MATH 667-010   Introduction to Mathematical Finance
MWF 1:25–2:15, EWG 203 (lecture), PRN 117A (lab)   Spring 2018
        Web Page: `http://www.math.udel.edu/~edwards/download/m667/s18home.html`
                    (also referenced from QR code at end of document)

Instructor: Prof. D. A. Edwards   Office Hours: T 1–2, R 9:30–10:30, or by appointment
EWG 511   x1871, `dedwards@udel.edu`

Introduction

Welcome to Introduction to Mathematical Finance! In this class we will use an integrated approach to learn both the theory and the practice of mathematical finance. The text for this course is *The Mathematics of Financial Derivatives: A Student Introduction*, by Wilmott, Howison, and Dewynne. In addition, I will also be lecturing from various other sources, so class attendance and participation is necessary for successful mastery of the material.

If you have any questions, contact me during my office hours or make an appointment. **Extra copies of handouts are available at the Web page listed above or referenced at the QR code at the end of the document.**

Please silence cellular phones before entering the classroom. There will be no makeup classes for snow days unless mandated by the University.

Electronic Communication

The Web page for this course is listed on the top of the first page. There you will find copies of handouts available for downloading. Important announcements (corrections to typographical errors, etc.) will be handled by e-mail. Also at the URL

`http://www.math.udel.edu/~edwards/download/suggest.php`

you will find an anonymous suggestion box.

Exams

There will be two exams in the course: a take-home midterm (date listed on schedule) and a final. Attached to each examination will be a course evaluation form so that I may receive your suggestions for how the course could be improved. These forms will be seen only by me, so if you have comments that you wish the department to hear, please contact them directly.

When the exams are returned, they will have a numerical score and a letter grade on them. The numerical score is your score for the exam; *the letter grade is your grade for the course* to that point, including all homework and lab scores.

Assessment

Your grade for the course will be determined in two stages. First your *raw score* will be calculated as follows:

The exams will count (equally) for half of your grade, the homework counts for 1/3, and the labs count for 1/6.

Then each of the raw scores will be scaled to determine final grades.

Labs

In order for you to learn the practical side of mathematical finance, we will have many Friday classes in the Lerner Trading Center. While there, you will learn how to use a Bloomberg terminal to trade and price options. During each lab session, I will introduce certain commands and you will be given a lab assignment to complete. Labs will be due at the next lab session. **ABSOLUTELY NO LATE ASSIGNMENTS WILL BE ACCEPTED!** However, to calculate your semester-long assignment average, I will drop your lowest lab score.

Please consult

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http://my.lerner.udel.edu/undergraduate-students/academic-resources/lerner-
trading-center
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to determine when the lab is open for you to work on your assignments.

Part of your laboratory work will be to complete the Bloomberg certification program. More details will follow.

Homework

The most effective way to succeed in this course is to do all the assignments. I select the problems carefully to illustrate the most important topics in the course. Even if you are registered as a listener, I recommend doing the homework, and I will review it.

In most cases, homework will be distributed every Wednesday during lecture, and it will be due at the beginning of class the following Wednesday. (The first homework assignment is attached to this sheet.) Ideally, the material on the homework will be covered two lecture days before it is due. **ABSOLUTELY NO LATE ASSIGNMENTS WILL BE ACCEPTED!** If you must miss a due date because of University business, it is your responsibility to make sure the homework gets to me *before* the due date. Since mathematics is a subject where the material for one section builds on the section before, it is critical that you keep up to date on the homework: hence the stringent policy. However, to calculate your semester-long assignment average, I will drop your two lowest homework scores. Therefore, low scores for assignments where you were pressed for time can be erased as long as you don't have too many of them.

Though you may not copy directly from another's paper or use someone else's ideas (including online aids) as your own[1], I encourage you to discuss assignments with your classmates. Any scientific endeavor is rarely done in a vacuum; therefore it is to your advantage to learn the benefits of collaborating. Model homework solutions will be posted on the Web after the assignment is due. Hopefully these will assist you in learning the material. Labs will be discussed in class as needed.

Assignments should be folded like a book with the following information on the "front cover:"

<div align="center">

Name
Math 667-010—Edwards
Homework/Lab Number
Date

</div>

You will turn in your assignments this way so that your grade may be written on the inside, thus ensuring your privacy. I will make every effort to ensure that your graded assignments are returned in a timely manner. The number of points assigned to each problem will be listed.

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[1] For more details regarding academic dishonesty, see the Student Handbook (`http://www.udel.e-du/stuguide/`).

Tentative Schedule

Note: This is only a tentative schedule; there may be deviations from it.

week of February 5: Sections 1.1, 1.6, 1.7, 3.1, 3.2, 6.3
      February 5: Homework 1 distributed
      February 9: Lab 1
week of February 12: Sections 1.2–1.5, 2.1, 2.2, 6.3
      February 16: Lab 2
week of February 19: Sections 2.1, 2.2
      February 21: Homework 1 due; homework 2 distributed
      February 23: Lab 3
week of February 26: Sections 2.1–2.3, 3.5
      February 28: Homework 2 due; homework 3 distributed
week of March 5: Sections 3.3, 3.5–3.7, 3.9, 3.10, 5.4–5.6, chapter 4
      March 7: Homework 3 due; homework 4 distributed
week of March 12: Sections 3.3, 3.4, 3.9
      March 14: Homework 4 due; homework 5 distributed
      March 16: Lab 4
week of March 19: Sections 3.3. 13.1, 13.2, 14.1, 14.2, 14.5, 15.1, 15.2, chapter 11
      March 21: Homework 5 due; homework 6 distributed
week of March 26: Spring Recess
week of April 2: Sections 6.2, 11.6, 15.1, 15.2
      April 3: Midterm out
      April 4: Midterm due
      April 6: Lab 5
week of April 9: Sections 6.2, 10.1, 10.2, chapter 7
      April 11: Homework 6 due; homework 7 distributed
week of April 16: Sections 10.1–10.5
      April 18: Homework 7 due; homework 8 distributed
week of April 23: Sections 10.3–10.5, 17.1–17.3
      April 25: Homework 8 due; homework 9 distributed
      April 27: Lab 6
week of April 30: Sections 17.1–17.6
      May 4: Lab 7
week of May 7: Section 17.6, 17.8, 17.9.1, 17.9.2, credit default swaps
      May 9: Homework 9 due; homework 10 distributed
May 14: Formal review session
      May 16: Homework 10 due
      Final Exam: TBA

Course Web Page: