Syllabus

ECON 337901 - Financial Economics   Peter Ireland
Boston College, Department of Economics   Spring 2024

Tuesdays and Thursdays, 10:30 - 11:45am
O'Neill Library, Room 247

Course Description

This undergraduate elective focuses on financial economics, with specific emphasis on asset pricing and the valuation of risky cash flows. After developing and studying the details of consumer decision-making under uncertainty, it uses that general framework as a basis for understanding both equilibrium and no-arbitrage theories of securities pricing, including traditional models like the capital asset pricing model and newer Arrow-Debreu theories.

Math

For reasons that will quickly become clear, verbal and graphical analyses are useful, but take us only so far when examining the multi-dimensional problems faced by investors who can allocate their funds across the many risky assets traded in global financial markets today. Mathematical analysis is therefore essential for a full development of the theories mentioned above. For this class, you won't need to start with mathematical tools that go beyond those presented in a college-level calculus class or statistical concepts that go beyond those developed in the statistics and econometrics courses that are already required for the economics major, but you will have to apply those tools and concepts on a daily basis, both in class and in working on the problem sets and exam questions. As when visiting a foreign country, reading a play by Shakespeare or a novel by William Faulkner, looking at abstract art, or listening to classical music, learning a "new language" can be tough going at first. But the more you practice the easier it gets, and soon – maybe sooner than you think – you'll find yourself speaking that language fluently and with confidence.

Course Materials

My lecture notes, which will serve as the main text for the course, are freely available through the course webpage at `http://irelandp.com/econ3379.html`.

Much of the material from those lecture notes is also covered in an excellent textbook by Jean-Pierre Danthine and John B. Donaldson, titled *Intermediate Financial Theory*. Either the third (2014) or the second (2005) edition of that book will be a very useful supplement to the lecture notes. Boston College Libraries provide electronic access to the third edition. To find it, just go to the BC Libraries' main page at `https://library.bc.edu` and type "Danthine and Donaldson" in the search bar.

Danthine and Donaldson assume that you have a background in economics, finance, math,

and statistics that is somewhat deeper and broader than I will for this class. Accordingly, the most fruitful strategy might be to look at the lecture notes first, see the material as it is presented in class, and then read the relevant chapters in the book to reinforce what you've already learned.

Course Requirements and Grading

Your grade for this course will be based on a series of problem sets (1/3), a take-home midterm exam (1/3), and a take-home final exam (1/3).

The problem sets will be made available through the course webpage and your answers to the questions on those problem sets will be collected on dates announced ahead of time in class. Some of the problem sets will follow the material covered in class quite closely; others will highlight results that extend those covered in class. All of the problem sets will help you prepare for the exams.

While it is fine for you to work together with other students on the problem sets, I still expect you to hand in your own individual answers to each question. Also, if you do work with others, make sure that you fully understand the answers to each problem, keeping in mind that you will have to work individually on the exams.

The exams will also be made available through the course webpage and your answers to the questions on those exams will be collected on dates announced ahead of time in class.

Both exams will will be "open book" exams: it is fine to consult your notes, textbooks, and other references when working on the exam questions. Different from the problem sets, however, I will expect you to work independently on the exams without consulting other people, inside or outside of this class. That is, I expect that the work you will hand in for the exams will be yours and yours alone.

Academic Integrity

Please familiarize or re-familiarize yourself with the University's policies on academic integrity, which can be found at `https://www.bc.edu/content/bc-web/academics/sites/university-catalog/policies-procedures.html#tab-academic_integrity_policies`, and take care to uphold those standards as they apply to your work for this course.

Along these lines, to repeat: while it is fine for you to work together with other students on the problem sets, I expect that your work on the midterm and final exams will be yours and yours alone.

Office Hours

I will announce my regular office hours (Maloney Hall, Room 338) shortly after the semester starts. You can always reach me by email at `peter.ireland@bc.edu` to ask a question or to make an appointment to talk in person.

Course Outline

Section numbers refer to the notes available through the course webpage; chapter numbers refer to Danthine and Donaldson's book.

Arrow-Debreu Theory

     Mathematical and Economic Foundations (Sec 1, Ch 1)

     Arrow-Debreu No-Arbitrage Pricing Theory (Sec 10, Ed 2 Ch 10, Ed 3 Ch 11)

     Overview of Asset Pricing Theory (Sec 2, Ch 2)

Decision-Making Under Uncertainty

     Making Choices in Risky Situations (Sec 3, Ch 3)

     Measuring Risk and Risk Aversion (Sec 4, Ch 4)

The Demand for Financial Assets

     Risk Aversion and Investment Decisions (Sec 5, Ch 5)

     Modern Portfolio Theory (Sec 6, Ch 6)

Classic Asset Pricing Models

     The Capital Asset Pricing Model (Sec 7, Ed 2 Ch 7, Ed 3 Ch 8)

     Arbitrage Pricing Theory* (Sec 8, Ed 2 Ch 13, Ed 3 Ch 14)

*if time permits