AI272U Real Estate Investment Analysis 7.5 credits

Investeringsanalys för fastighetstillämpningar

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

Establishment

Course syllabus for AI272U valid from Autumn 2012

Grading scale

P, F

Education cycle

Second cycle

Main field of study

The Built Environment

Specific prerequisites

Higher education in engineering, economics or equivalent knowledge through work experience.

Language of instruction

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

Intended learning outcomes

The overall aim of this course is to provide students with the mathematical and practical tools needed to evaluate different investment alternatives, i.e. provide students with basic theoretical and practical knowledge of investment decision making, with emphasis on direct equity investments in income-producing real estate. Furthermore, this course prepares students for further studies in real estate finance and economics.

Course contents

Students should after the course be able to answer questions like

- What investments should the investor make (the investor's investment decision)?
- How do investors determine the price they are willing to pay for an office building?

To be able to answer these questions, one need to be able to:

- Identify and explain the basic steps in the investment process.
- Derive and understand the origin of the major formulas used in present value calculations.
- Evaluate different investment alternatives.
- Critically assess different investment criteria.
- Define and compute different return measures.
- Develop MS Excel spreadsheets for investment decision making.

Disposition

The course consists of three major blocks:

- Present value mathematics.
- Invetsment decision making.
- Discounted Cash Flow models in MS Excel.

Block 1 Present value mathematics

- The time value of money.
- Net Present Value, NPV, and the opportunity cost of capital
- The basic formulas and procedures for converting future cash flow to present value, given the appropriate discount rates.
- The basic formulas and procedures for other, related mathematical formulas to compare cash flows occuring at different points of time
- The origin and derivation of these mathematical formulas, in such a way that they can be applied with some flexibility to new situations.

Block 2 :Investment decision making

- Capital budgeting techniques.

- Investment decision making using the Net Present Value, NPV, rule.
- The concept of Internal Rate of Return, IRR, and some pitfalls in using the IRR as an investment criteria.
- Other investment decision making rules and comparement with the NPV.
- Sensitivity analysis.
- Calculations in nominal and real terms.

Block 3 Discounted Cash Flow models in MS Excel

- The components and and terminology of the typical property investment projection cash flow proforma.
- Building up a cash flow model in MS-excel, that can be usee for investment decision making
- Some major practical considerations in applying Discounted Cash Flow models for real estate properties.
- Some major practical considerations in estimating the appropriate discount rate to use.

Contents in brief

Present value mathematics; Discounted cash flow models; Investment decision criteria; Modelling in MS excel; Sensitivity analysis.

Course literature

Berk, J. and DeMarzo P., Corporate Finance, latest edition, global edition, Pearson.

Examination

- PRO1 - Project Work, 2.5 credits, grading scale: P, F
- TEN1 - Exam, 5.0 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.

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

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.