

COURSE OUTLINES (SYLLABI) FOR GRADUATE COURSES**AS 9952 Course Outline****1. Course Information****Course Information**

Course Name: AS 9952 Recent Advances in Ruin Theory
Academic Term: Fall 2021
Lecture Hours: Tuesday 12:30pm – 3:30pm
Location: WSC 248

List of Prerequisites

Approved by the instructor(s).

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. 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.

2. Instructor Information

Instructors	Email	Office	Phone	Office Hours
Dr. Kristina Sendova	ksendova@stats.uwo.ca	WSC 266	ext 88232	Appointment by email
Dr. Shu Li	shu.li@uwo.ca	WSC 229	ext 85419	

Students must use their Western (@uwo.ca) email addresses when contacting their instructors and indicate the course number (AS 9952) in the subject line. We strive to answer all emails within 2 business days.

3. Course Syllabus, Schedule, Delivery Mode

This course provides an overview of recent developments in ruin theory. More specifically, it introduces the so-called Gerber-Shiu function, which encompasses as its special cases several quantities of interest, such as the probability of ruin, the Laplace transform of the time to ruin, the joint moments of the surplus before ruin and the deficit at ruin, etc. Several approaches to evaluate the Gerber-Shiu function as well as other quantities of interest that are not its special cases are presented.

Learning Outcomes

Upon successful completion of this course,

- Students will familiarize themselves with the most common techniques that are employed in the area.
- Students will be able to analyze several quantities of interest in insurance risk.

Table of Contents

- Chapter 1 Introduction
- Chapter 2 Gerber-Shiu analysis under the classical compound Poisson risk model
- Chapter 3 Gerber-Shiu analysis under the Sparre Andersen risk model

Key Sessional Dates:

Classes begin: September 8, 2021;

Reading Week: November 1–7, 2021;

Classes end: December 8, 2021.

Contingency plan for an in-person class pivoting to 100% online learning

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

4. Course Materials

There will be no official textbook. The course material will be mostly based on research papers available in the Western Libraries. A list of bibliography is posted on OWL.

Here are some advanced reading books:

1. Asmussen, S., Albrecher, H. (2010). *Ruin Probabilities*, 2nd Edition, World Scientific, Singapore.
2. Kaas, R., Goovaerts M., Dhaene, J., Denuit, M. (2008). Chapter 4 of *Modern Actuarial Risk Theory Using R*, 2nd Edition, Springer.
3. Klugman, S.A., Panjer, H.H. and Willmot, G.E. (2012). Chapter 11 of *Loss Models: Further Topics*, 4th Edition, Wiley, Hoboken, NJ.
4. Kyprianou, A. (2013). *Gerber-Shiu Risk Theory*, EAA Series, Springer.
5. Willmot, G.E., Lin, X.S. (2001). *Lundberg Approximations for Compound Distributions with Insurance Applications*, Springer.

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.

All course material will be posted to OWL: <http://owl.uwo.ca>. 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.

5. Methods of Evaluation

Midterm: There will be **one midterm** held during the lecture hour, expected on **Tuesday October 19**. The exam will be closed book. Some practice questions will be assigned prior to the exam.

Presentation: There will be **one presentation** required during the lecture hour. Each student's (individual) presentation should be based on at least one research paper, and presented either on the blackboard or on slides (or a combination of both).

Final Exam: A (take-home) **final exam** will be scheduled in the final examination period. Students are allowed to write their final exam outside of an examination room and consequently, they may consult any literature they find appropriate.

The overall course grade will be calculated as listed below:

Midterm Test	20%
Presentation	30%
Final Exam	50%

Accommodated Evaluations

- For all the exams, late submissions will not be accepted.
- There will be **no make-up exams** for a missed midterm.
- Any request regarding the remark of midterm must be submitted to the instructor **within one week** after the marked midterm exam paper is returned.

Rounding of Marks Statement

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.

6. 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 through the following routes:

- (i) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.

- (ii) Submitting 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, unless otherwise instructed in the course outline.

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. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For the policy on Academic Consideration for Student Absences – Undergraduate Students in First Entry Programs, see:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf

and for the Student Medical Certificate (SMC), see:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

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 Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also 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).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

6. Accommodation and Accessibility

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/Academic_Accommodation_disabilities.pdf,

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

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.

8. Support Services

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.

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/>.

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.

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

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