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 2016

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Registered to MG1010 Introductory Welding Technology, general course

Basic eligibility and 120 cr in Engineering

knowledge of Swedish B/Swedish 3

or the corresponding

Language of instruction

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

Intended learning outcomes

After passing the course the student will be able to:

- thoroughly describe the strength of welded details and welded structures
- conduct analysis of the strength of a welded structure
- accomplish a design work including strength calculations of welded constructions
- use FEM programs as an aid for analysis of welds as to strength
- plan flexible welding system with and without a robot
- 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,
Bestämmelser för Stålkonstruktioner 1999,
samt utdelat material i kursen.
(Som förberedelse rekommenderas gymnasiebok i hållfasthetslära)

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.

Other requirements for final grade

Passed written examination (TEN1; 3 cr)
Approved exercises (ÖVN1; 3 cr).

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.