Fixed Income Securities

Department: MATH
Course Number: 6769
Hours - Lecture: 3
Hours - Lab: 0
Hours - Recitation: 0
Hours - Total Credit: 3
Typical Scheduling: Every spring semester
Description:
Description, institutional features, and mathematical modeling of fixed income securities. Use of both deterministic and stochastic models. Crosslisted with ISYE 6769.
Prerequisites:

Math 3215 and (MGT 6060 or MGT 6078)

Course Text:

No text

Topic Outline:

- Introduction to Fixed Income Securities
- Bond Calculations
- Quantifying Interest Rate Risk
- Floating Rate Notes and Interest Rate Swaps
- Risk Management, Accounting, and Control
- Stochastic Interest Rate Models
  - Bonds, Forward and Futures Contracts: Discrete- and Continuous-Time Models
  - Term Structure: Discrete- and Continuous-Time Models
  - Factor Spot Rate Models: Discrete- and Continuous-Time
  - Yield Curve Models and the Heath-Jarrow-Morton Model
- Forwards, Futures and Options, caps and caplets, swaps
- Credit Risk on Corporate Bonds
- Emerging Market Debt
- Mortgages and Mortgage Derivatives