

MATH 620-010
TR 12:30–1:45, LEH 125

Introduction to Mathematical Finance
Spring 2021

Office Hours: M 1:30–2:30 W 9:30–10:30 (PRN 326) or by appointment

Web Page: <http://www.math.udel.edu/~edwards/download/m620/s21home.html>
(also referenced from QR code at end of document)

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Introduction (5/12 Version)

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.**

Technology Issues

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.html>

you will find an anonymous suggestion box.

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.

Exams

There will be two exams in the course: a take-home midterm (date listed on schedule) and an in-class 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.*

Homework

In most cases, homework will be distributed on Tuesdays, and it will be due at the beginning of class the following Tuesday. (The first homework assignment is attached to this sheet.) The homework will ideally cover material up through the day 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. However, I will drop your two lowest homework scores when computing your final average.

Though you may not copy directly from another's paper or use someone else's ideas (including online aids) as your own¹, 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 stapled, then folded like a book with the following information on the "front cover:"

Name
Math 620-010—Edwards
Homework Number
Date

¹ For more details regarding academic dishonesty, see the Student Handbook (<http://www.udel.edu/stuguide/>).

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.

Labs

In order for you to learn the practical side of mathematical finance, we will be using Bloomberg terminals to learn how to trade and price options. **ABSOLUTELY NO LATE ASSIGNMENTS WILL BE ACCEPTED!** However, to calculate your semester-long assignment average, I will drop your lowest two lab scores.

Tentative Schedule

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

week of February 16: Chapter 1, sections. 3.1, 3.2, 6.3

February 16: Homework and lab 1 distributed

week of February 23: Sections 1.2–1.5, 2.1, 2.2

February 23: Lab 1 due; lab 2 distributed

week of March 2: Sections 2.1–2.3

March 2: Homework 1 due; homework 2 distributed

March 4: Lab 2 due; lab 3 distributed

week of March 9: Chapter 4, sections 2.3, 3.3, 3.5–3.7, 3.10, 5.4–5.6

March 9: Homework 2 due; homework 3 distributed

week of March 16: Sections 3.3, 3.4, 3.9, 3.10, 5.4, 5.5

March 16: Homework and lab 3 due; homework and lab 4 distributed

week of March 23: Sections 3.3, 6.2

March 16: Homework and lab 4 due; homework and lab 5 distributed

March 30: No school

April 1: Sections 6.2, 11.1–11.4

April 1: Lab 5 due; lab 6 distributed

week of April 6: Chapter 11, sections 7.1–7.6, 13.1, 13.2, 14.1, 14.2, 14.5, 15.1, 15.2

April 6: Homework 5 due; homework 6 distributed

April 8: Lab 6 due

week of April 13: Chapter 7, sections 10.1–10.4

April 13: Midterm and lab 7 distributed

April 14: Midterm due

week of April 20: Sections 10.3–10.5, 17.1–17.3, chapter 7

April 20: Homework 6 and lab 7 due; homework 7 and lab 8 distributed

week of April 27: Sections 17.1–17.6

April 27: Homework 7 and lab 8 due; homework 8 and lab 9 distributed

week of May 4: Sections 17.6, 17.8–17.9.2, risk/return

May 4: Homework 8 due; homework 9 distributed

May 6: Lab 9 due; lab 10 distributed

week of May 11: portfolio theory, value at risk

May 11: Homework 9 due; homework 10 distributed

May 13: Lab 10 due; lab 11 distributed

May 18: value at risk, review

May 18: Homework 10 due; supplemental study material distributed

May 20: Lab 11 due

Course Web Page:

