FDD3371 Advanced Computation in Fluid Mechanics 7.5 credits

Avancerade beräkningsmetoder i flödesmekanik

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

Establishment

Course syllabus for FDD3371 valid from Spring 2019

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

Language of instruction

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

Intended learning outcomes

After the course, the student should (i) have an understanding of theory behind efficient calculation methods for computer simulation in fluid mechanics with a focus on adaptive finite element methods (FEM) for incompressible flow as well as (ii) an ability to use these calculation methods to solve problems in fluid mechanics. Research challenges in the field are emphasised, e g with regard to turbulent flow.

Course contents

The activities of the course are divided into two parts. The first part consists of a number of seminars that emphasise a number of subfields in the field and a number of laboratory sessions that focus on different computational techniques and software tools. The other part of the course is focused on a project defined by the student where the technologies and the tools from the first part of the course are applied on a problem in fluid dynamics.

Course literature

The course literature consists of lecture notes and research articles.

Examination

- EXA1 - Examination, 7.5 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.

Written examination, laboratory reports as well as project report.

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.