LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Mekanik i designprocessen
Mechanics in the Design Process

VSMA02, 5 credits, G1 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED V
Date of Decision: 2023-03-21

General Information

Main field: Industrial Design.
Compulsory for: KID1
Language of instruction: The course will be given in Swedish

Aim

The course gives basic knowledge in mechanics, structural mechanics and design in order to understand the relation and dependence between shapes and loads.

Basic concepts are presented in such way that they can be used as tools in a design process and contribute to the expression of a product.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- explain basic concepts in mechanics and structural mechanics.
- analyse and describe, from the basic concepts, products within their actual context.
- describe how the choice of form influences force distributions and deformation.

Competences and skills
For a passing grade the student must

- apply the knowledge from the course as an active tool in design of products
- illustrate and explain mechanical principles using sketches

Judgement and approach

For a passing grade the student must

- judge and discuss how design qualities can be connected to mechanical principles and properties, by using pictures and text and by oral presentations.

Contents

Fundamental concepts, quantities and relations which are used for characterizing material, forces and deformations are explained. From real-life situations problems are defined and suitable models are chosen for conceptual analyses of the problem. Examples of discussed concepts and quantities are mass, centre of gravity, stiffness, force, moment, equilibrium, tension, compression, bending, stress, strength and instability (buckling).

Examination details

Grading scale: UG - (U,G) - (Fail, Pass)
Assessment: Examination comprises compulsory attendance (80%) assignments and projects, the latter with oral and written presentation. For the assignments, the students work individually and for the projects in groups of 3–5 students. Approved assignments and approved 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

The number of participants is limited to: No
The course overlaps following course/s: VSMA01

Reading list

- Gustavsson, P. och Austrell, P.-E.: Kompendium: Krafter. LTH Byggnadsmekanik, 2003. Available in electronic format by the department, free of charge.
- Material handed out by Structural Mecanics.

Contact and other information

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Course homepage: http://www.byggmek.lth.se/utbildning/kurser/