

# Financial Economics ECO453 & ECO553

Term: **Fall 2024**

Department: **School of Economics**

Credit: **3 Hours**

Meeting Time & Location: **Tues & Thurs 2:00pm-3:15pm in Lengyel Hall 127**

Learning Modality: **In-Person & Traditional Lecture**

Professor: **Dr. Thomas F. P. Wiesen (thomas.wiesen@maine.edu)**

Office: **Winslow Hall 207C**

Office Hours: **Wednesdays 2:00pm-4:00pm or via appointment**



## Class Details

### Textbook and Materials

Primary Optional Textbook:

*Intermediate Financial Theory*, 3<sup>rd</sup> edition by Danthine and Donaldson<sup>1</sup> ISBN: 9780123865496

Secondary Optional Textbook:

*Principles of Financial Economics*, 2<sup>nd</sup> edition by LeRoy and Werner<sup>2</sup> ISBN:110767302X

I will not directly follow any particular textbook, as my lectures will draw from a collection of materials and other texts. That said, the textbook that most closely aligns with the general organization of this class will be Danthine and Donaldson's textbook. LeRoy and Werner's textbook is slightly more advanced and has additional concepts and details, making it a good supplement especially for graduate students. These two textbooks are completely optional, but you might want to have one as a reference. If you elect to buy/rent one textbook, I recommend Danthine and Donaldson's book.

I primarily convey lecture materials by writing on the white board (or using the document camera), so please bring paper (or some type of notebook) and a writing instrument to every class. Students will need a calculator for the tests. Sharing calculators or using your cell phone will not be allowed on tests.

Depending on how far we get in the course content, students *may* also need access to the coding program [R](#) for computational analysis. This software is free and open source.

### Course Details according to MaineStreet

Examines the economics of financial markets, asset pricing, risks, and decision making in the face of uncertainty. Topics include the time value of money, the efficient market hypothesis, optimal portfolio allocation, and the capital asset pricing model. This class is typically offered once every other year. Prerequisites: a grade of C- or better in ECO220 and in either MAT116 or MAT126 or permission

### Course Description and Motivation

The financial industry constitutes a critically important segment of the global economy. While other courses focus on financial market structures and financial institutions, this graduate/advanced undergraduate, calculus-based, microeconomics-founded course will cover the economic fundamentals and theory behind finance. This will include the ability to construct, solve, and analyze models utilized by financial economists. As prerequisites, students should have previous exposure to microeconomics and differential calculus.

<sup>1</sup> <https://www.amazon.com/Intermediate-Financial-Academic-Advanced-Finance/dp/0123865492>

<sup>2</sup> <https://www.amazon.com/Principles-Financial-Economics-Stephen-Leroy/dp/110767302X>

The primary emphasis of this course is financial economic *theory*. In particular, we will focus on asset pricing theory. Namely, how to price future streams of risky cash flows?

Why emphasize theory? A well-rounded student of economics should have a solid understanding of both theory and practice. A well-rounded student should be able to apply economic concepts and tools to practical real-world questions and applications. At the same time, a well-rounded student should also have a rigorous mathematical understanding of the theories, models, and statistical tools that underpin most economic ideas. Many students in this course are Financial Economics majors who are required to take business finance courses in the Maine Business School (MBS). These MBS business finance courses emphasize practical business-ready skills and applications but contain little theory. Thus, this course is meant to fill the gap and provide students with a mathematically rigorous understanding of financial economic theory.

### **General Course Outline:**

Calculus-based examination of financial economic theory using a general framework of economic decision making in the face of uncertainty. Topics include intertemporal optimization, risk, risk aversion, asset demand, modern portfolio theory, the efficient market hypothesis, and the capital asset pricing model. Students will learn to construct, solve, and analyze mathematical models to answer financial economic questions.

