Solid Mechanics, basic course

Programme course

6 credits

Hållfasthetslära, grundkurs

TMHL07

Valid from: 2017 Spring semester

Determined by
Board of Studies for Mechanical Engineering and Design

Date determined
2017-01-25

Main field of study
Mechanical Engineering

Course level
First cycle

Advancement level
G2X

Course offered for
- Design and Product Development

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
Calculus, Linaer algebra, Mechanics

Intended learning outcomes
The aim of this course is to give a thorough understanding of basic concepts and definitions in Solid Mechanics. The student should be able to make use of simple sizing rules useful in basic engineering work and have a basis for further studies of the subject.

Course content
The course gives an introduction to solid mechanics. It discusses basic concepts and definitions, simple homogeneous stress states, deflections and stresses in beams, torques applied to shafts, stability of axially loaded columns, Hooke's generalised law, multidimensional stress and deformation analysis and yield criteria.

Teaching and working methods
The course is given during period 1 for I and period 3 for M. It consists of a theoretical part and laboratory work.

Examination

LAB2	Laboratory work	1 credits	U, G
TEN2	Written Examination	5 credits	U, 3, 4, 5

Grades

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

Other information

Supplementary courses: Solid Mechanics: The Finite Element Method

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Peter Schmidt

Examiner

Daniel Leidermark

Course website and other links

http://www.solid.iei.liu.se/Education/

Education components

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

Course literature

H. Lundh, Grundläggande hållfasthetslära, KTH, 2000 P-L. Larsson och R. Lundell, Exempelsamling i Hållfasthetslära, KTH, 2009 B Sundström (red): Handbok och formelsamling i hållfasthetslära, Inst. för hållfasthetslära, KTH, Stockholm 1999 (eller senare).

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.