

NEW YORK UNIVERSITY STERN SCHOOL OF BUSINESS

Financial Theory IV - Continuous-Time Finance

B40.2337.20, Spring 2020

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This is a doctoral level course on continuous-time asset pricing and portfolio choice.

Course Outline

1. The continuous-time financial market, stochastic discount factors, martingales
2. European contingent claims pricing, options, futures
3. Term structure models
4. American options and dynamic corporate finance
5. Optimal consumption and portfolio choice
6. Equilibrium in a pure exchange economy, consumption CAPM
7. Exam - in class - closed-note, closed-book

Recommended Books and References

Back, K., *Asset Pricing and Portfolio Choice Theory*, Oxford University Press, 2017.

Duffie, D., *Dynamic Asset Pricing Theory*, Princeton University Press, 2001.

Karatzas, I. and S. E. Shreve, *Methods of Mathematical Finance*, Springer, 1998.

Karatzas, I. and S. E. Shreve, *Brownian Motion and Stochastic Calculus*, Springer, 1991.

Merton, R., *Continuous-Time Finance*, Blackwell, 1990.

Shreve, S. E., *Stochastic Calculus for Finance II: Continuous-Time Models*, Springer, 2004.