

The University of Iowa
College of Liberal Arts and Sciences
Department of Statistics and Actuarial Science
ACTS:4130:0001 (22S:174:001), Quantitative Methods for Actuaries
Fall 2011
MWF 2:30–3:20 40 SH

Policies relating to this course are governed by the College of Liberal Arts and Sciences.

General Information

- **Instructor:** Jerome Pansera, 219 SH, jerome-pansera@uiowa.edu, 335-0824.
- **Office Hours:** MF 12:30–1:20, W 1:30–2:20, and by appointment.
- **Course Web Site:** Available through <http://icon.uiowa.edu>.
- **DEO:** Luke Tierney, 241 SH, luke-tierney@uiowa.edu, 335-0712.

Texts

- **Required:** McDonald (2006), *Derivatives Markets (2nd ed.)*; available at the University Book Store.
- **Required:** Dickson, Hardy, and Waters (2009), *Actuarial Mathematics for Life Contingent Risks*; available at the University Book Store.
- **Optional:** McDonald, Cassano & Fahlenbrach, *Derivatives Markets - Solutions Manual*; available at the University Book Store.

Supplementation to the textbooks, when needed, will be provided.

Description of Course

The goal of this course is to prepare you for part of the SOA Exam FM / CAS Exam 2, part of the SOA Exam MFE / CAS Exam 3F, and part of the SOA Exam MLC.

A grade of C+ or higher in this course is a prerequisite for ACTS:4180 (22S:181) “Life Contingencies I”, for ACTS:4230 (22S:175) “Actuarial Models”, and for ACTS:4380 (22S:183) “Mathematics of Finance II”.

This course covers basic concepts and methodologies of financial derivatives and survival models. The tentative schedule is the following:

- From Aug. 22 to Sep. 23 (weeks 1–5): **Introduction to Financial Derivatives.** We will cover Sections 1.1–1.4, 2.1–2.6, Appendix 2A, 3.1–3.5, 4.1–4.4, 5.1–5.4, Appendix 5B, 7.1–7.2, 8.1–8.2 of *Derivatives Markets*.
- Monday, Sep. 26: Midterm 1.
- From Sep. 28 to Oct. 21 (weeks 6–9): **Binomial Option Pricing.** We will cover Chapters 9, 10, and 11 (excluding Section 11.5) of *Derivatives Markets*.
- Monday, Oct. 24: Midterm 2.
- From Oct. 26 to Dec. 9 (weeks 10–15): **Survival Models and Life Tables.** We will cover Chapters 2 and 3 of *Actuarial Mathematics for Life Contingent Risks*.
- Tuesday, Dec. 13: Final, at 7:30 am in classroom (40 SH), but please double-check the Final Exam Schedules (<http://www.registrar.uiowa.edu/exams/single.aspx>) a few days before the final exam for a confirmation.

Grading

- **Exams:** 70% of your total grade will be based on exams. Each in-class midterm exam will be worth 20% and the final will be worth 30%. It is very important to take the examinations at the scheduled times. Early make-up exams will be scheduled only for those who have **compelling** and **convincing** reasons; **you must notify me at least one full week in advance** (except for medical emergencies).
- **Quizzes:** 20% of your total grade will be based on quizzes. Those quizzes will be given at random times. Please note that we may have two quizzes in the same week or a week without any quiz. **Absolutely no make-up will be given for missed quizzes under any circumstances**, but the lowest two quizzes will be dropped from your total grade.
- **Homework:** The remaining 10% of your total grade will be based on homework problems. Homework will be due one week after being assigned. Since the grader will not have enough time to grade each problem, only a subset of the assigned problems will be graded. **Late homework will not be accepted under any circumstances**, but the lowest two homework scores will be dropped from your total grade. Homework must be neatly written (points will be deducted from failing to do so). Excessively sloppy homework will receive a score of 0. You are always welcome (and even encouraged) to discuss homework problems with me (during my office hours or by appointment) or with your colleagues. However, what you hand in must ultimately be your own work.

Midterms, final and quizzes are closed book exams with no notes of any kind. Necessary formulas are to be memorized. Plus/minus grading will be used for your total grade. Please note that the grade A+ is very rarely given in this course and only in extraordinary situations. Also, graduate students are expected to have a better performance than undergraduate students.

Calculators

You will need either the Texas Instruments BA II Plus or the BA II Plus Professional calculator. These calculators are the only ones allowed on the SOA / CAS exams that do interest rate calculations.

Extra Help

The Statistics Tutorial Lab, located in 202 CC, gives free tutorial assistance to students in 22S:2, 8, 25, and 39. In addition, several graduate students have offered to independently tutor students in various 22S: courses at mutually-arranged times and fees. Please check <http://www.stat.uiowa.edu/courses/tutoring.html> for tutoring details.

The College of Liberal Arts and Sciences Policies and Procedures

Administrative Home

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 SH or see the CLAS Academic Handbook:

<http://www.clas.uiowa.edu/students/handbook/>

Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences. (Operations Manual, III.15.2. Scroll down to k.11: <http://www.uiowa.edu/~our/opmanual/iii/15.htm#152>)

Accommodations for Disabilities

A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See <http://www.uiowa.edu/~sds> for more information.

Academic Honesty

The College of Liberal Arts and Sciences expects all students to do their own work, as stated in the [CLAS Code of Academic Honesty](#). Instructors fail any assignment that shows evidence of plagiarism or other forms of cheating, also reporting the student's name to the College. A student reported to the College for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled.

CLAS Final Examination Policies

Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam since the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

Making a Suggestion or a Complaint

Students with a suggestion or complaint should first visit the instructor, then the course supervisor and the departmental DEO. Complaints must be made within six months of the incident. See <http://www.clas.uiowa.edu/students/handbook/x/#5>

Understanding 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 have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment:

<http://www.uiowa.edu/eod/policies/sexual-harassment-guide/index.html>
for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site: <http://www.uiowa.edu/~pubsfty/intlinks.htm>

Student Classroom Behavior

The ability to learn is lessened when students engage in inappropriate classroom behavior, distracting others; such behaviors are a violation of the Code of Student Life. When disruptive activity occurs, a University instructor has the authority to determine classroom seating patterns and to request that a student exit immediately for the remainder of the period. One-day suspensions are reported to appropriate departmental, collegiate, and Student Services personnel (Office of the Vice President for Student Services and Dean of Students).

*The CLAS policy statements have been summarized from the web pages of the College of Liberal Arts and Sciences.