

MAST 232
Mathematics with Computer Algebra
Winter 2023

Instructor*: _____

Office/Tel No.: _____

Office Hours: _____

*Students should get the above information from their instructor during class time. The instructor is the person to contact should there be any questions about the course.

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 at class start; while the classwork will be made available half an hour after class start.

Class work: To receive credit for the problem-solving session, you **must show your work** to the instructor before leaving the class.

Assignments: There will be 4 or 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 midterm test. There is no option for a 'make-up' test. Midterm will be administered around week 7 and will take place during 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: <https://www.concordia.ca/conduct/academic-integrity.html>" [*Undergraduate Calendar, Sec 17.10.2*]

Behaviour

All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications.

Concordia students are subject to the [Code of Rights and Responsibilities](#) which applies both when students are physically and virtually engaged in any University activity, including classes, seminars, meetings, etc. Students engaged in University activities must respect this Code when engaging with any members of the Concordia community, including faculty, staff, and students, whether such interactions are verbal or in writing, face to face or online/virtual. Failing to comply with the Code may result in charges and sanctions, as outlined in the Code.

Use of Zoom

Note: Zoom is included as an institutionally-approved technology. This means we have been assured of the privacy protections needed to use freely within the classroom.

Zoom might be used in this course to facilitate learning at a distance. It may be used to record some or all of the lectures and/or other activities in this course. If you wish to ensure that your image is not recorded, speak to your instructor as soon as possible.

Also, please note that you may not share recordings of your classes and that the instructor will only share class recordings for the purpose of course delivery and development. Any other sharing may be in violation of the law and applicable University policies, and may be subject to penalties.

Intellectual Property

Content belonging to instructors shared in online courses, including, but not limited to, online lectures, course notes, and video recordings of classes remain the intellectual property of the faculty member. It may not be distributed, published or broadcast, in whole or in part, without the express permission of the faculty member. Students are also forbidden to use their own means of recording any elements of an online class or lecture without express permission of the instructor. Any unauthorized sharing of course content may constitute a breach of the [Academic Code of Conduct](#) and/or the [Code of Rights and Responsibilities](#). As specified in the [Policy on Intellectual Property](#), the University does not claim any ownership of or interest in any student IP. All university members retain copyright over their work.

Extraordinary circumstances

In the event of extraordinary circumstances and pursuant to the [Academic Regulations](#) the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the change.