Welding Processes, 6 HE credits

Svetsprocesser, 6 hp

Established: 2018-10-29
Established by: Department of Engineering Science
Applies from: V19

Learning outcomes

Knowledge and understanding in:

• Fundamental concepts of physics of arc, heat source / heat flux, LASER, Electron Beam, solid state welding and thermal stress generation;
• Main industry-applied welding processes, such as Resistance Welding, LASER Welding, Electron Beam Welding, conventional and waveform controlled arc welding processes;
• Joints and fixtures for arc welding and operational welding imperfections;
• Residual Stresses and Distortions.

Skills and abilities in:

• Recognizing and describing each of the main processes, based mainly on heat source, feedstock and equipment components, and correlating each process to industrial applications, as a function of operational parameters such as material composition and thickness, welding position, production capacity and production line requirements;
• Foreseeing the needs and niches for process improvements through research and technological development.

Judgements and approach:

• To show a deep learning approach towards the subject, learn and understand independently, making comparisons, analyzing and getting conclusions independently.

Entry requirements

Degree of Bachelor of Science in mechanical engineering, manufacturing engineering, industrial engineering or equivalent. The Bachelor of Science degree must be comprised of a at least 7.5 credits of materials science and at least 15 credits of mathematics including basic knowledge of analysis, linear algebra and statistics. In addition, verified knowledge of English corresponding to the course English B, English 6 in the Swedish high school or equivalent.

The forms of assessment of student performance

Final written examination (graded), laboratory reports (pass / not pass), quizzes or problems to solve, project report and presentation. All individual.

Other regulations

Course grading: F/Fx/E/D/C/B/A - Insufficient, Insufficient- more work required before the

credit can be awarded, Sufficient, Satisfactory, Good, Very Good, Excellent
Course language: The teaching is conducted in English.

General rules pertaining to examination at University West are availible at www.hv.se.

If the student has a decision/recommendation on special support due to disability, the examiner has the right to examine the student in a customized examination form.

Cycle
Second cycle

Progressive specialization
A1F - second cycle, has second-cycle course/s as entry requirements

Main field of study
Mechanical Engineering