COURSE OUTLINE

1. **Course:** ACSC 527, Life Contingencies III - Winter 2021
   
   Lecture 01: MWF 11:00 - 11:50 - Online

   **Instructor**
   
   Dr Rohana Ambagaspitiya
   
   ambagasp@ucalgary.ca
   
   **Phone**
   
   403 220-7679
   
   **Office**
   
   MS 556
   
   **Hours**
   
   Mondays and Wednesdays 10:00AM-11:00AM or by appointment

   This course is accredited under the Canadian Institute of Actuaries (CIA) University Accreditation Program (UAP). Achievement of the minimum required grades in accredited courses may provide credit for preliminary exams. Please note that a combination of courses may be required to achieve exam credit.

   **Online Delivery Details:**

   This course is being offered online in real-time via scheduled meeting times, you are required to be online at the same time.

   To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

   This course has a registrar scheduled, synchronous final exam. The writing time is 3 hours + 8% buffer time.

   I will deliver lectures through zoom during the class time (MWF 11:00AM-11:50AM).

   **Course Site:**

   D2L: ACSC 527 L01-(Winter 2021)-Life Contingencies III

   **Note:** Students must use their U of C account for all course correspondence.

2. **Requisites:**

   See section 3.5.C in the Faculty of Science section of the online Calendar.

   **Prerequisite(s):**

   Actuarial Science 327; Statistics 323; 3 units from Mathematics 311, 313, 367 or 375; and 3 units from Computer Science 217, 231, 235 or Data Science 211.

3. **Grading:**

   The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar.

   In determining the overall grade in the course the following weights will be used:

<table>
<thead>
<tr>
<th>Component(s)</th>
<th>Weighting %</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>17%</td>
<td>February 1, 2021 (11:00AM-12:00PM, MST)</td>
</tr>
<tr>
<td>Test 2</td>
<td>17%</td>
<td>March 1, 2021 (11:00AM-12:00PM, MST)</td>
</tr>
<tr>
<td>Test 3</td>
<td>16%</td>
<td>Due at 12PM on Mar 25, 2021 (Exam will open 24 hours prior to this time. This will be a take home type exam with some Excel based questions)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>50%</td>
<td>Scheduled by the Registrar's office.</td>
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   **Notes:**

   1. Tests 1-2: Allocated time for each test is 45 minutes with additional 15 minutes for downloading/uploading.
   2. Final exam: Synchronous and the allocated time is 3 hours with additional 15 minutes for downloading/uploading. Please see why 7. Examination Policy for the CIA accreditation policy.
Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum % Required</th>
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<tbody>
<tr>
<td>A+</td>
<td>95 %</td>
</tr>
<tr>
<td>A</td>
<td>90 %</td>
</tr>
<tr>
<td>A-</td>
<td>85 %</td>
</tr>
<tr>
<td>B+</td>
<td>80 %</td>
</tr>
<tr>
<td>B</td>
<td>75 %</td>
</tr>
<tr>
<td>B-</td>
<td>70 %</td>
</tr>
<tr>
<td>C+</td>
<td>65 %</td>
</tr>
<tr>
<td>C</td>
<td>60 %</td>
</tr>
<tr>
<td>C-</td>
<td>55 %</td>
</tr>
<tr>
<td>D+</td>
<td>50 %</td>
</tr>
<tr>
<td>D</td>
<td>45 %</td>
</tr>
</tbody>
</table>

This course will have a final exam that will be scheduled by the Registrar. The Final Examination Schedule will be published by the Registrar’s Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 3 hours.

The final exam will be administered using an on-line platform. Per section G.5 of the online Academic Calendar, timed final exams administered using an on-line platform, such as D2L, will be available on the platform where the additional time will be added to the beginning of the registrar scheduled exam. E.g. If an exam is designed for 2 hours and the final exam is scheduled from 9-11am in your student centre, the additional time will be added to the start time of the exam. This means that if the exam has a 1 hour buffer time,

* a synchronous exam would start at 8 am and finish at 11am.

