1. **General course information**

- AS9956B: Decision Theory in Insurance and Finance
- 2019–2020 Winter term: January 6 – April 3, 2020
- Discussion room: WSC 274, or as announced
- Day and time: Regularly, but by appointment (to accommodate the different time constraints of all registered students)

2. **Course description**

**Objectives**
- Advanced measure theory
- Stochastic processes
- Stochastic calculus
- Applications in insurance and finance

**Learning outcomes**
- Familiarity with modern, application-driven methods and techniques of stochastic calculus and stochastic processes in discrete and continuous time

3. **Course materials**

**Main textbook:**
- Lawler, G.F. *Stochastic Calculus: An Introduction with Applications.*

**Additional textbooks:**
- Karatzas, I. and Shreve, S.E. *Brownian Motion and Stochastic Calculus.*
- Øksendal, B. *Stochastic Differential Equations: An Introduction with Applications.*

4. **Methods of evaluation**

At least five problems on stochastic calculus or related fields, with solutions, submitted at the end of January (20%), February (20%), and March (20%). Hence, in total, at least 15 solved problems. Solutions can be typed or handwritten, depending on your preference. The difficulty of problems should be such that they would be suitable for examinations of future students specializing in insurance and finance.

A mini-conference at the end of the term (40%) will be held, with presentations and discussions of theory and applications of Stochastic Calculus, Stochastic Processes, Probability, and related fields.

---

1Final version prepared on January 22, 2020.