MG1011 Introductory Welding Technology, Advanced Course 6.0 credits

Svetsteknologi, fortsättningskurs

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

Establishment

Course syllabus for MG1011 valid from Spring 2020

Grading scale

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

Education cycle

First cycle

Main field of study

Mechanical Engineering, Technology

Specific prerequisites

General entry requirements and a minimum of 120 credits in technology.

Language of instruction

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

Intended learning outcomes

After completing the course with a passing grade the student should be able to:

- explain materials technology applied to welded constructions and structural members
- account for welding of stainless steels and light metals
- describe common automation and mechanisation solutions in welding
- describe common welding defects and their root causes
- account for post processing methods/property improving methods for welded joints, as well as quality of joints
- computationally assess appropriate choice of material
- describe the application of fracture mechanics to welded designs, and analyse the defect tolerance of a casualty critical design

Course contents

Continuation of welding technology and material issues. Wide coverage, with the problems of welding technology in main focus (welding technology is an interdisciplinary subject). A certain focus is put on the sections about weldability and welding methods for different steels, but aluminium is also discussed. Strength in welded joints are further studied regarding fatigue and critical crack dimensions. Welding lab exercises

Disposition

The course is given full-time 2 days/week, on average every second week during 2 months. The course is partly a distance learning course, which implies that quite a lot homework is required. The course has high attendance requirements. The education is given in Swedish. Lab exercises in welding.

Course literature

Svetsningens materialteknologi, all litteratur i svets ak, samt en del nytt som utdelas på lektionerna.

Examination

- LAB2 - Laboratory work, 0.5 credits, grading scale: P, F
- TEN2 - Written exam, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- DEL1 - Participation, 0.0 credits, grading scale: P, F

- HEM1 - Home assignments, 1.0 credits, grading scale: P, F
- SEM2 - Seminars, 0.5 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.

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

The written examination consists of two parts of which one is of so called multiple choice type, while the other contains problems of descriptive nature. The course literature may be used as an aid during the latter of the above-mentioned examination parts. Calculators are allowed.

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.