The University of Iowa
The College of Liberal Arts and Sciences
Department of Statistics and Actuarial Science

ACTS:3080 Mathematics of Finance I - Spring 2018

NOTE: This syllabus is subject to change; the final version will be made available for enrolled students at the start of the semester.

1:30 am-2:20 pm Monday, Wednesday, & Friday, location TBA

▷ General Information

– Instructor: Michelle Larson, 221 SH, 335-0814, michelle-larson@uiowa.edu
  Office Hours: TBA

– DEO: Joseph Lang, 241 SH, 335-0712

– Course Description: This course is intended for students who are studying for the SOA Exam FM (Financial Mathematics) June 2018 or later. The course will cover SOA learning objectives A-F. Objectives G and H (0%-20% of FM Exam) are provided by SOA Study Notes and will be covered as time permits. The description of SOA Exam FM is at https://www.soa.org/education/exam-req/edu-exam-fm-detail.aspx.

Prerequisites: Grade of B- or higher in STAT:3100 or graduate standing

– Calculator (REQUIRED): Students will need a CAS/SOA approved calculator. The TI BA II Plus calculator is highly recommendend since it has the ability to solve for interest rates. Students are strongly encouraged to bring their calculator to every class and to use their calculator for all work done for this class. Only CAS/SOA approved calculators will be allowed during exams.


– Study Manuals (highly recommended to purchase one): ACTEX FM/2 Study Manual by Hassett et al.; ASM FM/2 Study Manual by Gorvett and Cherry

– ICON/Web: This course will use ICON powered by Canvas (http://icon.uiowa.edu) for announcements, notes, homework assignments, extra practice problems, etc.

▷ Course Topics

– We will cover the following topics in roughly this order:
  * Interest rates and factors
  * Level annuities
  * Varying annuities
  * Non-annual interest rates and annuities
  * Project appraisal and loans
  * Financial instruments (Stocks and Bonds)
  * Duration, convexity and immunization
  * The term structure of interest rates

– Students are encouraged to use technology to perform calculations, however, explicit work (formulas, computations, etc.) is required to be shown.

▷ Grading

– Quizzes: (10% total) Quizzes will be given roughly every two weeks and announced in the previous class; the lowest quiz will be dropped.
- **Exams:** There will be 2 midterm exams (25% each) and a final exam (30%). Midterms will be given in the evenings. Exam dates:
  * Midterm Exam 1: Thursday, February 15, 2018 6:30 - 8:30 pm, location TBA
  * Midterm Exam 2: Thursday, April 5, 2018 6:30 - 8:30 pm, location TBA
  * Final Exam: TBA

Students are expected to be present for the exams at the scheduled time. If you have a legitimate, unavoidable conflict, it is your responsibility to make the appropriate arrangements at least 24 hours in advance. If you miss an exam due to a sudden absence, email the instructor immediately. Note that during exams, students will be asked to place belongings, including electronic devices other than CAS/SOA approved calculators, at the front of the room.

- **Homework:** (10% total) Homework will be due each Friday at the beginning of lecture. Because the grader may not have enough time to grade each problem, a subset of the assigned problems will be graded. Homework turned in late (including at the end of class) or illegible will be given a score of zero. The lowest homework score will be dropped. Students are encouraged to work together on homework but work submitted must be your own. Homework must be stapled, defuzzed, be neatly written; solutions must appear in the order assigned. Be sure your name and the assignment number appear at the top of the first page.

- Your attendance, participation, preparedness, work ethic, etc. may affect your grade.
- Students may find that problems from the textbook and the past SOA exams are useful in preparing for quizzes and exams in this course.
- This course uses the +/- grading system (i.e. grades such as A-, B+, and B will be assigned).
- Grade cutoffs will be no higher than the usual 90 (A-), 80 (B-), 70 (C-), 60 (D-) breakdown.
- Bonus points may be given at any time and may be applied to any part of your grade.

