SD2625 Computational Road Vehicle Aerodynamics 3.0 credits

Fordonsaerodynamiska beräkningar

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 SD2625 valid from Autumn 2008

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

SG1217 (for T), SG1220 (for M), SG2223 (for F) or corresponding.

Language of instruction

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

Intended learning outcomes

The overall objectives with the course is that at the end of the course the students should be able to

- describe major advantages and disadvantages with CFD in vehicle aerodynamics.
- based on a given vehicle describe areas where alterations in the geometry might have large impact on the drag coefficient for the given vehicle.
- describe on a rudimentary level the concepts discretization of space and time derivatives, boundary conditions and initial data.
- describe on a rudimentary level RANS, LES, DES and DNS.
- perform a calculation in 2D using Fluent and explain how the results can be validated.

Course contents

Course literature

Written hand-outs from the department.

Examination

- PRO1 - Project, 3.0 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.

Other requirements for final grade

Written detailed lab 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.