Department of Mathematics & Statistics
Concordia University

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MAST 331
Mathematical Modelling
Fall 2015

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Instructor: Dr. N. Rossokhata, Office: LB 915-1 (SGW), Phone (514) 848-2424, Ext. 2130
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Lectures: Tuesdays and Thursdays, 14:45-16:00, Room H-523 (SGW).

Office Hours: Tuesdays, 16:30-17:30 and Fridays, 10:30–11:30.

Textbook: *Introduction to Dynamical Systems: Continuous and Discrete*, 2nd Edition, by R. Clark Robinson, AMS, ISBN 978-0-8218-9135-3.

Course Content: **1.** Iteration of Functions as Dynamics (Ch. 8).
2. Periodic Points, Itineraries and Invariant sets for One-Dimensional Dynamical Systems (Ch. 9-11).
3. Two-dimensional Dynamical Systems (Ch. 12).
4. Fractals (Ch. 14).
5. Systems of Differential Equations (Ch. 1-5).
6. Periodic Orbits (Ch. 6).
7. Chaotic Attractors (Ch. 7).

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.

Assignments: Students are expected to submit assignments weekly during the last class of the following week. **Late assignments will not be accepted.** Some questions (but not all) will be marked. Solutions, together with this outline, will be posted electronically on the course's Moodle website, which is accessible through your portal.

Mid-term Test: There will be one mid-term test in week 7-8.

PLEASE NOTE: It is the Department's policy that tests missed for any reason, including illness, cannot be made up. If you miss a test, the Final Exam will count for 100% of your final grade.

Final Exam: At the end of course, there will be a 3-hour closed book final examination.
PLEASE NOTE: Students are responsible for finding out the date and time of the final exam once the schedule is posted by the Examination Office. Any conflicts or problems with the scheduling of the final exam must be reported directly to the Examination Office, **not** to your instructor. It is the Department's policy and the Examination Office's policy **that students are to be available until the end of the final exam period. Conflicts due to travel plans will not be accommodated.**

Final Grade: The final grade will be the higher of (a) or (b):
(a) 20% for the assignments, 20% for the midterm test, 60% for the final.
or
(b) 100% for the final examination.