ME2313 Financial Mathematics, Business and Management 15.0 credits

Finansiell matematik, ekonomi och ledarskap

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 ME2313 valid from Autumn 2015

Grading scale

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

Education cycle

Second cycle

Main field of study

Industrial Management

Specific prerequisites

The course is only given for FMI (Track Financial Mathematics and Industrial Engineering)

Mathematical courses:

SF2940 Probability Theory

SF2942 Portfolio theory and risk management

SF2701 Financial mathematics, basic course, or SF2975 Financial derivatives

At least 42 credits of track specific mathematical courses (the above included)

At least 27 credits of courses in Industrial engineering and management:

Language of instruction

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

Intended learning outcomes

The student should after the course be able to:

- Apply knowledge and skills from earlier courses and learn to acquire new knowledge when necessary
- Apply models of financial mathematics and/or models of corporate finance on a practical problem using computer programming/computer models
- Analyse, understand and handle differences between financial theory and financial practices
- Reflect, in written and oral form, on the relation between financial theory and financial practices

Further, after the course the student should have gained advanced:

- Theoretical knowledge within a limited field of financial mathematics
- Practical knowledge within a limited field of financial mathematics
- Knowledge of how the financial sector is structured and which preconditions and requirements that are put on an individual company in this sector

The student should after the course furthermore have good skills in:

- Organising, handling and leading a complex project over a long period of time and in collaboration with project provider and project members.

Course contents

The course is carried out in project form.

The course starts with an organizational analysis of the project company, to be reported after one month, in the form of a short report and oral presentation.

The project is carried out as a co-operation between the department of Industrial engineering and management and an actor within the finance sector with support from the Department of mathematics.

The emphasis of the project is in the field of financial mathematics, with a project task that requires computer programming. The computer programming is done to build models and applications to solve actual problems that the companies have within the fields of finance and economics. Leadership issues deal with placing the problem and its solution in an organisational context and about making the group function and complete the project task and deliver the Project results on time and according to the specification of the company. The interaction with the project provider is important.

The project is carried out in groups. A systematic investigation and examination methodology is applied. Problem formulation, and intermediate seminars are included, in addition to the final presentation that takes place in the form of one or two project reports and an oral presentation for the project provider. In certain cases, a complete computer model with a user guide is included in the report. Furthermore an individual reflecting report that treats the work process and an oral review of another project is included.

The nature of the project will define the contents of the course. The ambition is that the projects should be designed in consultation between students, the departments and the project provider from the the financial sector. This implies that the students who have their own ideas for a project and/or contacts within the financial sector have the opportunity to propose their project to the course.

Course literature

Meddelas vid kursstart

Examination

- PRO1 - Project, 3.0 credits, grading scale: P, F
- PRO2 - Project, 12.0 credits, grading scale: A, B, C, D, E, FX, 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.

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.