

Advanced Materials Science, 6 HE credits

Avancerad Materialteknik, 6 hp

Established: 2018-03-12

Established by: Department of Engineering Science

Applies from: H18

Learning outcomes

Knowledge and understanding in:

- Fundamental concepts of metallurgy (diffusion, phase transformation, dislocation, defects, crystal structures, phase diagrams, non-equilibrium states, strengthening mechanisms, mechanical properties, corrosion properties)
- Physical metallurgy of specialty metals such as high strength steels, duplex stainless steels, superalloys and titanium alloys

Skills and abilities in

- Using specific software in connection to the course contents
- Establishing relations between the experimental results in the lab and the theoretical framework

Values and attitudes

- Showing a deep learning approach towards the subject, trying to learn and understand for themselves, 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 at least 7.5 HE 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

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

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 available 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

A1N - second cycle, has only first-cycle course/s as entry requirements

Main field of study

Mechanical Engineering