

## COURSE OUTLINE

**AS 3424B/AS 9424B Short-term Actuarial Mathematics I  
2023-2024****Instructor Information**

Instructor: Kristina Sendova  
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Office Hours: Mon. 11:30 a.m. – 12:30 a.m.  
Zoom link: <https://westernuniversity.zoom.us/j/98855327116>  
Zoom Meeting ID: 988 5532 7116  
Passcode: 002154

Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

**Course Information**

Course Description: Insurance loss frequency and severity models; aggregate loss models; risk measures; ruin theory; coverage modifications.

Prerequisites: SS3657A/B A minimum mark of 60% in Statistical Sciences 3657A/B. Restricted to students enrolled in any Actuarial Science module, or those registered in the Honours Specialization module in Statistics or the Honours Specialization in Financial Modelling module.

Pre-, Co-requisites: Unless you have either the prerequisites for this course or a written special permission from your Dean to enrol in it, you may be removed from this course and it will be deleted from your record. You can be deregistered at any time even after writing the final exam. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Lecture Hours: Mon., Wed., Fri. 9:30 a.m. – 10:30 a.m., WSC 240.

## Book information

- Required Textbook: *Loss Models: From Data to Decisions*, 5th edition by Klugmann, S.A., Panjer, H.H., and Willmot, G.E., John Wiley and Sons, Inc.  
*Student Solutions Manual* to accompany *Loss Models: From Data to Decisions* by Klugmann, S.A., Panjer, H.H., and Willmot, G.E., John Wiley and Sons, Inc.
- Recommended Textbook: *Loss Models: Further Topics*, 2013, by Klugmann, S.A., Panjer, H.H., and Willmot, G.E., John Wiley and Sons, Inc.

## Course objectives

This course is intended to familiarize the student with a variety of techniques for the analysis of aggregate losses. Following the introductory Chapters 1 and 2 of the textbook, coverage will focus primarily on Chapters 3 through 9 in *Loss Models: From Data to Decisions* and Chapter 4 in *Loss Models: Further Topics*.

## Assessment

- Assignments: One assignment due at the last day of classes will be graded. In addition, some practice questions will be assigned to help understand the material. These questions are important in the preparation for the midterm tests and the final exam.
- Midterm tests: Two closed-book midterm tests will be given on February 7 and March 15, respectively, during the regular class time.
- Final exam: A three-hour closed-book final exam is scheduled by the Registrar's Office during the regular exam session.

## Method of evaluation

Undergraduate students will be evaluated on the basis of the assignment, the two midterm tests and the final exam. The final mark will be based on weights of 10% for the assignment, 20% for each of the midterm tests, and 50% for the final exam.

Graduate students will be evaluated on the basis of two assignments, the two midterm tests and the final exam. The final mark will be based on weights of 5% for each of the assignments, 20% for each of the midterm tests, and 50% for the final exam.

In order to obtain full credit or maximize partial credit on questions, students must outline clearly their approach, showing calculations when necessary.

Each week suggested practice questions will be posted on the OWL website of the course. Assistance with solving them may be obtained during the instructor's office hours. If a student requires remarking of a test, the test must be submitted to the instructor within two weeks of the test date. Any changes made after this period will not be reflected in the recorded marks.

Across the Sciences Undergraduate Education programs, we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. **Final grades** on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks **will not** be bumped to the next grade or GPA, e.g. a 79 **will not** be bumped up to an 80, an 84 **will not** be bumped up to an 85, etc. The mark attained is the mark you achieved, and the mark assigned; requests for mark “bumping” will be denied.

### Course website

No lecture notes will be posted online. However, some relevant readings, assigned practice questions, slides and announcements will be posted on the course OWL web page.

Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL site, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

### Calculators

A calculator is essential for working exercises, tests and final exam. There is no restriction on models of (non-programmable) calculators allowed for use in the course. It is, though, preferable for actuarial students to practice on SOA /CAS approved calculators.

### Sessional dates

- January 4: University re-opens
- January 8: Classes resume
- January 16: Deadline to add a second-term course
- February 17-25: Spring Reading Week
- March 7: Deadline to drop a second-term course without academic penalty
- March 29 and 31: Good Friday and Easter Sunday
- April 8: Last day of classes
- April 9-10: Study days
- April 11-30: Examination period

## Contingency plan

Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will not change. Any assessments affected will be conducted online as determined by the course instructor.

## Student absences

### **Academic Consideration for Student Absences**

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration by providing valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf). The Student Medical Certificate is available at [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf).

Observe that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons.

### **Religious Accommodation**

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at <https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

### **Absences from assessments**

For all students who have had a valid reason and miss an evaluation, there will not be a make-up evaluation apart from the final exam. Instead, the weight of the missed assessment will be adjusted accordingly based on the other test and the final exam as long as they have not been written yet. In all other cases, students will receive a mark of 0 for the assessment.

Undergraduate students: If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below:

- For medical absences, submit a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.
- Submit appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons.

You may be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

Graduate students: If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below:

- For medical absences, obtain a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner and provide it to your instructor.
- Obtain appropriate documentation for non-medical absences and provide it to your instructor.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered.

### **Accommodation policies**

Students with disabilities work with Accessible Education (formerly SSD), which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/AcademicAccommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/AcademicAccommodation_disabilities.pdf)

### **E-mail communication**

You are welcome to communicate with your instructor by e-mail, but e-mail communication should only be used to provide her with information or to ask a question that requires a brief response. The best means of learning material that you find challenging is to drop by during office hours or to book an appointment. If you do e-mail your instructor, make sure to use your UWO account, as these are the preferred e-mail addresses (as e-mails sent from other addresses often get spammed).

### **Attendance**

Classroom attendance is viewed as an important part of the learning process. Students are advised that excessive absenteeism may result in the student being disbarred from the final exam (see Western Academic Calendar).

### **Scholastic offences**

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at (519) 661-2147 if you have any questions regarding accommodations.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at [https://www.uwo.ca/health/student\\_support/survivor\\_support/get-help.html](https://www.uwo.ca/health/student_support/survivor_support/get-help.html).

To connect with a case manager or set up an appointment, please contact [support@uwo.ca](mailto:support@uwo.ca).