

MAST 232
Mathematics with Computer Algebra
Fall 2020

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Preface: Due to exceptional circumstances, this course will be taught, and all assessments will be done completely ONLINE. Exams will be delivered online.

Class Schedule: Fridays, 16:00-18:15.

Office Hours: Fridays, 14:00-15:30.

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

Exclusions: 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 consists of a lecture portion and an instructor-supervised problem-solving session. Lecture notes will be posted an hour prior the class start; while the classwork will be made available half an hour after class start. Classes will be run through Zoom.

Class Work: To receive credit for the problem-solving session, you **must show your work** to the instructor before leaving the online class. For this purpose, the student will be required to share his/her screen and present his/her work.

Assignments: There will be 5 assignments during the semester. These are to be submitted via Moodle by the date and time indicated. 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 on the topic.

Midterm test: There will be one online midterm test, given through Moodle and using *Mathematica*. There is no option for a 'make-up' test. The midterm will be administered around week 7 and will take place during the scheduled class time.

Evaluation: You will be evaluated according to the following scheme. There is no '100% final' option in this course and no supplemental examination. In the evaluation of any submitted work, we will consider the measure in which the proposed solution takes advantage of the affordances of *Mathematica*.

Class work 5%
Assignments 30%
Midterm test 30%
Final exam 35%

All assignments are mandatory. Late assignments are not accepted.

If the grading scheme for this course includes graded assignments, a reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

Mathematica: All course work will be carried out using the computer algebra system *Mathematica*. 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'.

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.

Academic Integrity and the Academic Code of Conduct

This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity." [*Undergraduate Calendar, Sec 17.10.2*].

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Disclaimer: In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in the course is subject to change.