

## **Materials Science and Engineering, 7,5 HE credits**

*Materialteknik, 7,5 hp*

---

Established: 2023-05-02

Established by: Department of Engineering Science

Applies from: V24

---

### **Learning outcomes**

#### **Course objectives**

After the course, students should be able to:

- describe different engineering materials at the structural level and give examples of this
- explain mechanical and thermal properties of metallic, polymeric and ceramic materials based on their inner structure
- describe and interpret the microstructure of metal alloys based on phase diagrams
- understand and describe how the structure of a metallic material can be modified in order to change the mechanical properties of the material
- describe the influence of temperature and environment on the property of a material
- describe the life-cycle of engineering materials and show insight into their environmental impact
- make appropriate material selections for various design tasks.

### **Entry requirements**

General entry requirements and approved result from the following course/courses:

HFG100-Solid Mechanics, basic course or the equivalent.

### **The forms of assessment of student performance**

Individual written examination. Individual laboratory with individual written assignment.

Laboratory in group with groupwise written report.

### **Other regulations**

Course grading: U/3/4/5

Course language: The teaching is conducted in English.

General rules pertaining to examination at University West are available at [www.hv.se](http://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**

First cycle

**Progressive specialization**

G1F - first cycle, has less than 60 credits in first-cycle course/s as entry requirements

**Main field of study**

Mechanical Engineering