



*Course syllabus*

# Material i design Materials in Design

**FKMA10, 6 credits, G1 (First Cycle)**

**Valid for:** 2023/24

**Faculty:** Faculty of Engineering, LTH

**Decided by:** PLED M

**Date of Decision:** 2023-04-11

## General Information

**Main field:** Industrial Design.

**Compulsory for:** KID1

**Language of instruction:** The course will be given in English

## Aim

The course introduces main material categories, demonstrates similarities and differences between them as well as possibilities to control material properties by processing.

A design project is then used to apply this knowledge to a real-life practical demonstration.

## Learning outcomes

### *Knowledge and understanding*

For a passing grade the student must

- Be familiar with the main material categories, their properties and processing methods.
- Be aware of the relationships between structure and properties of materials.

### *Competences and skills*

For a passing grade the student must

- Demonstrate the ability to make a material selection, design and manufacture a product from it.
- Demonstrate the ability to present the design product and explain its technical advantages.

### *Judgement and approach*

For a passing grade the student must

- Be able to evaluate and discuss material selection from different viewpoints, e.g. technical, environmental, economical.

## Contents

The main material categories are introduced along with critical properties and possibilities to control them. Students are also trained for using practical interactive tools for material selection. Afterwards, students use these to produce a real-life design product and to present it in visual and written forms.

## Examination details

**Grading scale:** UG - (U,G) - (Fail, Pass)

**Assessment:** Examination takes place through compulsory assignments and projects with oral and written presentation. In the assignments, the students work individually and in the projects in groups of 3–10 students. Approved assignments and projects are required for a passing grade.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

## Admission

**Assumed prior knowledge:** Mechanics and design

**The number of participants is limited to:** No

## Reading list

- Mike Ashby and Kara Johnson: Materials and Design, The Art and Science of Material Selection in Product Design. Butterworth-Heinemann (Elsevier), 2014, ISBN: 978-0-08-098205-2. 3rd edition.

## Contact and other information

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**Course homepage:** <http://www.material.lth.se>