Course Announcement for Math 708

(June 2024)

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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.

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