

The University of Iowa
College of Liberal Arts and Sciences
Department of Statistics and Actuarial Science
ACTS:4280 Life Contingencies II Fall Semester 2020
MW (4:30 to 5:20 pm 109 EPB) TTh (5 to 6:20 pm 107 EPB)

Instructor: Dr. E.S.W. Shiu Office: 362 SH Phone: 319 335 2580 E-mail: elias-shiu@uiowa.edu
Office Hours: 7:45 am to 8:45 am, Monday, Tuesday and Thursday; or by appointment. You can also e-mail me or phone me.

Department: Statistics & Actuarial Science, 241 SH Phone: 319 335 2082

D.E.O.: Dr. Kung-Sik Chan Phone: 319 335 0712 E-mail: kung-sik-chan@uiowa.edu

Prerequisites: Multivariate calculus and linear algebra, STAT:4101 or STAT:5101, **and** a grade of C+ or better in ACTS:4180. Some knowledge of Markov chains and differential equations will be helpful.

This is an off-cycle course.

This course, based on the syllabus for the Society of Actuaries (SOA) examination Long-Term Actuarial Mathematics (LTAM), is a continuation of ACTS:4180. It is expected that students will write LTAM on October 23. The LTAM textbook is *Actuarial Mathematics for Life Contingent Risks*, 3rd ed (2020), by D.C.M. Dickson, M.R. Hardy, and H.R. Waters, Cambridge University Press. The course will cover its Chapters 8, 9, 10, 11, 13, and 19.

Below are some useful references.

- *Actuarial Mathematics*, 2nd edition, by N. L. Bowers, Jr., H. U. Gerber, J. C. Hickman (U Iowa MS 1952, PhD 1961), D. A. Jones (U Iowa MS 1956, PhD 1959), and C. J. Nesbitt, published by the Society of Actuaries in 1997.
- *Solutions Manual for Actuarial Mathematics for Life Contingent Risks*, 3rd edition, by D. C. M. Dickson, M. R. Hardy, and H. R. Waters, Cambridge University Press.
- *Life Insurance Mathematics*, 3rd edition, by H. U. Gerber (a book published by Springer for the Swiss Association of Actuaries). <http://link.springer.com/book/10.1007/978-3-662-03460-6>
- *Models for Quantifying Risk*, 6th edition, by S.J. Camilli, I. Duncan, and R. L. London, ACTEX Publications, and its *Solutions Manual*.
- *Life Contingencies*, 2nd edition, by C. W. Jordan, Jr., Society of Actuaries.
- *Fundamental of Actuarial Mathematics*, 3rd edition, by S. D. Promislow, Wiley.
- *Stochastic Models in Life Insurance* by Michael Koller (a book published by Springer for the European Actuarial Academy). Using a campus connection, you can download the entire book for free <http://link.springer.com/book/10.1007/978-3-642-28439-7>
- *Introduction to Insurance Mathematics: Technical and Financial Features of Risk Transfers* by Annamaria Olivieri and Ermanno Pitacco . You can download it for free from <https://link.springer.com/book/10.1007/978-3-642-16029-5>

There will be four closed-book examinations, each on a Tuesday. The dates of the first three exams are September 1, September 22, and October 6 (5 to 6:20 pm, 107 EPB). The last one will be held on October 27, 6:30 to 8:30 pm, in 3655 SC. You are to use an SOA-approved calculator.

Tentatively, the final grade (HW 6% + Exams 15% + 23% + 23% + 33%) will be assigned as follows:

Undergrads F[0, 40); D-[40, 45); D[45, 50); D+[50, 55); C-[55, 60); C[60, 65);

C+[65, 70); B-[70, 75); B[75, 80); B+[80, 85); A-[85, 90); A[90, 95); A+[95, 100]

Graduate students F[0, 46); D-[46, 50.5); D[50.5, 55); D+[55, 59.5); C-[59.5, 64); C[64, 68.5); C+[68.5, 73); B-[73, 77.5); B[77.5, 82); B+[82, 86.5); A-[86.5, 91); A[91, 95.5); A+[95.5, 100]

Absences and Attendance

Students are responsible for attending class and for contributing to the learning environment of a course. Students are also responsible for knowing their course absence policies, which will vary by instructor. All absence policies, however, must uphold the UI policy related to student illness, mandatory religious obligations, including Holy Day obligations, unavoidable circumstances, or University authorized activities (<https://clas.uiowa.edu/students/handbook/attendance-absences>). Students may use the CLAS absence form to aid communication with the instructor who will decide if the absence is excused or unexcused. The form is located on ICON within the top banner under "Student Tools."

