



SD2703 Marine Dynamics 8.0 credits

Marin dynamik

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

Establishment

The course syllabus is valid from Spring 2022 according to the school principal's decision:
S-2022-0529 Decision date: 2022-02-24

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Base programme T, M, P, F or equivalent.

English B / English 6

Language of instruction

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

Intended learning outcomes

The learning objectives are that you after finishing the course should be able to

- explain how the dimensions, geometry and mass distribution of a ship influences its seakeeping and manoeuvrability characteristics,
- experimentally evaluate a ships roll characteristics and manoeuvrability,
- model water waves, hydrodynamically as well as probabilistically,
- formulate and solve linear and non-linear equations of motions for a ship in a seaway and for manoeuvres in calm water,
- use the equations of motions to analyse a ships course stability and manoeuvrability,
- use the equations of motions and probabilistic wave theory to evaluate a ships seakeeping characteristics and operability in a seaway,
- present technical work in writing, in line with standard requirements on content, disposition and language.

Course contents

Experimental evaluation of a roll motion, course stability, and manoeuvrability in full scale during a visit on board a ship. Hydromechanic and probabilistic modelling of water waves. Analytical and numerical analysis of ships motions, seakeeping and manoeuvring. Project where each student evaluate and improve the seakeeping and manoeuvring characteristics for a certain ship.

Examination

- ÖVN1 - Exercises, 6.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 2.0 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.

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

Other requirements for final grade

Project home work (ÖVN1).

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.