University of Southern California
Department of Economics

ECON 652
Economics of Financial Markets II

Steve Sapra, Ph.D., CFA   Spring 2021

Course Syllabus

This syllabus describes the policies, procedures, and content of this course. Please read it.

Contact Information
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Course Objective
The objective of the course is to study the theory of asset pricing and to gain a deep understanding of the major topics in empirical finance. While this is a theoretical class, I intend the course to have a significant applied component. Most students who take this class will ultimately be employed in industry and thus need to understand both the theoretical concepts behind asset pricing but also how to apply the theory to the "real world". As such, the course is structured such that the first half is largely theoretical with the remainder focusing on advanced applied issues.

This course assumes that students have a reasonable understanding of the standard concepts in finance. Students should have completed a course in the field and need to have a general understanding of the CAPM, equity valuation models, bond pricing, and derivatives. Mastery is not required, but familiarity is. While we will cover these topics briefly during the first week of class, they will be taught with a "review mindset", so that we have time to focus on more advanced topics. If you have not taken formal coursework in these areas, I would recommend taking this course at a later time once you've done so.

We will utilize mathematics intensively in this course. This includes the use of calculus, linear algebra, statistics, and econometrics. To be successful in this class, you will need to have a solid understanding of these concepts. If you do not have formal training in calculus

and statistics, you should not take this course. I will not be doing a math & stats "refresher" section for those who are rusty.

Having said that, this is not a math class. While it is not uncommon for courses of this nature to be structured largely as a course in mathematics, that will not be the case here. Math is simply a tool that researchers utilize, albeit an important one. Ultimately, those who are successful in the finance industry understand technical models at a deep level, but more importantly, are cognizant of both the benefits and the limitations of the models that we employ. Students should learn to appreciate models for what they are, but one should never rely on them as the "sacrosanct truth".

In order to maximize the real world experience of this course, time permitting I will try to spend the beginning of each class discussing current events in markets. This may be something as simple as discussing what has been happening with equities, interest rates, or currencies or I may go deep into a major market development. I will make extensive use of Bloomberg during this part of the lecture so that students not only get exposure to the main tool used by practitioners, but can see market data in "real time".

While there is no grade for class participation, I very much appreciate an interactive class with interesting thoughts and questions, whether we're covering current topics or discussing a theoretical model. Please don't be shy.

Textbooks
There are five required textbooks for this course. You're free to use whatever edition you want, but note that homework will largely be assigned from the text, so you need to make sure that you do the correct homework questions. Although it's a lot of books, none of them should be that expensive. Furthermore, if you plan to work in industry, these books are indispensable as references. The textbooks are:

Cochrane, John H., *Asset Pricing*, Revised Edition, 2005
https://www.amazon.com/Asset-Pricing-John-H-Cochrane/dp/0691121370/ref=sr_1_2?dchild=1&keywords=cochrane+asset+pricing&qid=1606250831&s=books&sr=1-2

Campbell, John Y., *Financial Decisions and Markets: A Course in Asset Pricing*, 2017
https://www.amazon.com/Financial-Decisions-Markets-Course-Pricing/dp/0691160805/ref=sr_1_1?dchild=1&keywords=john+y+campbell&qid=1606250813&s=books&sr=1-1

Shreve, Steven E., *Stochastic Calculus for Finance I: The Binomial Asset Pricing Model*, 2005.
https://www.amazon.com/Stochastic-Calculus-Finance-Binomial-Springer/dp/0387249680/ref=sr_1_2?dchild=1&keywords=shreve+stochastic+calculus+1&qid=1606250698&s=books&sr=1-2

Shreve, Steven E., *Stochastic Calculus for Finance II: Continuous-Time Models,* 2010.
https://www.amazon.com/Stochastic-Calculus-Finance-II-Continuous-
Time/dp/144192311X/ref=sr_1_2?dchild=1&keywords=shreve+stochastic+calculus+1&qi
d=1606250787&s=books&sr=1-2

Hull, John C., *Options, Future, and Other Derivatives,* 9th edition (note that this not the most
recent edition. We're using the cheaper 9th ed.)
https://www.amazon.com/Options-Futures-Other-Derivatives-9th/dp/0133456315

Lectures and Reading
The bulk of class time will consist of lectures.   My lectures will largely follow the textbooks
although I strongly encourage you to attend lectures and read the sections before class.
Doing both will materially improve your understanding and help you to retain the course
material. We are covering a lot of material over the semester. You will need to read the
book, re-read the book, attend lectures, and do homework in order to maximize your
chances of success in the course.

