Industrial Material Selection

Programme course

6 credits

Industriella materialval

TMKM14

Valid from: 2017 Spring semester

Determined by
Board of Studies for Mechanical Engineering and Design

Date determined
2017-01-25

Offered for the last time
Autumn semester 2024

Replaced by
TMKM22

Main field of study
Mechanical Engineering

Course level
First cycle

Advancement level
G2X

Course offered for
- Mechanical Engineering, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Engineering Materials, Solid Mechanics.

Intended learning outcomes
After completion of the course the student will
- show understanding the interactions between design, processing and material.
- show understanding of a material selection based on the internal structure of the material.
- be able to do a systematic and sustainable materials selection based on the methods presented in the course.
- show awareness of the environmental impact of the materials selection throughout components life cycle.
- be able to use materials selection as a tool in the design process.

Course content
Computer exercises in systematic and sustainable materials selection. Material properties. Material indices. Project work with case studies of materials selection.

Teaching and working methods
The course contains lectures, tutorials and project work.

Examination

UPG2	Hand-in-assignment	1 credits	U, G
KTR1	Written test	2 credits	U, G
PRA1	Project assignment	3 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: Deformation and Fracture, New Materials, Polymers and Lightweight materials.

Department

Institutionen för ekonomisk och industriell utveckling

Examiner

Mattias Calmunge

Course website and other links

Education components

Preliminary scheduled hours: 48 h
Recommended self-study hours: 112 h

Course literature

Additional literature

Books

Michael F. Ashby., *Materials Selection in Mechanical Design*

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.