

ACT370 H1S - FINANCIAL PRINCIPLES FOR ACTUARIAL SCIENCE II

Lecture:	Monday 10:00—13:00
Instructor:	Prof. Silvana Pesenti, Hydro Building 9105 silvana.pesenti@utoronto.ca
Office Hours:	TBC.
Teaching Assistants:	Sebastian Calcetero and Hassan Abdelrahman

Course description: The course covers financial derivatives, their pricing and hedging. The course is composed of three parts, the first is an overview / review of financial instruments, such as forward, futures, and options. The second part is devoted to pricing of financial instruments in discrete time using the Binomial asset pricing models. The third part covers pricing of financial instrument in continuous time using the Black-Scholes formula.

1. Pricing financial instruments (forwards, future, option pricing, no arbitrage)
2. Binomial asset pricing model (replicating portfolios, risk neutral pricing, multi-period Binomial model)
3. Black-Scholes Model (Brownian Motion, Black-Scholes formula, Greeks)

Prerequisite: ACT240H1 (minimum 63%); ACT245H1 (minimum 63%); ACT247H1 (minimum 63%);

Corequisite: STA257H1; MAT237Y1/MAT257Y1.

Course materials: Recommended (but not required) textbook *Derivatives Markets* by Robert L. McDonald, 3rd ed., Pearson, 2013. ISBN-13: 9780137612864.

Academic integrity: We adhere to the Academic Integrity policy of the University of Toronto, accessible on the course homepage of Quercus and the U of T homepage.

Course outline: All lectures and tutorials will be in person. There will be no recording of lectures and tutorials. **In all weeks (apart from the weeks with term tests) there are tutorials from 12.10 to 13.00 o'clock.** Attending tutorials is encouraged as they will form part of the material covered in assessments. The last week of the term will be 2 hours consisting of tutorial and office hour.

Grading scheme:

Assessment	Date	Length	Grade count
Term test 1	Monday, February 5	2 h	25%
Term test 2	Monday, March 25	2 h	25%
Final exam	TBA	TBC	50%
			100%

Missed mid terms: There will be no mark-up tests for term tests. Missed assessment due to illness require a [University of Toronto Student Medical Certificate](#), completed by a doctor, and handed in to the course instructor within one week of the assessment's deadline date. A missed assessment, with an under U of T guidelines *accepted* reason, will have their grading weights shifted to the final exam. If both term tests are missed, there will be a minimum of a 30 minutes oral mark-up exam.

Communication: Announcements will be given during lectures and through Quercus; messages through the Inbox of Quercus will not be responded.

For any questions about the course content including assessments, please come to the office hours. Emails to the instructor need be from a U of T address and should only be of private matters (e.g missed tests, ...).

Society of Actuaries (SOA): This course is not mapped to any SOA exams.

Canadian Institute of Actuaries (CIA)'s University Accreditation Program (UAP): This course is one of the mandatory courses under Canadian Institute of Actuaries (CIA)'s University Accreditation Program (UAP). UAP has moved away from the course-by-course accreditation and is now based on a program accreditation method. Under the new credentialing pathway, to obtain ACIA (Associate of CIA) professional credential, students need to:

1. Complete a degree from an actuarial program (ACT Specialist or Major) at University of Toronto and pass a list of mandatory courses. No minimum course grade or GPA is required. The full list of UofT's 16 mandatory courses are: ACT240, ACT245, ACT247, ACT348, ACT349, ACT370, ACT451, ACT452, ACT466, STA237/STA257, STA238/STA261, STA302, STA314, ECO101, ECO102, MGT201/RSM219;
2. Complete the ACIA Modules;
3. Complete an open-book ACIA Capstone Exam.

For further information on ACIA modules and Capstone Exam, please email education@cia-ica.ca.