

ACT 240H1F, Fall 2017 Mathematics of Investment and Credit

Lecture Section	L0101 Mondays, Fridays	
Lecture times, location	M 10-12, From Sep 11 in MP202 F 10 (tutorial), From Sep 22	
Instructor	Dr. Andrei Badescu	
	Office: Stewart Building, 411A badescu@utstat.utoronto.ca	
Instructor's office hours	Wed 12:30 pm– 2:00 pm	
TA office hours	Alex Yang - SS 623B, Mon 1-2 pm from Sept 18 to 20 th Oct Kamal Rai – SS623B, Thursday 2-3 pm from Sept 18 to 20 th Oct Yuenan Cai – SS623B, Thursday 11 -12 from 20 Oct till the end	
Tutorial sections based on your registration	F 10:00 – 11:00 Starts Sep 22, SS1072 – Kamal Rai SS1084 – Alex Yang SS1086 – Yuenan Cai	

Texts:

Required

- Exam FM Study Guide, 2017, Samuel A Broverman,

Additional

- Mathematics of Investment and Credit, 6th. Ed., Samuel A Broverman, ACTEX Publications, 2016
- Kellison, S.G., The Theory of Interest (Third Edition), 2009, Irwin/McGraw-Hill

Course Objective:

This course is designed to help prepare you for exam FM of the Society of Actuaries and for future university courses. You are expected to read and understand the descriptive portions of the text yourself. Questions and in-class discussions are encouraged.

Approximate Coverage:

- Interest Rate Measurement – Sections 1-3
- Valuation of Annuities – Sections 4 - 8
- Loan Repayment – Sections 9 - 10
- Bond Valuation – Sections 11 – 12
- Measuring the Rate of Return in a Fund – Section 13
- Term Structure, Forward Rates and Duration – Section 14, 15
- Interest rate swaps – Section 16

ACT 240 Fall 2015 (Continued)

Marking Scheme:

The final course mark will be determined via 1 in-class term test, worth 35%, a final exam worth 50% and 3 Quizzes worth for a total of 15%. These weights will not be changed, either for the whole class or for any individuals. The test and the final exam will be in multiple choice format to prepare you for the SOA exam.

- Term Test - 30th of October, 1 ½ hours (during the class time). The rooms will be announced later.
- Final Exam - TBA

The quizzes will be given during the tutorial times, each of them being worth 5% of the final grade. There is no make-up quiz. The date of each quiz will be announced in the beginning of that week in class and on the blackboard. Each quiz will consist of 1 question from either one of the previous tutorials and/or from a small set of questions assigned to you from the study guide.

Missed Term test:

Please do not take this course if you plan to be sick for the obligatory term test. There will be no make-up test. Should you miss the term test, you are required by faculty regulation to submit the appropriate documentation (within one week after the missed term test) to the course instructor or the Departmental office: SS6018. Print on the documentation your name, student #, the course number and the date. We are skeptical about accepting medical certificates unless the doctor specifically indicates that in his/her opinion there was a disabling health problem on the day of the test. If your documentation is accepted, the test's weight will be shifted such that your final mark will consist of the mark obtained in the final exam. If documentation is not provided or is not accepted, your test mark for the missed test will be zero.

Extract from SoA Exam FM Syllabus

Knowledge and understanding of financial mathematics concepts are significantly enhanced through working out problems based on those concepts. Thus in preparing for the Financial Mathematics examination, whichever of the source of textbooks students choose to use, students are encouraged to work out the textbook exercises related to the listed readings.

Calculator

A calculator is essential for working exercises, tests and final exam. The Texas Instruments BA II PLUS calculator is one of the calculators allowed on the Society of Actuaries examinations; it has the financial functions that would be needed for this course, and is recommended. It is necessary for ACT240 that your calculator be able to solve for the interest rate i in calculations such as $10(1+i)^4 + 20(1+i)^3 + 30(1+i) = 160$. ONLY the non-programmable calculators are allowed.

Continuation in ACT

There are rules regarding the minimum mark needed in ACT240, ACT245 and ACT247. It's important to visit the act-sci webpage for details (www.utstat.toronto.edu, take the actuarial program link).

E-mail policy:

E-mails will only be answered if they are from a U of T address. When there are many e-mail requests, not all can be answered, but an answer to a common question will be posted on the blackboard.

Updates:

All the possible updates regarding to this course will be made in class and on blackboard.

UAP course syllabus:

"Canadian Institute of Actuaries (CIA)'s University Accreditation Program (UAP)

ACT240 is an accredited course under the UAP program. The minimum grade needed to apply for an exemption is 75. For detailed information on UAP, please visit the following webpages:

- University Accreditation Program description (<http://www.cia-ica.ca/membership/uap>) <<http://www.cia-ica.ca/membership/uap>>
- List of accredited courses offered by University of Toronto: <http://www.cia-ica.ca/membership/uap/accredited/toronto> <<http://www.cia-ica.ca/membership/uap/accredited/toronto>>
- How to apply for CIA exemptions: <http://www.cia-ica.ca/membership/uap/information-for-students> <<http://www.cia-ica.ca/membership/uap/information-for-students>>

Note: The CIA will grant credits to students for SOA/CAS examinations based on the achievement of the minimum Grade towards Associateship (ACIA) and Fellowship (FCIA) in the CIA. At the time of this agreement, CIA credits are recognized by the following actuarial organizations towards their respective designations:

Casualty Actuarial Society (CAS): ACAS, FCAS

UK Institute and Faculty of Actuaries (IFoA): FIA, AIA

Institute of Actuaries of Australia (IAA): AIAA, FIAA

Actuarial Society of South Africa (ASSA): AMASSA, FASSA

American Academy of Actuaries (AAA): MAAA

The CIA does not guarantee that credits granted to students under the CIA UAP will be recognized by any other actuarial organizations towards their actuarial designations."

