

IE 49A: Introduction to Finance

Instructor: Wolfgang Hörmann, e-mail: hormannw@boun.edu.tr

Text Book: David G. Luenberger : Investment Science

Reference books: John C. Hull: Options Futures and Other Derivatives
Bodie, Kane, Marcus: Investments

Aim of the Course: To give an overview on basic concepts of investment science including fixed income instruments, the classical Markowitz approach for stock portfolio selection and a very short introduction to forwards, futures and options. At the end of the course the students will be able to solve practical investment problems using the above mentioned classical approaches. The software used for the practical calculations is R.

Course Contents

Week 1: A review: Basic theory of interest rates, present value and internal rate of return of investments
Fixed income securities (bonds), Bond Yield , Duration, Immunization

Week 2: Yield Curve , Term structure of interest, Forward rate

Week 3: Term structure explanations, deriving the yield curve of coupon bonds

Week4: Floating rate bonds , Interest rate swap, Forward rates calculated from swap prices

Week 5: Stock exchange, stock price, Random returns:
Mean variance portfolios and the Markowitz approach

Week 6+7: The two funds and the one fund theorem and the Capital Asset Pricing Model (CAPM)

Week 8: Factor Models and the CAPM with data

Week 9: No Arbitrage argument, Forward (L10.1-10.4), Futures (L10.6+10.7)

Week 10: Options

Week 11: Pricing options with a binomial tree

Week 12: Hedging with forwards, futures and Delta Hedging for options

Prerequisite: IE341 Engineering Economics

Course Hours and Rooms:

Wednesday 14.00 to 15.00(M3120)

Thursday 11.00 to 13.00 (M2171)

Quizzes: There will be 5 Quizzes during the course hours

Grading: Quizzes (25%), mid-term test (445%), Final Project (30%).