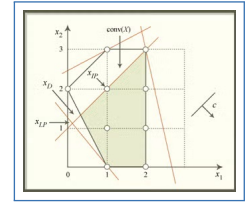


Math 708 Fall 2026

Course Announcement

(July 2026)



Course details

Instructor **Tamon Stephen.**

e-mail **tamon@sfu.ca.**

Webpage http://www.sfu.ca/~tstephen/Teaching/1267_Math408/.

Meeting **M 2:30–4:20, W 2:30–3:20 AQ 5018.**

Grading **40% Homework, 15% Team Homework, 10% Midterm, 15% Project, 20% Final.**

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 points. For instance, the circuit below is a short tour through 100,000 points generated by stippling a famous work of art.



In 2009, a prize of \$1,000 was offered for identifying the *shortest* such tour. As of June 2026, it still has not been claimed. However the illustrated circuit is within 0.0019% of optimality.

Math 708 is an introductory course that explains some of the key ideas used in studying such problems.

Mona Lisa tour by R. Bosch from the TSP homepage, <http://www.math.uwaterloo.ca/tsp/>. Inset by D. Bertsimas from MIT Open Courseware, <https://ocw.mit.edu/courses/15-083j-integer-programming-and-combinatorial-optimization-fall-2009/>.