- 1.) Mathematical Introduction
  - Unconstrained optimization review
  - Constrained optimization
  - Comparative statics
- 2.) Economic Foundations
  - Graphical review of consumer preferences
  - Consumer optimization
  - Intertemporal consumer optimization
  - Intertemporal consumer optimization with risk and state contingent claims
- 3.) Overview of Asset Pricing
  - the time value of money and present value
  - pricing assets with guaranteed future cash flows
  - pricing assets with uncertain future cash flows
- 4.) Risk
  - Criteria for decisions over risky choices
  - Formalizing preferences with lotteries
  - von Neumann-Morgenstern expected utility theorem
- 5.) Risk Aversion
  - Concavity/convexity and risk aversion
  - Arrow-Pratt coefficients of absolute and relative risk aversion
  - Interpretation/use of the coefficients of risk aversion
- 6.) Introduction to Asset Demand
  - Insurance
  - The certainty equivalent
  - Portfolio allocation (one risky asset and one safe asset)
- 7.) Modern Portfolio Theory (multiple risky assets)
  - Mean-variance utility
  - Gains from diversification
  - Minimum-variance frontier and efficient frontier
  - Expected return targeted portfolio using matrix linear algebra and R
- 8.) The Capital Asset Pricing Model

## Learning Outcomes

By the end of the class, students will be able to:

- create an optimal consumption bundle across time and with uncertainty using the LaGrange method of constrained optimization
- calculate the present value of an asset and understand the time value of money
- utilize an overview of techniques for pricing securities with certain or uncertain future cash flows
- explain the Efficient Market Hypothesis, why asset returns are so hard to predict, and why is it so hard to consistently “beat the market”
- create an optimal portfolio consisting of multiple assets: one risky asset and one safe asset; two correlated risky assets with different levels of risk
- articulate the nuances of economic decision making in the face of uncertainty
- measure risk and risk aversion
- explain the relationship between risks and expected returns
- utilize the capital asset pricing model

## Grades

Grades for students enrolled in the undergraduate-level course (ECO453) will be determined by homework, two tests, and a cumulative final exam. Grades for students enrolled in the graduate-level course (ECO553) will be determined by homework, two tests, a cumulative final exam, and a scholarly journal article presentation. The weights are as follows:

### ECO453:

Homework	32%
Test 1	18%
Test 2	18%
Cumulative Final Exam	32%

### ECO553:

Homework	29%
Test 1	15%
Test 2	15%
Cumulative Final Exam	29%
Journal article presentation	12%

The table below gives the grade distributions by overall percentage. These are minimum scores and if need be, I will introduce a “curve.” The curve will consist of lowering the minimum score required for a particular letter grade. For instance, a typical curve may consist of making the minimum percentage for an “A” 92.0% instead of 93.5%. You should in no way depend on the curve since the curve is NOT guaranteed, and if I do implement it, it may be very small. I will not curve individual assignments. All questions regarding grades will be directed to this section in the syllabus. There will be no extra credit in this class.

Overall Percentage	Letter Grade	Transcript GPA points
100 - 93.5%	A	4.00
93.4 - 90.0%	A-	3.67
89.9 - 86.5%	B+	3.33
86.4 - 83.0%	B	3.00
82.9 - 79.5%	B-	2.67
79.4 - 76.0%	C+	2.33
75.9 - 72.5%	C	2.00
72.4 - 69.0%	C-	1.67
68.9 - 65.5%	D+	1.33
65.4 - 62.0%	D	1.00
61.9 - 58.5%	D-	0.67
58.4 - 00.0%	F	0.00

### **Homework**

Out-of-class homework will constitute 32% of grades for students enrolled in ECO453 and 29% of grades for students enrolled in ECO553. Anticipate 5-8 of these homework assignments throughout the semester. Due dates for the homework assignments will be announced in class. Students are strongly encouraged to work together. Significant peer-to-peer learning can occur by solving the problems together outside of class. However, students should think for themselves; do not simply copy what your peers are doing. Each student should submit their own homework individually. Late homework will not be accepted for any student. For students enrolled in ECO453, your lowest homework assignment grade will be dropped. For students enrolled in ECO553, all homework assignments should be completed (none will be dropped).

### **Tests and Final Exam**

There will be two in-person tests and a cumulative final exam, the dates for which are in the course calendar below. Students must attend class during these test days. If a genuine medical or personal emergency occurs, please let me know as soon as possible (no later than five days afterwards), and we will arrange for you to make up the test.

The tests will be proctored in class and the final exam will be proctored during the designated final exam period (see syllabus course calendar below). I will NOT provide an online option for the tests/final exam. Both tests and the final exam are required for everyone (i.e., no tests will be dropped). The tests and final exam will be timed, closed-book, and closed-note.

