

MAST 232
Mathematics with Computer Algebra
Winter 2017

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Office Hours: TBA

Prerequisite: CEGEP Mathematics 105 or 201-NYC, 203 or 201-NYB or equivalent.

Exclusion: This course is an introduction to computer algebra using *Mathematica*. It may not be taken for credit simultaneously with, or after having completed, a course of a similar nature.

Class structure: The class takes place in a computer lab and consists of a lecture portion and an instructor-supervised problem-solving session.

Assignments: Assignments will be given approximately on a bi-weekly basis and must be submitted via Moodle by the date and **time** indicated. Solutions will be posted on Moodle. You may discuss the problems with your classmates and ask the instructor for help. However, you **must write your solutions independently** (without someone else's work in front of you). You **may not** actively solicit help on internet forums (aside from the 'Student discussion forum' on Moodle), though you are permitted to **search** the internet for help.

Midterm test: There will be one midterm test, given in the lab using *Mathematica*. There is no option for a 'make-up' test. If you miss the midterm for **any** reason, your grade will simply be computed according to Scheme B.

Evaluation: You will be evaluated on the two grading schemes below, and your final grade will be the **greater** of the two.

Scheme A:

Assignments 15%

Midterm test 25%

Final exam 60%

Scheme B:

Assignments 15%

Midterm test 0%

Final exam 85%

Note that there is no '100% final' option in this course and no supplemental examination.

Mathematica: All course work will be carried out using the computer algebra system *Mathematica*. This software is installed in the computer lab. Concordia University also has a site license for *Mathematica*, which allows you to download the software and use it on your own computer. Instructions for doing so are given in MyConcordia under 'Software and Applications > Mathematica'. You may also work in the lab during posted hours, and may borrow a laptop from the library (*Mathematica* will be installed).

Moodle: All course materials will be posted to the course Moodle website. Students are expected to check this website on a regular basis.

Topics: Graphing in two and three dimensions, lists, functions, number systems, algebraic and transcendental equations, differentiation and applications, integration and applications, programming, probability and statistics, linear algebra and applications. Additional topics may be included as time permits.