

Continuous Optimization

Instructor: Yanghong Huang

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Office Hours: TBA or after class or by appointment (preferably by e-mail).

Teaching Assistants:

Ali Nadaf (E-mail: anadaf@sfu.ca): Tutorial D101 Tu 4:30pm–5:20pm
Tutorial D102 Tu 1:30pm–2:20pm

WebCT:

The material for this class will be posted in the WebCT container for this course.
Consult WebCT regularly for syllabus details and updates, homework assignments, announcements, and general course information.

Lectures: Monday 2:30pm–3:20pm, Thursday 2:30pm–4:20pm, WMC 3210.

Text: Jorge Nocedal and Stephen J. Wright ,
Numerical Optimization (2th edition, 2006), Springer.

Prerequisites:

Please see me if you have a question about your preparation. The essential prerequisites for this course are calculus of a single variable or multiple variables (Math 251 or equivalent, **no integration!**) and linear algebra (Math 232 or 240). Math 308 (Simplex Method or Linear Programming) is recommended. Some knowledge of a high-level computer language will also be helpful, but we will focus on MATLAB (or octave).

Homework:

Homework assignments are posted on WEBCT periodically. **No late homework** is accepted. The homeworks are distributed during the tutorial sections. A selection of the problems will be graded every week; homework will also be graded on completeness and presentation. Please give clear and complete explanations, submit clearly labeled computer code, and provide your graphs with well-chosen titles and axis labels.

You are encouraged to discuss the problems at the weekly Tuesday tutorial sessions, and to work together and discuss problems with each other (or use the WebCT discussions utility), but solutions must be worked out and submitted individually; you are responsible for your own homework.

Exams and Grading:

There will be **two** in-class midterm exams, **3:30-4:20pm**, on **Thursday, February 9** and **3:30-4:20pm**, on **Thursday March 23**; the final exam is scheduled for **3:30-6:30pm**, **Sunday, April 15**. The overall (updated on April 1st) grading policy is as follows:

Homework	= 10%
Midterm exam	= 30% (15% each)
Final exam	= 60%

Using MATLAB:

Matlab is installed on the IT Services - CaRS Distributed Computing Facility desktop in several computer labs across campus including AQ3148, AQ3145.2, AQ3144, Lib 3rd floor, WMC2502. The application is supposed to be in the general pool of available software and not restricted except by the license server.

Students enrolled in MATH 309 are given permission to use MATLAB. Please let me know if there is problem using this software.

There is no tutorial on MATLAB, but you can find lots of tutorials online or you can post your question on webct. For this class, you can do all the programming assignments with the free MATLAB clone OCTAVE (www.gnu.org/software/octave/).

Advice on how to succeed in the course

I expect that if you are properly prepared and put in a consistent effort you will succeed in this course. This means that I expect you to attend lectures and tutorials, and turn in your homework on time. If you are having difficulties, talk to your classmates, and get help from the TA. If you are still having difficulties, come speak with me. My midterms and finals are moderately difficult, the material will be mostly similar the HW, but different enough to test your understanding. The best way to study is to go over the HW. Focus on the material that has been emphasized, not the obscure stuff that may have been confusing or difficult.

Most of the calculations are done in the homework assignments using MATLAB. There will be light calculation (you don't need a calculator) in the exams, but you need the computational experience to answer some of the questions in the exams (like when some algorithms works and when does not).

Grading and academic integrity

I try to be fair and reasonable and I expect the same from you.

Your grade will be computed according to the scheme above. The raw numerical grades will be converted to letter grades using a curve, with mean shifted according to my assessment of the overall performance of the class. This means that you are guaranteed to be graded according to your rank in the class, but if the whole class does well, I have the liberty to shift grades up. (Under normal circumstances, I won't shift the grades down). I have no tolerance for academic dishonesty.

Extenuating Circumstances

Check the exam dates and make sure there is no clash with others. Occasionally students have personal problems which might interfere with their performance in the class. If this is the case, send me an email, omitting details, but alerting me to the possibility of the problem. This will make things easier later.