SG1301 Mechanics, Addition Course 3.0 credits

Mekanik, påbyggnadskurs

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for SG1301 valid from Autumn 2009

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Recommended prerequisites: Linear algebra and geometry, differential calculus for one variable. Basic dynamics of a particle (SG1102).

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After passing the course the student should know how to:

- Identify and define given types of force systems,
- Analyze given force systems and simplify them to optimal form.
- Calculate the center of mass of systems of particles and rigid bodies.
- Calculate forces and positions of equilibrium for a mechanical system at rest.
- Analyze and write down mathematical model for problems in statics with mathematical and numerical methods and critically scrutinize the results.
- Present, in written and oral form, solutions of problems related to the course content.

Course contents

- Vector algebra and dimensional considerations.
- Force and moment of force (torque).
- Systems of forces; couples, connecting formulas, equipollent force systems
- Center of mass; systems of particles, rigid bodies, compound bodies.
- Equilibrium; conditions for equilibrium, 2D and 3D, friction.

Course literature

Nicholas Apazidis, Mekanik, Studentlitteratur 2004, ISBN 91-44-04245-0.

Examination

- INL1 - Assignments, 1.0 credits, grading scale: P, F
- TEN2 - Examination, 2.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

Hand in assignment.

Written exam.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.