### **Journal Article Presentation**

Twelve percent of grades for students in ECO553 will be based on a journal article presentation. Students will pick one scholarly journal article to read and present to the class. Students should either pick a paper from the list below (most of which are highly cited “classic” papers) or find a paper on a financial economic topic that they are interested in. If a student wishes to find their own paper to present from the literature, they must get the paper approved by the professor beforehand. As a suggested starting point, you may want to look through some recent articles published in the [Journal of Finance](#), the [Journal of Financial Economics](#), the [Review of Financial Studies](#), and/or the [Journal of Banking & Finance](#). Independently searching for articles that interest you is encouraged.

These presentations should last approximately 15-16 minutes and should be accompanied by presentation slides (emailed to the professor beforehand). Students will be graded on the accuracy and clarity of the article content as well as the delivery of the presentation. A good way to tell if you understand something is if you are able to explain it to someone else in your own words. These presentations will occur during the last few days of class (see calendar). Although only students enrolled in ECO553 are required to do the journal article presentations, all students (including those enrolled in ECO453) are expected to attend class those days.

Two students cannot present the same journal article. Thus, email the professor your ranked top 2 preferred journal articles. That way, in the unlikely event of 2 students having the same top preference, there is a second preference already lined up. Email the professor your preferences by the date on the calendar below.

- [Arrow \(1964\) The Role of Securities in the Optimal Allocation of Risk Bearing](#)
- [Barro \(2006\) Rare Disasters and Asset Markets in the Twentieth Century](#)
- [Black and Scholes \(1973\) The Pricing of Options and Corporate Liabilities](#)
- [Campbell and Cochrane \(1999\) By force of habit: A consumption-based explanation of aggregate stock market behavior](#)
- [Carhart \(1997\) On Persistence in Mutual Fund Performance](#)
- [Chen, Roll, Ross \(1986\) Economic Forces and the Stock Market](#)
- [Chordia, Roll, and Subrahmanyam \(2005\) Evidence on the speed of convergence to market efficiency.](#)
- [Daniel, Hirshleifer, and Subrahmanyam \(1998\) Investor Psychology and Security Market Under- and Overreactions](#)

- [Diebold & Yilmaz \(2014\) On the network topology of variance decompositions: Measuring the connectedness of financial firms](#)
- [Engle, Ito, & Lin \(1990\) Meteor showers or heat waves? Heteroskedastic intra-daily volatility in the foreign exchange market](#)
- [Epstein & Zin \(1989\) Substitution, risk aversion, & the temporal behavior of consumption & asset returns: A theoretical framework](#)
- [Fama \(1970\) Efficient Capital Markets: A review of theory and empirical work](#)
- [Fama \(1998\) Market efficiency, long-term returns, and behavioral finance](#)
- [Fama, Fisher, Jensen, and Roll \(1969\) The adjustment of Stock Prices to New Information](#)
- [Fama and French \(1992\) The cross-section of expected stock returns](#)
- [Fama and French \(1993\) Common risk factors in the returns of stocks and bonds](#)
- [Fama and MacBeth \(1973\) Risk, Return, and Equilibrium: Empirical Tests](#)
- [Graham and Harvey \(2001\) The theory and practice of corporate finance: evidence from the field](#)
- [Grossman \(1976\) On the efficiency of competitive stock markets where trades have diverse information](#)
- [Harrison and Kreps \(1979\) Martingales and Arbitrage in Multiperiod Securities Markets](#)
- [Kahneman and Tversky \(1979\) Prospect Theory: An analysis of Decision under risk](#)
- [Kimball \(1990\) Precautionary Saving in the Small and in the Large](#)
- [King and Levine \(1993\) Finance and growth: Schumpeter might be right](#)
- [Kreps and Porteus \(1978\) Temporal Resolution of Uncertainty and Dynamic Choice Theory](#)
- [La Porta, Lopez-De-Silanes, and Shleifer \(1999\) Corporate Ownership Around the World](#)
- [Lamoureux and Lastrapes \(1990\) Heteroskedasticity in Stock Return Data: Volume versus GARCH Effects](#)
- [Lamoureux & Lastrapes \(1993\) Forecasting stock-return variance: Toward an understanding of stochastic implied volatilities](#)
- [Lintner \(1965\) The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets](#)
- [Lucas \(1978\) Asset Prices in an Exchange Economy](#)
- [Malkiel \(1995\) Returns from Investing in Equity Mutual Funds from 1971 to 1991](#)
- [Malkiel \(2003\) The efficient market hypothesis and its critics](#)
- [Malkiel \(2005\) Reflections on the efficient market hypothesis: 30 years later](#)
- [Mankiw and Zeldes \(1991\) The Consumption of Stockholders and Nonstockholders](#)
- [Markowitz \(1952\) Portfolio Selection](#)
- [Mossin \(1966\) Equilibrium in a Capital Asset Market](#)
- [Pukthuanthong and Roll \(2009\) Global market integration: An alternative measure and its application](#)
- [Rietz \(1988\) The Equity Risk Premium: A Solution](#)
- [Ross \(1976\) The Arbitrage Theory of Capital Asset Pricing](#)
- [Schwert \(2003\) Anomalies and market efficiency](#)
- [Sharpe \(1964\) Capital Asset Prices: A theory of market equilibrium under conditions of risk](#)
- [Sharpe \(1966\) Mutual Fund Performance](#)
- [Shleifer and Vishny \(1997\) A Survey of Corporate Governance](#)
- [Tobin \(1958\) Liquidity Preference as Behavior Towards Risk](#)
- [Vissing-Jorgensen \(2002\) Limited Asset Market Participation and the Elasticity of Intertemporal Substitution](#)
- [Xu and Malkiel \(2003\) Investigating the Behavior of Idiosyncratic Volatility](#)

