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 2018

Grading scale

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

Education cycle

Second cycle

Main field of study

Industrial Management

Specific prerequisites

Mathematical courses:

SF2940 Probability Theory

SF2942 Portfolio theory and risk management

SF2701 Financial mathematics, basic courses or SF2975 Financial derivatives

At least 42 credits specialised mathematical courses (the above included)

At least 27 credits courses in industrial economics

Language of instruction

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

Intended learning outcomes

The course intends to give the students professional skills that are needed to solve financial mathematics problems that are so composite and complex that they for his solution require knowledge both in financial mathematics and industrial economics and can be solved only by means of computer programming/computer models.

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, the student after the course should have assimilated 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

Furthermore, the student should after the course 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 a lecture's/seminar series as preparation before the start of industry driven projects.

The project is carried out as a cooperation between the Department of industrial economics and organisation and an actor in the finance sector.

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 include, with an oral critical review on another project work. The final presentation of the project takes place in the form of one or two main reports as well as an oral presentation for the employer. In certain cases is included in the report a complete computer model with user management. Furthermore, an individual reflecting report that treats the work process and separately individual evaluation of the members of the own project group is included.

The nature of the project will define the contents of the course. The ambition is that the projects are designed in consultation between students, the department and the current actor in the finance 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

- PRO2 - Project, 12.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminar, 3.0 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.

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.