Course Description:

This course is an introduction to the theory of continuous-time financial economics, offering a review not only of the core results relating to dynamic asset pricing and consumption/portfolio choice in continuous time, but also of the main mathematical and statistical tools on which the theory is built. Upon completion of the course, students should have sufficient familiarity with these tools to be able to formulate and analyze continuous-time financial models.

The articles listed in the course outline include many of the classical papers in the field. You are strongly encouraged to read as many of them as possible.

Prerequisites:

The prerequisite for this course is FNCE 911 (or familiarity with C.-f. Huang and R. Litzenberger, Foundations for Financial Economics, North-Holland, 1988). Some graduate-level knowledge of analysis and statistics is helpful but not required.

Text and References:

The required textbook is:


The following books are also recommended:


The recommended mathematical references are:

The recommended statistical references are:


Course Outline and Suggested Readings:

1. Background Material from Mathematics and Statistics
   Lecture notes.

2. Arbitrage and Martingales
   Lecture notes.
   Textbook, Chapter 6.


3. Complete Markets: Hedging and Pricing Contingent Claims
   Lecture notes.
   Textbook, Chapters 5 and 8.


   *An asterisk denotes material that can be skipped on a first reading.
4. Complete Markets: Optimal Consumption and Portfolio Choice

Textbook, Chapter 9.


5. Incomplete Markets


6. Portfolio Constraints


7. Dynamic Equilibrium with Complete Markets

Textbook, Chapter 10, Sections A–H and J.

8. Dynamic Equilibrium with Portfolio Constraints


9. Models of the Term Structure

Textbook, Chapter 7 and Chapter 10, Section I.


10. Alternative Preferences


