

**ACTU 357**  
Actuarial Mathematics II  
*Fall 2023*

**Instructor:** Dr. P. Gaillardetz, Office: LB 1041-23 (SGW), Phone: 848-2424, Ext. 3249  
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**Schedule:** Tuesdays & Thursdays, 14:45-16:00.

**Office Hours:** TBA.

**Goal:** This course is a continuation of ACTU 257, and builds on the concepts and notation developed in that course. The course prepares for some of the topics of the Society of Actuaries and Casualty Actuarial Society.

**It is one of the two courses recognized by the Canadian Institute of Actuaries for an accreditation of the exam LTAM.**

The following topics will be covered:

- Benefit reserves
- Multiple life functions
- Multiple decrements
- Multiple state models and applications
- Emerging costs for traditional life insurance
- Participating and Universal Life insurance
- Pension Plans and Retirement Benefits

**References:** *Actuarial Mathematics for Life Contingent Risks*, 2nd Edition, by D.C.M. Dickson, M.R. Hardy, and H.R. Waters, Cambridge University Press, 2013.

**Calculators:** The only calculators allowed in exams for this course are the battery- or solar-powered Texas Instrument calculators, models BA-II Plus\*, BA-II Plus, TI-30X, TI-30Xa (the official CAS calculator) or TI-30X II\*.

\* The memory of TI-30X II (IIS solar or IIB battery), TI-30X MultiView (XS Solar or XB Battery), BA II Plus, and BA II Plus Professional will need to be cleared by the examination supervisor upon the candidates' entrance to the examination room. For the BA II Plus and BA II Plus Professional, clearing will reset the calculator to the factory default settings.

**Assignments:** There will be six to eight assignments (Moodle).

**Tests and Final:** Midterm: October 19th  
Final Exam: Examination period in December

**Grading:** The final grade will be determined as follows:  
Assignments: (20%)  
Midterm: (30%)  
Final Exam: (50%)

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.

**IMPORTANT:** **THERE WILL BE NO SUPPLEMENTAL FOR THIS COURSE AND NO 100% OPTION FOR THE FINAL EXAM.**

#### **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: <https://www.concordia.ca/conduct/academic-integrity.html>" [*Undergraduate Calendar, Sec 17.10.2*]

#### **Behaviour**

All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications.

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#### **Extraordinary circumstances**

In the event of extraordinary circumstances and pursuant to the [Academic Regulations](#) the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the change.