▷ **Extra Help**

- Students are encouraged to seek help from their professor, peers, and/or advisor.

▷ **Notes**

- Do not miss class. You need to attend every day to succeed in this class.
- Please refrain from eating, using your phone, wearing earbuds, and using other electronic devices during class.
- During class time, all communication, including private conversations, is to be conducted in English only.
- Success in this class requires a large time commitment. A minimum of 15 to 20 hours per week is expected. Review/study numerous times throughout the week.
- If you are absent from discussion or lecture (without giving prior notice), we cannot provide handouts/notes.

▷ **Academic Misconduct**

- During exams, you may not talk, whisper, pass notes, view other students’ work, allow a fellow student to view your own work (cover your paper!), use class notes, etc. All such actions are considered academic misconduct and will be reported to the UI.
- You may, however, work with a fellow student on your homework provided you both do all of the problems in their entirety (at which point you can compare methods, approaches, and answers). Simply copying a another student’s homework will be considered academic misconduct.
The College of Liberal Arts and Sciences Policy 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 Schaeffer Hall, or see the CLAS Academic Policies Handbook at [http://clas.uiowa.edu/students/handbook](http://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, k.11, [http://opsmanual.uiowa.edu/human-resources/professional-ethics-and-academic-responsibility#15.2](http://opsmanual.uiowa.edu/human-resources/professional-ethics-and-academic-responsibility#15.2)).

- **Accommodations for Disabilities:** The University of Iowa is committed to providing an educational experience that is accessible to all students. A student may request academic accommodations for a disability (which includes but is not limited to mental health, attention, learning, vision, and physical or health-related conditions). A student seeking academic accommodations should first register with Student Disability Services and then meet with the course instructor privately in the instructor’s office to make particular arrangements. Reasonable accommodations are established through an interactive process between the student, instructor, and SDS. See [http://sds.studentlife.uiowa.edu/](http://sds.studentlife.uiowa.edu/) for information.

- **Nondiscrimination in the Classroom:** The University of Iowa is committed to making the classroom a respectful and inclusive space for all people irrespective of their gender, sexual, racial, religious or other identities. Toward this goal, students are invited to optionally share their preferred names and pronouns with their instructors and classmates. The University of Iowa prohibits discrimination and harassment against individuals on the basis of race, 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, diversity@uiowa.edu or visit [http://diversity.uiowa.edu](http://diversity.uiowa.edu).

- **Academic Honesty:** All CLAS students or students taking classes offered by CLAS have, in essence, agreed to the College’s Code of Academic Honesty ([http://clas.uiowa.edu/students/handbook/academic-fraud-honor-code](http://clas.uiowa.edu/students/handbook/academic-fraud-honor-code)): “I pledge to do my own academic work and to excel to the best of my abilities, upholding the IOWA Challenge ([http://fye.uiowa.edu/youre-here/iowa-challenge](http://fye.uiowa.edu/youre-here/iowa-challenge)). I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty.” Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled (CLAS Academic Policies Handbook, [http://clas.uiowa.edu/students/handbook](http://clas.uiowa.edu/students/handbook)).

- **CLAS Final Examination Policies:** The date and time of every final examination is announced by the Registrar generally by the fifth week of classes. **No exams of any kind are allowed during the last week of classes.** All students should plan on being at the UI through the final examination period. It is the student’s responsibility to know the date, time, and place of the final exam.

- **Making a Suggestion or a Complaint:** Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and then with the departmental DEO. Complaints must be made within six months of the incident (CLAS Academic Policies Handbook, [http://clas.uiowa.edu/students/handbook](http://clas.uiowa.edu/students/handbook)).

- **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 Office of the Sexual Misconduct Response Coordinator ([http://osmrc.uiowa.edu/](http://osmrc.uiowa.edu/)) 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 Department of Public Safety website ([http://police.uiowa.edu/emergency-communications](http://police.uiowa.edu/emergency-communications)).