



THE UNIVERSITY OF IOWA
DEPARTMENT OF STATISTICS & ACTUARIAL SCIENCE

ACTS:3080 Mathematics of Finance I

Fall 2022

11:30 a.m.–12:20 p.m., MWF

131 SH

Course Syllabus

Contact Information

Instructor: Dr. Zhiwei (Josh) Tong

- *Email:* zhiwei-tong@uiowa.edu

This is the best way to contact me! Please include “ACTS:3080” in your email subject.

- *Phone:* 1(319)467-0160
- *Office:* 374 SH
- *Office hours:* 3–4 p.m., MWF

Held in person unless otherwise announced. Also available by appointment.

- *Personal homepage:* <https://sites.google.com/view/ztong1997/home>

Grader: Mr. Aidan Chaffin

- *Email:* aidan-chaffin@uiowa.edu

Department Executive Officer: Professor Kung-Sik Chan

- *Office:* 241 SH
- *Email:* kung-sik-chan@uiowa.edu

Course Description and Objectives

This course covers basic concepts of financial mathematics, and prepares students for the analysis of simple financial and insurance transactions. Topics covered in this course mainly include: time value of money; annuities; valuation of loans, bonds, and general cash flows. This course requires a good understanding of calculus and linear algebra

This course aligns with the requirements by SOA on University-Earned Credit (UEC) program. See [this website](#) for more information on the UEC program, and [this website](#) for more information on Exam FM.

A grade of C+ or higher in this course is a prerequisite for virtually all core courses in actuarial science; see the general catalog [here](#).

Course Materials

This course will use **ICON** (<http://icon.uiowa.edu>) for announcements, notes, homework assignments, etc. There are no required textbooks in this course. We shall follow closely the instructor's comprehensive course notes, which will be made available on ICON chapter by chapter. Please **print out and bring** a copy of the relevant portions of the course notes for each class meeting. You will also find that problems from past SOA exams are useful in preparing for exams of this course.

Students are required to bring a CAS/SOA approved **calculator** to every class. Only CAS/SOA approved calculators are allowed to use for quizzes and exams in this course.

Evaluation System

Assessment for the university grade comprises the following items:

Item	Weight	Schedule
Attendance	5%	Attendance and active engagement are required
Assignments	15%	In total 6 assignments spread over the semester
Quizzes	20%	In total 5 quizzes spread over the semester
Midterm	20%	6:30–8:00 p.m., October 17, 71 SH
Final	40%	TBA

- **Attendance: 5%**

Your attendance and engagement may affect your final grade (positively or negatively).

- **Assignments: 15%**

There will be 6 assignments, each of which roughly consists of 15 questions. The lowest assignment score will be dropped towards calculating the final grade. Assignments will

be released on Fridays and will be due the following Friday. To minimize the spread of virus, your solutions must be scanned and submitted on ICON. Late submission will only be credited at the instructor's discretion. Discussion with peer students is encouraged. However, what you hand in must ultimately **be your own work**.

- **Short Quizzes: 20%**

There will be 5 15-minute quizzes spread over the semester, held in class. The lowest quiz score will not be dropped towards calculating the final grade. Makeups are not allowed unless for exceptional reasons. These quizzes are intended to motivate you to study regularly (instead of cramming just before the Midterm and Final Exams!) and will consist of relatively straightforward questions.

- **Midterm Examination: 20%**

There will be a closed-book 90-minute Midterm Examination consisting of around 15 written-answer questions. Partial credits will be awarded for incorrect answers if quality work is shown.

- **Final Examination: 40%**

There will be a closed-book 2-hour Final Examination consisting of around 20 written-answer questions. It will be scheduled during the University Final Exam Week (December 12–16, 2022). The exact schedule will be announced both in class and on ICON once it is fixed by the Registrar.

Grading scheme. Plus/minus grades will be given in this course, and undergraduate and graduate students will be treated as two separate groups when it comes to assigning final grades. An *approximate* guide is as follows:

Undergraduate students		
A- [85,90)	A [90,95)	A+ [95,100]
B- [70,75)	B [75,80)	B+ [80,85)
C- [55,60)	C [60,65)	C+ [65,70)
D- [40,45)	D [45,50)	D+ [50,55)
F [0,40)		

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

UEC credit. A different system will be adopted for calculating the UEC score. In this system the assignments are worth 20% and the final examination is worth 80%. A minimum UEC score of 85% is required to obtain the UEC credit.

Academic Honesty and Misconduct

All students in CLAS courses are expected to abide by the CLAS Code 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 finally with the Director or Chair of the school, department, or program offering the course.

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 Associate Dean for Graduate Education and Outreach and Engagement when additional support is needed.

Drop Deadline for this Course

You may drop an individual course before the 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. 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 and withdrawing here. Graduate students should adhere to the academic deadlines and policies set by the Graduate College.

College of Liberal Arts and Sciences (CLAS) Course Policies

Attendance and Absences

University regulations require that students be allowed to make up examinations which have been missed due to illness or other unavoidable circumstances. Students with mandatory religious obligations or UI authorized activities must discuss their absences with me as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

Exam Policies

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.

Where to Get Help

Instructors: Note any department or university resources helpful for this course, such as Tutor Iowa: <https://tutor.uiowa.edu/>

University Policies

Accommodations for Students with Disabilities

Basic Needs and Support for Students

Classroom Expectations

Exam Make-up Owing to Absence

Free Speech and Expression

Mental Health

Military Service Obligations

Non-discrimination

Religious Holy Days

Sexual Harassment/Misconduct and Supportive Measures

Sharing of Class Recordings