

## Course Syllabus

### Materials Selection 4 Credits\*, First Cycle Level 2

#### Learning Outcomes

Upon completion of the course the student shall be able to:

- select simpler materials for product design based on limitations such as material functional properties, processing and performance
- describe how different factors affect the choice of materials for the manufacturing, usage and recycling of materials
- select materials so that product sustainability is improved and energy consumption is reduced, taking into account both the economy and the environment
- explain key concepts within life-cycle analysis in the material selection process

#### Course Content

The course addresses various factors that influence material selection in production, distribution, consumption and recycling. A brief description of the properties of construction materials is included, as is the basis for material selection and process selection that apply to a number of case studies. Furthermore, descriptions are given of tools that are used for environmental audits for the manufacturing, usage and recycling of materials.

The course ends with an assessment of the environmental impact of products through the application of life-cycle analysis.

#### Assessment

Assignment (4 credits)

#### Forms of Study

Lectures and assignments

#### Grades

The Swedish grades U, 3, 4, 5.

The grade of the assignment determines the student's final grade in the course.

#### Prerequisites

A minimum of 30 credits from a Bachelor programme in Mechanical Engineering

**Other Information**

Overlaps MP2035.

**Subject:**

Materials Technology

**Group of Subjects:**

Materials Technology

**Disciplinary Domain:**

Technology, 100%

**This course can be included in the following main field(s) of study:**

1. Materials Technology

**Progression Indicator within (each) main field of study:**

1. GIF

**Approved:**

Approved 15 February 2018

Valid from 1 March 2018