



# 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 Autumn 2015

### Grading scale

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

### Education cycle

First cycle

### Main field of study

Mechanical Engineering, Technology

### Specific prerequisites

Basic eligibility and 120 cr in Engineering

### 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:

- explain materials technology applied to welded constructions and structural members
- describe the application of strength on welded structural members
- explain how welding energy affects conditions of materials technology
- describe the application of fracture mechanics on welded constructions, pressure vessels etc.
- perform design calculations on a welded component
- calculate the limitations for an optimised choice of material
- analyse defect tolerance of a casualty critical construction.

## Course contents

Continued education in welding and welding related material technology, with a focus on common welding technology problems. Main topics include weldability of different steel materials and welding methods, but aluminum welding is also discussed. Continued studies of strength in welded constructions and structural members, including fatigue and critical crack dimensions. Laboratory exercises in practical welding.

## Disposition

The classes are concentrated to two full days of studies, in average every second week during two months (Oct-Dec). In between classes, homework assignments and preparation work have to be completed. High degree of attendance to classes is required. The course includes laboratory exercises in welding.

## Course literature

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

## Equipment

Will be announced at the start of the course

## Examination

- SEM1 - Seminar, 0.0 credits, grading scale: P, F
- TEN1 - Examination, 6.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 0.0 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.

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

The written examination consists of two parts: One multiple choice part and a second with essay type questions. The course literature may be used during the second part. Calculators are allowed.

## Other requirements for final grade

Passed written examination (TEN1; 6 cr)

Active participation in seminars (SEM1; 0 cr)

Approved laboratory exercises (LAB1; 0 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.