SD2708 Hull Structural Design 6.0 credits

Skrovkonstruktion

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

Establishment

Course syllabus for SD2708 valid from Autumn 2010

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

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

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 the principal layout of a hull structure and the function of the different structure elements,
- explain what loads a ship structure is subjected to and how these loads are predicted in design,
- explain how global and local strength (for the whole hull girder and the local structure respectively), stiffness, buckling and fatigue is treated in the design process,
- apply your knowledge in structure mechanics and technical beam theory from earlier courses in the analysis of global as well as local strength and stiffness,
- apply finite element methods in direct calculations of local hull strength,
- explain the purpose and structure of classification society rules,
- design of a ship hull according to class rules based on rule requirements and direct calculations,
- make a preliminary estimation of the hull structure weight,
- discuss hull structural design aspect by using correct terminology,
- present technical work in writing, in line with standard requirements on content, disposition and language.

Course contents

Lectures on principal layout of a hull structure, the function of the different structure elements, hull loads, and classification rules. Application of beam theory, plate theory and finite element methods in the analysis of ship structures. Project where each student design the structure for a certain ship.

Course literature

Rosén, A., Course binder, KTH Centre for Naval Architecture, 2010.

Examination

- ÖVN1 - Project Works, 6.0 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.

ÖVN1 - Exercises, 6.0 credits, grade scale: A, B, C, D, E, FX, F

Other requirements for final grade

Project home work and other assignments (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.