4. Missed Components Of Term Work:

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

5. Scheduled Out-of-Class Activities:

There are no scheduled out of class activities for this course.

6. Course Materials:

Required Textbook(s):


In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

* A computer with a supported operating system, as well as the latest security, and malware updates;
* A current and updated web browser;
* Webcam/Camera (built-in or external);
* Microphone and speaker (built-in or external), or headset with microphone;
* Current antivirus and/or firewall software enabled;
* Stable internet connection.

For more information please refer to the UofC ELearning online website.
7. **Examination Policy:**

Exams are open book exams but students must submit their own work only.

Students should also read the Calendar, Section G, on Examinations.

As this course is a CIA accredited course, we need to follow two of the preferred practices given in the CIA UAP.
1. Exams will be published online at the same time for all candidates, with a total publication and completion time limit corresponding to the exam duration plus a limited period of about 15 minutes for upload if paper answers are to be uploaded. Exceptions will be made only to students who have SAS accommodations and/or students who are living in different time zones; these will be handled on a case by case basis.
2. You will be required to sign the following statement based on honor on each assessment:
   "I understand that this assessment is part of an accredited course under the University Accreditation Program of the Canadian Institute of Actuaries (CIA). In addition to the University rules governing academic integrity, I understand that I am subject to the Code of Conduct and Ethics for Candidates in the CIA Education System and related policy. I swear on my honor to have completed the work on my own and in accordance with the assessment’s rules and instructions."

8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

9. **Writing Across The Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.

10. **Human Studies Statement:**

Students will not participate as subjects or researchers in human studies.

See also Section E.5 of the University Calendar.

11. **Reappraisal Of Grades:**

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See Section I.3 of the University Calendar.

   a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within ten business days of either being notified about the mark, or of the item’s return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections L.1 and L.2 of the University Calendar.

   b. **Final Exam:** The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

12. **Other Important Information For Students:**

   a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).

   b. **SU Wellness Services:** For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.

   c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at 403-220-2208. The complete University of Calgary policy on sexual violence can be viewed at (https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf)
d. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional Code of Conduct and promote academic integrity in upholding the University of Calgary’s reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor’s permission; borrowing experimental values from others without the instructor’s approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

   - [Student Handbook on Academic Integrity](#)
   - [Student Academic Misconduct Policy and Procedure](#)
   - [Research Integrity Policy](#)

Additional information is available on the [Student Success Centre Academic Integrity page](#).

e. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#).

   Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head of the Department of Mathematics & Statistics, Mark Bauer by email bauerm@ucalgary.ca or phone 403-220-4189. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See [Section E.4](#) of the University Calendar.

f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see [Legal Services](#) website.

g. **Student Union Information:** [VP Academic](#), Phone: **403-220-3911** Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca). [SU Faculty Rep.](#), Phone: **403-220-3913** Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca). [Student Ombudsman](#), Email: [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca).

h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

j. **Canadian Institute of Actuaries Ethics:** In addition to the university's internal policies on conduct, including academic misconduct (Section K of the online calendar), candidates pursuing credits for writing professional examinations shall also be subject to the Code of Conduct and Ethics for Candidates in the CIA Education System and the associated Policy on Conduct and Ethics for Candidates in the CIA Education System. For more information, please visit [Obtaining UAP Credits and the CIA FAQ](#).

**Course Outcomes:**

- Calculate present values of annuities and insurances on independent and dependent multiple lives.
- Calculate present values and cash flows of Universal insurances and participating insurances.
- Describe and compare defined benefits plans and defined contribution plans.
- Identify and interpret the common states and decrements for pension plans, and the parametric and tabular...
models, including Markov chain models, associated with these decrements

- Calculate and interpret the actuarial accrued liability and the normal cost for defined benefit plans under projected unit credit (PUC) and traditional unit credit (TUC) funding.
- Calculate the impact of changing mortality, expenses and investment assumptions for all the products that was discussed in the course.