Instructor: Prof. D. A. Edwards   Office Hours: T 9:30–10:30, R 1:30–2:30, 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 take-home exams in the course: a 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 for half of your grade (final counts double), 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. 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.

With the knowledge you gain during class meetings, you will be well on your way to completing the Bloomberg certification program. Completing the full certification program is required for graduate students and those seeking honors credit. 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 Monday during lecture, and it will be due at the beginning of class the following Monday. (The first homework assignment is attached to this sheet.) The homework will ideally cover material up through the Wednesday after it is distributed. **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 and your lowest lab score. 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 6: Sections 1.1, 1.6, 1.7, 3.1, 3.2, 6.3
    February 6: Homework 1 distributed
    February 10: Lab 1
week of February 13: Sections 1.2–1.5, 2.1, 2.2, 6.3
week of February 20: Sections 2.1–2.3
    February 20: Homework 1 due; homework 2 distributed
    February 24: Lab 2
week of February 27: Sections 2.3, 3.1–3.3, 3.5–3.7, 5.4, 5.6, chapter 4
    February 27: Homework 2 due; homework 3 distributed
week of March 6: Sections 3.3, 3.6, 3.9, 3.10, 5.4–5.6, chapter 4
week of March 13: Sections 3.3, 3.4, 3.9
    March 13: Homework 3 due; homework 4 distributed
    March 17: Lab 3
week of March 20: Sections 3.3. 13.1, 13.2, 14.1, 14.2, 13.5, 15.1, 15.2, chapter 11
    March 20: Homework 4 due; homework 5 distributed
week of March 27: Spring Recess
week of April 3: Sections 6.2, 11.6, 15.1, 15.2
    April 3: Midterm out
    April 7: Lab 4
week of April 10: Sections 6.2, 10.1, 10.2, chapter 7
    April 10: Homework 5 due; homework 6 distributed
week of April 17: Sections 10.1–10.5
    April 17: Homework 6 due; homework 7 distributed
    April 21: Lab 5
week of April 24: Sections 10.3, 10.4, 17.1–17.5
    April 24: Homework 7 due; homework 8 distributed
week of May 1: Sections 17.4–17.6, 17.8–17.9.2
    May 9: Lab 6
week of May 8: Section 17.9.1, 17.9.2, credit default swaps, mortgage-backed securities
    May 8: Homework 8 due; homework 9 distributed
May 15: Formal review session
    May 15: Homework 9 due

Course Web Page: