

Due: Thursday, February 9th (in class)

The first milepost in the main project is the proposal. At this point, each group will have selected, in consultation with the instructor, a problem to analyze. Having settled on the problem, you must produce a *proposal*, which is a short document describing what the problem is, why it is worth solving, and how you plan to study it. The proposal should be no more than four pages long, and treat the following issues.

1. Describe the problem to be solved.
2. Explain the significance of the problem, that is, why it is worthwhile to solve it. As part of this, you will identify stakeholders, that is, people who are affected by the issue and the proposal.
3. Describe how you plan to solve the problem. In particular, outline inputs that the model will have available, and the outputs that it should produce. Explain what relevant data needs to be obtained, and how it will be obtained. Outline the computational techniques that you plan to use to solve the problem.
4. Discuss additional aspects of the problem that are not treated by the model, and explain why it is acceptable to focus only on the aspects that you did.

Recall that the model should be such that you can apply non-trivial mathematical (Operations Research) techniques to it to give a detailed, quantitative and verifiable answer. The techniques used will be dictated by the problem, and are not necessarily related to the subject material of any particular course. You need to make sure that the data (inputs) to the model can be realistically obtained in time to complete the project.

The proposal will count for 15% of the final grade. The draft marking rubric is on the back of this page.

Presentations

Besides the written proposals, we will have short 10 minute presentations of the proposals to the class.

CORS undergraduate student paper competition

In recent years, some projects from this course have been submitted to the CORS (Canadian Operational Research Society) undergraduate Student Paper Competition. Note the deadlines are March 15th for the title and abstract (but we should have it done earlier), and April 15th for the full submission. If any groups are interested in participating, they should contact the instructor. Clearly any successful entry will need to show substantial progress well in advance of the proposal deadline.

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| The problem is clearly identified and presented. (10%) | |
| Motivations for the problem are clearly stated, including identifying relevant stakeholders and discussing possible impacts on them. (10%) | |
| There is a clear, feasible plan to obtain the relevant data and then solve the model. (15%) | |
| The modelling and solution techniques proposed are neither trivial, nor intractable, and are Operations Research techniques. (10%) | |
| The discussion of additional aspects not treated by the problem is thorough, and the reasons why these aspects are ignored are well-argued. (10%) | |
| The writing style is appropriate. (5%) | |
| Ideas are presented clearly and logically. (5%) | |
| Few grammatical, spelling and punctuation errors. (5%) | |
| The report is well-formatted. (5%) | |
| Live presentation is well prepared, accurate, and professionally delivered. Questions are answered appropriately. (10%) | |
| Overheads are clear, well-formatted, and have few errors. (5%) | |
| The presentation highlights critical aspects of the report, and is suitable for the audience. (5%) | |
| Individual participation and contribution. (5%) | |