



# AI2135 Financial Investments

## 7.5 credits

### Finansiell Ekonomi

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

### Establishment

Course syllabus for AI2135 valid from Autumn 2010

### Grading scale

A, B, C, D, E, FX, F

### Education cycle

Second cycle

### Main field of study

Built Environment, Industrial Management

### Specific prerequisites

Eligibility to the master programme in Real Estate and Construction Management.

### Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

To provide participants with an understanding of investment analysis and markets of financial assets. Focuses on the valuation of equity and derivative securities. After the course, participants will be able to:

- Understand the concept of financial risk and be able to calculate statistical measures of risk.
- Use empirical return distributions to calculate variance, standard deviation and correlation of returns.
- Understand the concepts of diversification, systematic risk and firm specific risk.
- Explain how individual investors will choose from the efficient set of portfolios and use empirical return series to calculate the portfolio frontier.
- Explain how risk-free assets affect the portfolio choice and calculate the risk and return for efficient portfolios when combining risk-free and risky assets.
- Understand how risk premiums for individual stocks are determined according to the Capital Asset Pricing Model (CAPM) and multi-factor models.
- Use empirical returns series to critically apply different single-factor and multi-factor risk models.
- Understand the implications of the efficient market hypothesis, and describe the explanations of behavioural finance for market inefficiency and market anomalies.
- Explain the basics of forwards, futures, swaps, and options contracts.
- Apply different valuation methods to value derivatives securities, with focus on call and put options.
- Understand the concept of investment opportunities as real options.
- Apply the binomial option pricing model to value real options.

## Course contents

Risk and return. Portfolio theory. Asset pricing models (CAPM and multifactor models). Theory and evidence of market efficiency and behavioural finance. Derivative securities with focus on stock options and real options.

## Course literature

Berk and Demarzo, Corporate Finance, Latest Edition. Pearson Education.

## Examination

- TEN1 - Examination, 5.5 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Assignment, 2.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

The assessment consists of two projects and a written exam.

## **Other requirements for final grade**

Two approved projects and an approved exam.

## **Ethical approach**

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.