Academic Integrity

All undergraduates enrolled in courses offered by CLAS have, in essence, agreed to the College's [Code of Academic Honesty](#). Misconduct is reported to the College, resulting in suspension or other sanctions, with sanctions communicated with the student through UI email. Visit this page for information: (<https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code>).

Accommodations for Disabilities

UI is committed to an educational experience that is accessible to all students. A student may request academic accommodations for a disability (such as mental health, attention, learning, vision, and physical or health-related condition) by registering with Student Disability Services (SDS). The student is then responsible for discussing specific accommodations with the instructor. More information is at <https://sds.studentlife.uiowa.edu/>.

Administrative Home of the Course

The College of Liberal Arts and Sciences (CLAS) is the administrative home of this course and governs its add/drop deadlines, the second-grade-only option, and related policies. Other colleges may have different policies. CLAS policies may be found here: <https://clas.uiowa.edu/students/handbook>.

Classroom Expectations

Students are expected to comply with University policies regarding appropriate classroom behavior as outlined in the [Code of Student Life](#). This includes the policies and procedures that all students have agreed to regarding the Steps Forward for Fall 2020 in response to the COVID-19 pandemic. Particularly, **all students are required to wear a face cover when in a UI building, including a classroom**. In addition, the density of seats in classrooms has been reduced. In some instances, this will allow 6 feet or more of distance while other cases, it may be less. Regardless, wearing face coverings and maintaining as much distance as is possible are vital to slowing the spread of COVID-19. In the event that a student disrupts the classroom environment through their failure to comply with the reasonable directive of an instructor or the University, the instructor has the authority to ask that the student immediately leave the space for the remainder of the class period. Additionally, the instructor is asked to report the incident to the [Office of Student Accountability](#) for the possibility of additional follow-up. Students who need a temporary alternative learning arrangement related to COVID-19 expectations should contact [Student Disability Services](#) (<https://sds.studentlife.uiowa.edu/fall-2020/covid-19-temporary-learning-arrangements/>; +1 319 335-1462).

Class Recordings: Privacy and Sharing

Some sessions of a course could be recorded or live-streamed. Such a recording or streaming will only be available to students registered for the course. These recordings are the intellectual property of the faculty, and they may not be shared or reproduced without the explicit written consent of the faculty member. Students may not share these sessions with those not in the class; likewise, students may not upload recordings to any other online environment. Doing so is a breach of the Code of Student Conduct and, in some cases, a violation of the Federal Education Rights and Privacy Act (FERPA).

Communication and the Required Use of UI Email

Students are responsible for official correspondences sent to the UI email address (uiowa.edu) and must use this address for all communication within UI ([Operations Manual, III.15.2](#)).

Complaints

Students with a complaint about an academic issue should first visit with the instructor or course supervisor and then with the Chair of the department or program offering the course; students may next bring the issue to the College of Liberal Arts and Sciences; see this page for more information: <https://clas.uiowa.edu/students/handbook/student-rights-responsibilities>.

Nondiscrimination in the Classroom

The University of Iowa is committed to making the classroom a respectful and inclusive space for people of all gender, sexual, racial, religious, and other identities. Toward this goal, students are invited in MyUI to optionally share the names and pronouns they would like their instructors and advisors to use to address them. The University of Iowa prohibits discrimination and harassment against individuals on the basis of race, class, gender, sexual orientation, national origin, and other identity categories set forth in the University's Human Rights policy. For more information, contact the Office of Equal Opportunity and Diversity (<https://diversity.uiowa.edu/eod>; +1 319 335-0705 or diversity.uiowa.edu)

Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community must uphold the UI mission and contribute to a safe environment that enhances learning. Incidents of sexual harassment must be reported immediately. For assistance, please see <https://osmrc.uiowa.edu/>.