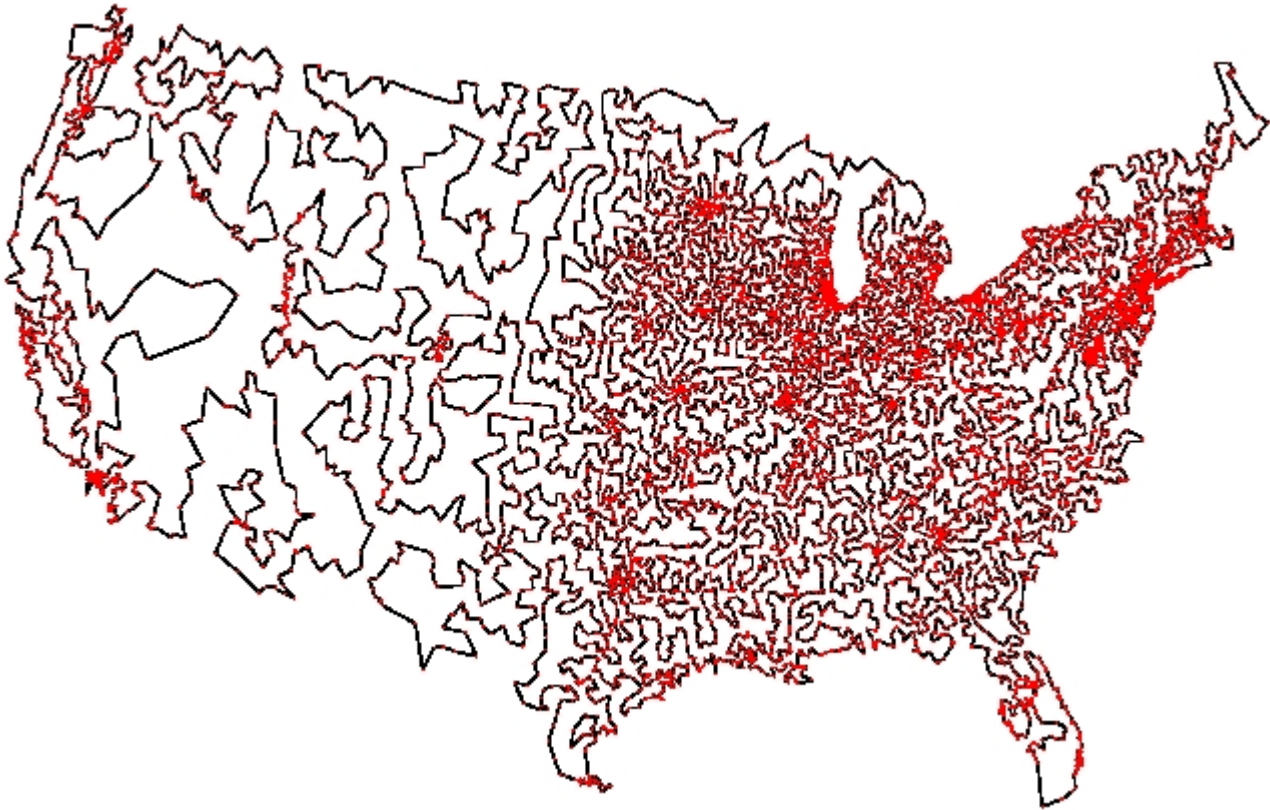
Course Announcement for Math 708

(June 2024)

Instructor: Tamon Stephen
E-mail: tamon@sfu.ca
Web page: http://www.math.sfu.ca/~tamon/Teaching/1247_Math408/
Meeting Time: M 2:30–4:20, W 2:30–3:20 SRY 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 500.¹



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.

¹This picture is from the Travelling Salesman Problem homepage, <http://www.math.uwaterloo.ca/tsp/>.