













Instructor:

-  Nariankadu D. Shyamalkumar
-  Office Hrs: TTh 8:30 - 10:00am
-  Over Zoom
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Department:

-  Statistics & Actuarial Science
-  SH 241
-  335-0712
-  Chair: Prof. Kung-Sik Chan
-  kung-sik-chan@uiowa.edu



Class Info:

-  MWF 8:30-10:20
-  Over Zoom

Exams:

-  Mid-Term I: Monday, 1st of March
-  Mid-Term II: Monday, 12th of April
-  Final: Finals Week, date TBD

TA Info:

-  Hong Beng (Ben) Lim
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Overview

The goal of this two course sequence is to gain a conceptual understanding and practical facility with the statistical/probabilistic techniques that form the syllabus for the SOA exam, Short Term Actuarial Mathematics (STAM). The learning outcome of this exam states: *The syllabus for Exam STAM provides an introduction to modeling and covers important actuarial methods that are useful in modeling. The candidate will be introduced to useful frequency and severity models, required to understand the steps involved in the modeling process including determining a suitable model, estimating parameters, and providing measures of confidence. Candidates will also be able to work with aggregate models, credibility models, and understand basic methods of pricing and reserving for short-term insurance coverages.*

This course sequence expects significant facility with self-learning new computational tools with some help from an online discussion platform. We will predominantly work within the R Software Environment.

Recommended Texts / Study Material

- Loss Models: From Data to Decisions, (Fourth Edition), 2012, by Klugman, S.A., Panjer, H.H. and Willmot, G.E., Wiley, ISBN: 978-1-118-31532-3
- Introduction to Ratemaking and Loss Reserving for Property and Casualty Insurance (Fourth Edition), 2015, by Brown and Lennox, ACTEX, ISBN: 978-1625424747
- SOA Study Notes: STAM 21-18, 23-18 and 24-18; 22-18 and 25-18 will not be covered in this course.

Grading Scheme

- 10% Attendance and Participation: 2.5% will be for attendance and 7.5% for participation in class and online discussions.
- 20% Homework: Assignments will be given to you by Friday of every week there is an assignment. They have to be returned by the beginning of Friday's class of the following week.
- 20% Groupwork: There will be groupwork that would be needed to be done by self formed groups of two in a timely manner.
- 50% Two Midterm Exams and a Final: 15% each for the two mid-terms, and 20% for the final.

Undergraduate and graduate students will be treated as two separate groups when it comes to assigning final grades.

Learning Objectives

- Loss Models: Chapters 3, 4, 5, 8 and 15; Chapter 6 Sections 6.5, 6.6; Chapter 9, Sections 9.1 - 9.7 (excluding 9.6.1), Sections 9.8.1, 9.8.2; Chapter 13, Sections 13.2, 13.3, 13.4; Chapter 14, Sections 14.1, 14.2, 14.3, 14.4, 14.6; Chapter 16 (excluding 16.4.2 and 16.5.3) & STAM 21-18
- Intro. to Rate Making and Loss Reserving: Chapters 2 through 5; STAM 24-18
- Credibility: STAM 23-18
- Significant amount of time will be spent on learning to do Stochastic Simulation

UI and the College of Liberal Arts and Sciences Information for Undergraduates

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, military service obligations, unavoidable circumstances, or University authorized activities. 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 on ICON in the top banner under "Student Tools." More information is at <https://clas.uiowa.edu/students/handbook/attendance-absences>.

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 related UI policies and procedures that all students have agreed to regarding the COVID-19 pandemic. Particularly, each student must wear a face mask when in a UI building, including a classroom. The density of seats in classrooms has been reduced, and in some instances, this will allow 6 feet or more of distance while other cases, it may be less. Regardless, wearing a face mask 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 the failure to comply with a reasonable directive of an instructor or of the University, the instructor has the authority to ask that the student to leave the space immediately for the remainder of the class period. Additionally, the instructor is asked to report the incident to the UI Office of Student Accountability, with the possibility of additional follow-up with the student. Students who need temporary alternative learning arrangements (TALA) for a future semester related to COVID-19 should visit this website for more information. <https://coronavirus.uiowa.edu/temporary-alternative-learning-arrangements-tala>.

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 their 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>.

Final Examination Policies

The final exam schedule is announced around the fifth week of classes; students are responsible for knowing the date, time, and place of a final exam. Students should not make travel plans until knowing this information. No exams of any kind are allowed the week before finals with very few exceptions made (for labs, ESL and some world language courses, and off-cycle courses): <https://registrar.uiowa.edu/final-examination-scheduling-policies>.

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).

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/>.