Department of Mathematics & Statistics
Concordia University

MACF 491 (STAT 497/MAST 679/MAST 881), Sec. I

Topics in Mathematical & Computational Finance

Winter 2020

Instructor: Dr. X. Zhou, Office: LB 921-19 (SGW), Phone: (514) 848-2424, Ext. 3220
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Office Hours: Tuesday, 15:30-17:00.

Class Schedule: Tuesday, 13:15-15:30.

Textbook: *Introductory Lectures on Fluctuations of Levy Processes with Application* by A.E Kyprianou, 2nd Edition, Springer.
Gerber-Shiu Risk Theory by A.E Kyprianou, Springer.

Outline: This course is an introduction to the modern theory of Levy processes. Topics covered include:

- Levy-Ito decomposition
- Subordinators
- Wiener-Hopf factorization
- Spectrally negative Levy processes
- Scale functions
- Reflected Levy processes
- Basic excursion theory
- Applications in risk theory and branching processes

Evaluation: Each student gives a short presentation at the end of the class.
The course mark will be determined by attendance (30%) and the presentation (70%).

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]*