I use very little PowerPoint for my lectures. I believe that simply going over slides lacks the
necessary detail that students need to master the material. Rather, I will write detailed
notes on the board. Because most of the lectures are not PowerPoint-based, **lecture notes
will not be made available to students**. If you miss a class, you'll need to reach out to one
of your fellow students to obtain the notes for that class.

Paper Presentation
Students will be required to present a finance paper to the class. Depending on the number
of students enrolled, I'll ask you to assemble in groups of 2-5 individuals and your group
will be responsible for doing a formal paper presentation. I have pre-selected the papers
and will assign them randomly to each group. Your presentation should be no more than 30
minutes and should use Powerpoint. You are expected to go "deep" into the paper,
including a detailed discussion of the model and the empirical results. You should be
prepared to answer tough questions from both the professor and your classmates. Your
grade will reflect the quality of the presentation and how well the content is conveyed. All
papers will be available in Blackboard for everyone to read.

Course Requirements and Grading
The course grade will be based on homework, the paper presentation, a midterm exam, and
a final exam. Your course grade will be determined using the following weights:

Homework	15%
Paper Presentation	15%
Midterm exam	30%
Final exam	40%

I will usually assign homework at the end of every class. **I will only be collecting
homework four times and I will not preannounce which homework assignments will**

be collected. You are responsible for doing all homework assignments whether I collect it or not. Your overall homework grade will be based on the four assignments which I choose to collect. Any collected homework will be accepted at the beginning of class only. Homework solutions will be posted right after class to Blackboard for all assignments whether collected or not.

The final exam is cumulative, so a good score on the final is indicative of comprehension of all the course material.   For students who score better on the final exam than the midterm, I will shift the weight from 30/40 to 20/50. Note that there will be no extra credit given. Other than the course grade, no letter grades will be assigned, although I will report the distribution of the midterm exam scores.

Exams
Both exams are closed book, though you will be allowed <u>a single double-sided 8½ × 11</u> page of notes for the midterm and the final. Do not bring two pages of notes to an exam.

For both exams, you will need a calculator that can raise numbers to arbitrary powers. Laptop computers and calculators with word-processing features are not permitted for use in an exam.

Textbook Readings and Important Dates
The schedule below is intended to be only a guide for the semester. I may modify the content covered or scheduled dates of any items below. This includes the addition and/or removal of content. All changes will be announced in Blackboard.

Date	Topic	Reading
1/18/2021	*Martin Luther King Holiday - NO CLASS*	Hull Ch. 4,5,6,7,10,11
1/25/2021	Finance Review: Interest Rates, Futures, Forwards, Swaps, & Options	Hull Ch. 4,5,6,7,10,11
2/1/2021	Choice Under Uncertainty	Campbell Ch 1
2/8/2021	Static Portfolio Choice	Campbell Ch 2
2/15/2021	*President's Day - NO CLASS*	
2/22/2021	The Consumption-Based Model	Cochrane Ch. 1
3/1/2021	Factor Pricing Models	Cochrane Ch. 9
3/8/2021	Expected Returns in the Time-Series and Cross-Section	Cochrane Ch. 20
3/15/2021	Asset Allocation Models	Instructor Notes
	Household Finance	Campbell Ch 10
3/22/2021	**MIDTERM EXAM**	
3/29/2021	The Binominal No-Arbitrage Pricing Models	Shreve I, Ch 1
	Probability Theory on Coin Toss Space	Shreve I, Ch 2
4/5/2021	Stochastic Calculus & The Black-Scholes Formula	Shreve II, Ch. 4
4/12/2021	Options on Indices and Currencies	Hull Ch. 17
	Option Greeks	Hull Ch. 19
4/19/2021	OIS Discounting & Volatility Smiles	Hull Ch. 9, 20
4/26/2021	Credit Risk & Credit Derivatives	Hull Ch. 24, 25
5/5/21 - 5/12/21	**FINAL EXAMS**	