

**UNIVERSITY OF TORONTO**  
**Department of Statistical Sciences**

***ACT245 – Financial Principles for Actuarial Science I***  
***(Summer 2019)***

**Instructor:** Yu Wang

**Lecture:** Monday & Wednesday at SS1086

**Office Hour:** Wednesday 9-9:30pm (starting July 10)

**Teaching Assistant:** Spark Tseung

**Tutorial:** Monday & Wednesday at SS1086 (starting July 10)

**Course Evaluation**

- Term Test 1: 25% (July 15, 6-7pm)
- Term Test 2: 25% (July 29, 6-7pm)
- Final Exam: 50% (During exam period August 15-22)

**Course Schedule**

| Date                           | 6-7pm   | 7-9pm  | Lecture Coverage  |
|--------------------------------|---------|--------|---|
| July 3                         |         | Lec 1  | Spot & Forward Rates, Yield Curve, Term Structure, Duration & Convexity |
| July 8                         |         | Lec 2  | Immunization, Derivatives, Arbitrage, Prepaid Forward Contracts         |
| July 10                        | Tut     | Lec 3  | Forward Contracts   |
| July 15                        | Test-1* | Lec 4  | Futures Contracts   |
| July 17                        | Tut     | Lec 5  | Introduction to Options   |
| July 22                        | Tut     | Lec 6  | Put-Call Parity   |
| July 24                        | Tut     | Lec 7  | Option Spreads  |
| July 29                        | Test-2* | Lec 8  | Option Strategies   |
| July 31                        | Tut     | Lec 9  | Non-directional Option Strategies                                       |
| August 7                       | Tut     | Lec 10 | General Swaps and Prepaid Swaps   |
| August 12                      | Tut     | Lec 11 | Interest Rate Swaps and Applications                                    |
| *Test location to be announced |         |        |   |

**Required Textbook**

*Actuarial Science Coursebook for ACT240H + ACT245H, 2018 Edition (S. Broverman)*

ACT245 will cover Sections 13 – 20

**Calculator**

A *non-programmable* calculator is required for this course. There is no restriction on models but students are strongly encouraged to use the models allowed for actuarial professional exams.

### **Missed Test**

Should you be forced to miss a test due to illness, you are required by faculty regulations to submit, within one week, the “*University of Toronto Verification of Student Illness or Injury*” form to the instructor. The form must be completed by an Ontario-registered Physician, Surgeon, Nurse Practitioner, Registered Psychologist or Dentist with registration number and phone number, and indicate the degree of incapacitation on academic functioning and date of illness. If proper documentation is not provided, a grade of zero will be given for the missed test.

For students who miss a test due to acceptable reason, the weight of the missed test will be shifted to the final exam.

### **Academic Integrity**

Please visit: [www.artsci.utoronto.ca/osai/students](http://www.artsci.utoronto.ca/osai/students)

### **Minimum Grade C Rule for Actuarial Science Courses**

In order to enroll in any 300- or 400-level ACT course, the minimum grade of 63% must be obtained in each of ACT240H1, ACT245H1 and ACT247H1.

### **Canadian Institute of Actuaries (CIA)’s University Accreditation Program (UAP)**

ACT245 is an accredited course under the UAP program. The minimum ACT245 grade needed to apply for a credit is 70%. For detailed information on UAP, please visit:

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

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.