

Course Information for Math 402W

Meeting Time: T 12:30–2:20 in SUR 2740 and Th 12:30–2:30 in SUR 3250
Instructor: Tamon Stephen
Office: 2886 Podium 2
Office Phone: 778–782–7429
E-mail: tamon@sfu.ca
Web page: http://www.math.sfu.ca/~tstephen/Teaching/1141_Math402W/
Office Hours: Following class and by appointment.
Text: None.
Grading: 10% Warm-up Project, 10% Article Review, 80% Final Project.

1. **Syllabus.** This course is centred around a group project. The objective is to model and analyse real-world problems that require substantial mathematical (operations research) techniques. Students will select the problems and present their analyses in written reports and oral presentations.

2. **Course Requirements.** The main requirement for the course will be the successful completion of the main group project, worth 80% of the final grade. There will also be a warm-up group project, worth 10%, and an article review, which will be done individually.

Note that class does not follow a lecture format. Students are required to attend, and will meet in their groups and with the instructor during the class meeting times. There will be an additional room where groups can meet privately with the instructor: SUR 2750 Tuesdays from 12:30 to 1:20 and SUR 5060 Thursdays from 12:30 to 2:20.

3. **Timeline.** We will begin the warm-up projects immediately, with papers and presentations due in class on Thursday, January 23rd. We should choose the articles for the article review by Thursday, January 16th, with the reviews due on Thursday, February 6th.

The main group projects will begin in earnest on Tuesday, January 28th. Topics should be finalized by Tuesday, February 4th. Note that reading week is February 10th to 14th. Detailed proposals are due Thursday, February 20th. There will be a progress report on Tuesday, March 18th, and the final reports will be due, along with in-class presentations on the final day of classes, that is, Tuesday, April 8th. (If there are too many projects to fit into one class, then we will either book time after class or have one or two projects presented in the previous class, on Thursday, April 4th.)

4. **Exams.** There are no tests or exams in this class.

5. **Participation.** Since this class is based on group work, attendance and punctuality in class are critical, as well as active participation in group activities. These will be considered when assigning grades.
6. **Religious Accommodations.** Students requesting religious accommodation must tell the instructor by the end of the first week of term.
7. **Resources.** There is a copy of Hillier and Lieberman's *Introduction to Operations Research* on reserve at the Surrey library. This provides a useful introduction to operations research modelling, and many of you are likely familiar with it from Math 348.

The first full offering of the Operations Research Clinic was in 2012. That year, the Operations Research Student Union published a booklet containing journal versions of the three Operations Research Clinic projects. A copy of this booklet is on reserve at the Surrey library. This can help you get an idea of what these projects should look like. The first two papers in this booklet were entered in the 2012 CORS (Canadian Operational Research Society) undergraduate student paper competition. They won honourable mention and first prize, respectively.

Unfortunately the 2013 projects are not available as a booklet. However, the projects again one first place and honourable mention at the CORS student paper competition, with the winning entry featured in an SFU media release.

Some non-technical presentations of very large scale Operations Research projects are available at the Edelman Awards Presentations of INFORMS (Institute for Operations Research and Management Science).

For papers that present Operations Research cases along with substantial technical details, see *Interfaces*, an INFORMS journal. One of these papers will be the subject of your article review. Note that if you are off-campus, you will need to access *Interfaces* through the SFU library using student Internet credentials.

8. **Software.** Your optimization models will not be easy to solve, so you will need to access to current mathematical software. This will be arranged with the instructor, using educational software licences.
9. **Questions.** Questions are encouraged in class and out.

Have a great term!