MACF 491 (ACTU 491/MAST 729/MAST 881), Sec. I
Stochastic Calculus
Topics in Mathematical & Computational Finance
Fall 2023

Instructor: Dr. W. Sun, Office: LB 921-17 (SGW), Phone: 514-848-2424, Ext. 5218
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Schedule: Mondays & Wednesdays, 11:45-13:00.

Office Hours: TBA.

Stochastic Differential Equations by B. Oksendal, Springer.

Homework: There will be 3 assignments.

Mid-term break: Tuesday, October 10 - Sunday, October 15, 2023.

Exam: There will be a take-home final exam. No midterm exam.

Grading:
a) Homework (30%)
b) Presentation (20%)
c) Final Exam (50%)

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.
Topics: This course introduces the basic ideas and methods of stochastic calculus. Topics covered include:
1) Martingales.
2) Brownian motion and Markov processes.
3) Stochastic integrals, Ito's formula, and Girsanov theorem.
4) Stochastic differential equations.

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]

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