

MATH 441

Discrete Optimization Problems

Group Project Outline 2023W2

Group Formation

- 3 or 4 students per group
- Each group must select a project distinct from other groups
- Submit project description, names and student numbers of group members
- Deadline: Friday January 26

Project Proposal

- Clearly state the problem to be solved or question(s) to be answered
- Identify data to collect and computations to perform
- List relevant references and examples
- Submit LaTeX document or Jupyter notebook (equivalent to 1 page of written work)
- Deadline: Friday February 9

Progress Report

- Clearly state the problem to be solved or question(s) to be answered
- Give a summary of the big ideas and work completed to date
- Give examples of data collected and computations performed
- Submit LaTeX document (at most 3 pages)
- Deadline: Friday March 8

Final Report

- Problem statement
- Relevant mathematical theory
- Data and computations
- Presentation of results
- Submit LaTeX document and Python/MATLAB/Julia code
- Deadline: Friday April 12

Group Presentation

- Summarize the big ideas and results
- 7 minutes plus 3 minutes for questions and discussions
- Deadline: April 8–12

Final Grade Proposal

The group should evaluate their own work and propose a grade for the project. Include the proposal in the final report. Final grades are discussed with instructors in interviews at the end of the semester. Instructors reserve the right to accept or modify final grades. Here are criteria to consider:

Presentation

- Precise mathematical notation
- Computer code clearly written and properly formatted
- Correct spelling and grammar throughout
- Headings, links and text properly formatted
- Figures presented clearly with title, captions, labels, legend, etc.
- All references properly cited (see UBC Library's [How to Cite Guide](#))

Clarity

- Excellent writing with clear explanations
- Includes appropriate level of detail for audience (MATH 441 students)
- Precise mathematical statements throughout
- Well-organized and easy to follow

Creativity

- Demonstrates mathematical maturity far beyond basic definitions
- Well-constructed mathematical arguments throughout
- Makes nontrivial connections between disparate concepts
- Restates familiar mathematical concepts in a novel way
- Presents complex mathematical information in a simple way