

MAST 331
Mathematical Modelling
Winter 2020

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Office Hours: _____

References: *Chaos*, James Gleic
Encounters with Chaos, by Denny Gulick, McGraw Hill.
A First Course in Chaotic Dynamical Systems, R. Devaney, McGraw Hill.

Course Outline:

1. Introduction to modeling and dynamical systems.
2. First order linear dynamical systems.
3. Introduction to nonlinear dynamical systems.
4. Stability and bifurcation behavior for nonlinear dynamical systems.
5. Chaos.
6. Dynamical systems of several equations.

Calculators: Only calculators approved by the Department (with a sticker attached as proof of approval) are permitted in the class test and final examination. The preferred calculators are the **Sharp EL 531** and the **Casio FX 300MS**, available at the Concordia Bookstore.

Grading: The final grade is the weighted average of assignments (20%); a midterm test (20%); and the final examination (60%);
OR 100% for the final examination.

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.

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]