The above links should work on UMaine campus computers. To access these articles off campus, you may have to sign into the UMaine library and use the “[OneSearch](#)” tool and search for the name of the article. When accessing these articles, I recommend you download the PDF. For some of the older papers, publishers have converted the PDFs into web text, which sometimes introduces typos into the equations.

### **What to Expect in Class**

I primarily convey course content through writing on the board or using the document camera. I very strongly recommend that students take notes in class and write down anything I write on the board. With the exception of showing tables/figures, I do not typically use presentation slides.

### **Additional Requirements for ECO553 Students**

Students enrolled in ECO553 will receive credit for a graduate level course. Thus, course expectations for those enrolled in ECO553 will differ from those enrolled in ECO453.

Students registered for ECO553:

- will read and report on one scholarly journal article about financial economics from a suggested list. If a student instead finds a relevant and interesting article not on the suggested list, it must be approved by the professor beforehand. Searching for articles that interest students is highly encouraged.

- will prepare a professional presentation analyzing, summarizing, and potentially critiquing a scholarly journal article about financial economics. Students will present this to the class on an assigned day.
- will complete and be graded on all homework assignments. This contrasts with students enrolled in ECO453 whose lowest homework score will be dropped.
- are expected to participate more than students enrolled in ECO453 when reviewing homework and test solutions in class.
- may be held to a higher standard in the grading of their homework, tests, and final exam.

## Tentative Calendar and Important Dates

Tuesday, September 3	Live lecture; first day of class
Thursday, September 5	Live lecture
Monday, September 9	Course add/drop ends
Tuesday, September 10	Live lecture
Thursday, September 12	Live lecture
Tuesday, September 17	Live lecture
Thursday, September 19	Live lecture
Tuesday, September 24	Live lecture
Thursday, September 26	Live lecture
Tuesday, October 1	Live lecture
Thursday, October 3	Live lecture
Friday, October 4	Last day to drop course without appearing on transcript
Tuesday, October 8	Live lecture
Thursday, October 10	Live lecture
Tuesday, October 15	No class; Fall Break
Thursday, October 17	Live lecture
Tuesday, October 22	Test 1 (in-person)
Thursday, October 24	Live lecture
Tuesday, October 29	Live lecture
Thursday, October 31	Live lecture
Tuesday, November 5	Live lecture
Thursday, November 7	Live lecture
Tuesday, November 12	Live lecture
Thursday, November 14	Live lecture
Friday, November 15	Last day to withdraw from course & receive “W” grade (4:30pm)
Monday, November 18	Email the professor your ranked top 2 journal articles to present*
Tuesday, November 19	Live lecture
Thursday, November 21	Live lecture
Tuesday, November 26	No class; the professor will be at an economics conference
Thursday, November 28	No class; Thanksgiving Break
Tuesday, December 3	Test 2 (in-person)
Thursday, December 5	Live class for ECO553 journal article presentations*
Tuesday, December 10	Live class for ECO553 journal article presentations*
Thursday, December 12	Live class for ECO553 journal article presentations*; last class
Thursday, December 19	In-person cumulative final exam (12:15pm-2:15pm in Lengyel 127)

Homework assignment due dates will be announced in class.

