

**The University of Iowa**  
**College of Liberal Arts and Sciences**  
**Department of Statistics and Actuarial Science**  
**Course Outline for ACTS:4280 Life Contingencies II Fall Semester 2024**

**MWF 4:30 to 5:20 pm            15 SH**

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Student drop-in Hours: 2:30 to 3:30 pm TWF; or by appointment.

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Prerequisites: C+ or better in ACTS:4180. Calculus (including differential equations), linear algebra, and probability are used extensively in this course.

The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, the “second-grade only” option (SGO), academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies.

The required textbook is *Actuarial Mathematics for Life Contingent Risks*, 3<sup>rd</sup> ed (2020), by D.C.M. Dickson, M.R. Hardy, and H.R. Waters, Cambridge University Press. The goal of the course is to cover its Chapters 8, 9, 10, 11, 13, 14, 17, and Sections 7.2.4, 7.4, 15.2, 15.3, 18.6. We shall also study the “Variable Annuity Guarantees” study note ALTAM-21-23.

Below are some useful references.

- *Actuarial Mathematics*, 2<sup>nd</sup> edition (1997), 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, Soc. of Actuaries.
- *Solutions Manual for Actuarial Mathematics for Life Contingent Risks*, 3<sup>rd</sup> edition, by D. C. M. Dickson, M. R. Hardy, and H. R. Waters, Cambridge University Press.
- *Models for Quantifying Risk*, 6<sup>th</sup> edition (2014), by S.J. Camilli, I. Duncan, and R. L. London, ACTEX Publications, and its *Solutions Manual*.
- *Fundamental of Actuarial Mathematics*, 3<sup>rd</sup> edition (2015), by S. D. Promislow, Wiley.
- *Stochastic Models in Life Insurance* (2012) 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>

There will be a midterm exam on October 21 (6:30 to 8:30 pm) in 109 EPB. The final exam will be held in the week of December 16. All exams are closed book and closed note; no crib sheets are allowed. You are to use an SOA-approved calculator.

Tentatively, your numerical grade will be calculated by the formula,

$$\text{HW } 10\% + \text{Midterm Exams } 40\% + \text{Final Exam } 50\%,$$

and translated to a University of Iowa grade as follows:

Undergraduates 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]

The formula for SOA’s UEC score is: HW 20% + Final Exam 80%. To get ALTAM credit from the SOA, you need to achieve 85% or better. Your midterm exam mark contributes to your University of Iowa grade, but **not** to the SOA UEC score.

The **final** examination is **cumulative** (covering material from throughout the course).

### **Academic Honesty and Misconduct**

All students in CLAS courses are expected to abide by the [college's standards of academic honesty](#). Undergraduate academic misconduct must be reported by instructors to CLAS according to [these procedures](#). Graduate academic misconduct must be reported to the Graduate College according to Section F of the [Graduate College Manual](#).

### **Student Complaints**

Students with a complaint about a grade or a related matter should first discuss the situation with the instructor and/or the course supervisor (if applicable), and finally with the DEO (Chair) of the department, school or program offering the course. Sometimes students will be referred to the department or program's Director of Undergraduate Studies (DUS) or Director of Graduate Studies (DGS). Undergraduate students should contact [CLAS Undergraduate Programs](#) for support when the matter is not resolved at the previous level. Graduate students should contact the [CLAS Dean's Office](#) when additional support is needed.

### **Drop Deadline for this Course**

You may drop an individual course before the drop deadline; after this deadline you will need collegiate approval. You can look up the drop deadline for this course [here](#). When you drop a course, a "W" will appear on your transcript. The mark of "W" is a neutral mark that does not affect your GPA. To discuss how dropping (or staying in) a course might affect your academic goals, please contact your Academic Advisor. Directions for adding or dropping a course and other registration changes can be found on the [Registrar's website](#). Undergraduate students can find policies on dropping CLAS courses [here](#). Graduate students should adhere to the [academic deadlines](#) and policies set by the Graduate College.

### **Date and Time of the Final Exam**

The [final examination date and time](#) will be announced by the Registrar generally by the fifth week of classes, and it will be announced on the course ICON site once it is known. **Do not plan your end of the semester travel plans until the final exam schedule is made public. It is your responsibility to know the date, time, and place of the final exam.** According to the Registrar's final exam policy, students **have a maximum of two weeks after the announced final exam schedule** to request a change if an exam conflict exists or if a student has more than two exams scheduled for the same day (see the [policy](#) here).

### **Attendance and Absences**

[University regulations require that students be allowed to make up examinations](#) *that have been missed due to illness, religious holy days, military service obligations (including service-related medical appointments), or other unavoidable circumstances or University-sponsored activities. Students with UI-authorized activities must discuss their absences with the instructor as soon as possible. Religious obligations must be communicated within the first three weeks of classes.*

### **Communication: UI Email**

Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community. For the privacy and the protection of student records, UI faculty and staff can only correspond with UI email addresses.

### **Mental Health Resources and Student Support**

Students are encouraged to be mindful of their mental health and seek help as a preventive measure or if feeling overwhelmed and/or struggling to meet course expectations. Students are encouraged to talk to their instructor for assistance with course-related concerns. For additional mental health support, please see the guidance and resources at [mentalhealth.uiowa.edu](#), including the 24-7 [UI Support and Crisis Line](#). Additionally, the Office of the Dean of Students can help students navigate personal crisis situations. They can provide one-on-one support, help with identifying options, and access to [basic needs resources \(such as food, rent, childcare, etc.\)](#). Student Care and Assistance: 132 IMU, [dos-assistance@uiowa.edu](mailto:dos-assistance@uiowa.edu), or 319-335-1162 and more info: [dos.uiowa.edu/assistance](http://dos.uiowa.edu/assistance)

### **University Policies**

#### **Accommodations for Students with Disabilities**

The University is committed to providing an educational experience that is accessible to all students. If a student has a diagnosed disability or other disabling condition that may impact the student's ability to complete the course requirements as stated in the syllabus, the student may seek accommodations through [Student Disability Services](#) (SDS). SDS is responsible for making [Letters of Accommodation \(LOA\)](#) available to the student. **The student must provide an LOA to the instructor as early in the semester as possible, but requests not made at least two weeks prior to the scheduled activity for which an accommodation is sought may not be accommodated.** The LOA will specify what reasonable course accommodations the student is eligible for and those the instructor should provide.

#### **Free Speech and Expression**

#### **Absences for Religious Holy Days**

#### **Classroom Expectations**

#### **Non-discrimination**

#### **Sexual Harassment/Misconduct and Supportive Measures**

#### **Sharing of Class Recordings (if appropriate)**