MG2015 Advanced Welding Technology, Modulus 3 6.0 credits

Svetsteknologi, högre kurs, modul 3

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 MG2015 valid from Spring 2012

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

MG1010 Introductory Welding Technology, general course
MG1011 Introductory Welding Technology, advanced course
MG1012 Non-Destructive Testing

MG2013 Advanced Welding Technology, Module 1
MG2014 Advanced Welding Technology, Module 2

or corresponding

Language of instruction

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

Intended learning outcomes

Upon completion of this course the student will have

- deep knowledge of strength of welded details and welded structures
- ability to conduct analysis of the strength of a welded structure
- ability to accomplish a design work including strength calculations of welded constructions
- ability to use FEM programs as an aid for analysis of welds as to strength
- ability to plan flexible welding system with and without a robot
- ability to accomplish an optimized choice of material, consumables, welding process including optimization of the total weld quality and costing.

Course contents

Basic strength of materials - short update; Strength aspects of various metallic construction materials; Work procedures for the design of welded products; Constructive design; Static and dynamic design of welded joints; Choice of welding class and safety factors; Joint design and placement, Impact of additive material; Standards and documentation.

Disposition

The classes are mainly concentrated to two full days of studies, in average every second week during two months . In between classes, homework assignments and preparation work have to be completed. High degree of attendance to classes is required.

Course literature

Konstruktionshandbok för smältsvetsade produkter Utgåva 3; In Swedish
Bestämmelser för Stålkonstruktioner 1999; In Swedish

and handouts distributed during the course

(Study of a textbook in elementary strength of materials is recommended as preparation for this course)

Examination

- TEN1 - Written exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercise, 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.

MG2016

Other requirements for final grade

Written examination (TEN1; 3 credits)
Exercises (ÖVN1; 3 credits).

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.