\*The Journal article presentation is only required for students enrolled in ECO553. Students enrolled in ECO453 are still expected to attend the class during the journal article presentations.

## **Class Policies**

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### **Late Policy**

Late assignments are usually not accepted. However, if a genuine medical or personal emergency causes you to miss a homework assignment or test, please let me know as soon as possible and no later than 5 days after the missed due date. If more than 5 days pass after the missed due date, a zero grade will be given for the missed assignment. Assignments originally due at the beginning (or middle) of the semester will not be allowed to be made up at the end of the semester. It is the student's responsibility to stay on top of due dates.

### **Attendance**

You are expected to attend class. However, you should stay home if you are sick. One of the societal changes due to the COVID-19 pandemic is to alter expectations of working or attending school when ill. If you have a bad cough, have a fever, are nauseous, or are feeling under the weather, please stay home. For public health reasons, we do not want sick students in our face-to-face classes. Your classmates don't want to catch whatever is making you ill. If you do miss a class, be sure to get the missed notes from a classmate.

If you miss a test or presentation due to an illness or personal/family emergency, please let me know as soon as possible (and no later than 5 days after the missed due date). If I deem the reason for the absence as excusable, then you will be allowed to make up the exam or presentation.

### **Classroom conduct**

You are expected to act professionally. This expectation includes, but is not limited to: being quiet when others are speaking, silencing your cell phone, respecting other students, respecting the instructor, and asking questions by raising one's hand. If you are acting disorderly and impeding other students' ability to learn, I reserve the right to ask you to leave the classroom.

Laptop computers are allowed in class for legitimate class-related tasks, such as taking notes, accessing course materials, or completing assignments. If I find you using your laptop computer in class for tasks not related to the course, then I will ask you to put your laptop away. Note that scrolling through social media on your laptop is extremely distracting to students sitting behind you.

### **Office Hours**

My office is located on the second floor of Winslow Hall room 207C. My official office hours are listed on the first page of this syllabus. If those times do not work for you, just send me an email and we can set up an appointment. Feel free to use these office hours to come see me and ask questions.

### **Class Communication**

I will use Brightspace to communicate announcements and distribute course materials. I recommend setting up your Brightspace account to automatically email you when new announcements are posted. It's a good habit to periodically check Brightspace and your UMaine email. I'll occasionally give reminders for upcoming due dates.

### **Syllabus**

This syllabus should be considered a contract between me (the professor) and you (the student). However, there may come a time when a change to the syllabus becomes necessary. In such an event, the change will be announced in class and posted online.



# **University Policies**

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## **University Academic Honesty Statement**

Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314:

<https://www.maine.edu/board-of-trustees/policy-manual/section-314/>

## **Students Accessibility Services Statement**

If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, um.sas@maine.edu, 581-2319, as early as possible in the term. Students may begin the accommodation process by submitting an accommodation request form online and uploading documentation at [https://umaine-accommodate.symplicity.com/public\\_accommodation](https://umaine-accommodate.symplicity.com/public_accommodation). Once students meet with SAS and eligibility has been determined, students submit an online request with SAS each semester to activate their approved accommodations. SAS creates an accessibility letter each semester which informs faculty of potential course access and approved reasonable accommodations; the letter is sent directly to the course instructor. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (Thomas Wiesen) privately as soon as possible.

## **Course Schedule Disclaimer (Disruption Clause)**

In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

## **Observance of Religious Holidays/Events**

The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department, or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

## **Sexual Discrimination Reporting**

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, your teacher is required to report this information to the campus Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity.



If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

- For confidential resources on campus: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000.
- For confidential resources off campus: Rape Response Services: 1-800-871-7741 or Partners for Peace: 1-800-863-9909.
- Other resources: The resources listed below can offer support but may have to report the incident to others who can help:
- For support services on campus: Office of Sexual Assault & Violence Prevention: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911. Or see the OSAVP website for a complete list of services at <https://umaine.edu/titleix/>