The objective of the project is to model and analyze a moderately large Operations Research problem. Students will work in their groups. They will identify a problem to work on, in consultation with the instructor.

Timeline

The project will proceed in three stages: a brief project proposal in February, a draft submission on March 9th, and a final paper submission on April 9th (the final day of classes). Detailed requirements and a marking rubric will be distributed for each stage. All written submissions will be typeset in LaTeX.

Problem Selection

The ideal project is something local which is relevant to your daily life. Examples might include, for instance, scheduling exams at SFU[1] or staff at a nearby small business. You can find examples of past projects from Math 208W and 402W in the *Analytics Now* booklets published by the SFU O.R. Student Union. Copies of these are available on-line at `http://journals.lib.sfu.ca/index.php/analytics-now/index`. You might also look at the "Models for Practical Problems" in Chapters 13 and 14 of the textbook *Optimization Modelling: A Practical Approach* by Sarker and Newton, which can be accessed on-line through the library.

One key issue in selecting the project is to make sure that the data (inputs) to the model are readily available. It would certainly be nice to use real data, but given the brief nature of this project, we will likely have to find a reasonable approximation.

Roughly the problems should fit into one of the paradigms studied in Baker's book, which can roughly be described as `deterministic constrained optimization problems` of several variables.

Groups should consult with the instructor in selecting the problem.

Research Ethics. One of the goals of this course is to get you to work with real data. In some cases, this data will be public data that will not present ethics issues. However, if you are considering obtaining or generating non-public data, you will want to consider carefully how your data will be handled and published. In that case, we will go through SFU's ethics approval process.

If your group is interested in working with this type of data, please talk to me about it as soon as possible so we can begin the approval process. Some information on research that requires ethical review is available here. In particular, you will have to complete the TCPS 2: CORE-2022 tutorial.

[1] Although this has already been done too often.