Note: This is a variable-unit course that meets August 22 until October 13. During this time it will follow the same content as FIN 7446, which will continue until the last day of the semester.

Course Overview and Objectives
This is an introductory Ph.D.-level course in theoretical financial economics. The main purpose is to introduce mathematical approaches to modern portfolio theory and asset pricing. These include: the theory of choice, von Neumann – Morgenstern expected utility, Arrow-Debreu state pricing, implications of no arbitrage, stochastic discount factors, Hansen-Jagannathan bounds, and the capital asset pricing model, the mathematics of the efficient frontier. In this course, the primary emphasis is on the practical use of mathematical tools, combined with an intuitive interpretation of assumptions and results

Prerequisites
This course presumes ideally an MBA level understanding of finance and business and a math background that includes upper-level undergraduate (multivariate) calculus, statistics, and matrix algebra. However, a mathematically prepared student who lacks a formal economics or finance background can still manage this course as the economic concepts can be quickly assimilated.

Textbooks and Materials
I will mostly follow Pennacchi (2008) below and will occasionally draw from Cochrane (2005) for empirical applications. Slides based on Pennacchi (2008) will be provided.


Grading
Problem sets: 40%
Final: 60%