

Syllabus

FY0002.1 Mechanics, 7.5 credits

Mekanik

The course is given as course independent of study programme

Syllabus discontinued 16 November 2006

Version 1 in Slukurs. Corresponds to version 1 in Ladok

Syllabus approved

17 October 2003

The version applies to students admitted from autumn 2004 to autumn 2007

The version is not a module version

Subjects

Physics/Technology

Education cycle

First cycle

Modules

Title	Code	Credits
Single module	0101	7.5

Advanced study in the main field

Grading scale

Pass / Failed

The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

Swedish

Prior knowledge

Linear algebra, 3 credits, and calculus of one variable, 6 credits, or equivalent.

Objectives

The aim of the course is to provide the student with

- knowledge of basic concepts in mechanics, in particular kinematics and the dynamics of particles and rigid bodies
- some knowledge of concepts in fluid mechanics and mechanical properties of materials
- ability to analyze and formulate mathematical models for mechanical problems, and experience in analytical and numerical problem solving
- practical skills in carrying out experiments, in investigating physical relationships through experimental work, and skills in oral and written presentation of experimental work
- some knowledge of the history and development of classical physics.

Content

Content Kinematics.

Newton's laws.

Particle dynamics: force, linear momentum, work and energy.

Dynamics of rigid bodies: torque, angular momentum, moment of inertia, work and energy. Oscillatory motion. Elasticity (scalar). Fluid mechanics (laminar flow).

Training in experimental work: handling of laboratory equipment, treatment of measurement data, and writing of reports.

Laboratory work: 1. Experimental problem solving 2. Project work.

Implementation

Lecturing and exercises ca 70 h

Labs (mandatory) ca 20 h

Written examination/course evaluation 5 h

Oral examination 1 h

The course also includes 8 home assignments (not mandatory).

Examination

Requirements for examination

Written and oral examination.

Passed tests and participation in compulsory parts.

- If the student fails a test, the examiner may give the student a supplementary assignment, provided this is possible and there is reason to do so.
- If the student has been granted special educational support because of a disability, the examiner has the right to offer the student an adapted test, or provide an alternative assessment.
- If changes are made to this course syllabus, or if the course is closed, SLU shall decide on transitional rules for examination of students admitted under this syllabus but who have not yet passed the course.
- For the examination of a degree project (independent project), the examiner may also allow the student to add supplemental information after the deadline. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

Additional information

- The right to take part in teaching and/or supervision only applies to the course date to which the student has been admitted and registered on.
- If there are special reasons, the student may take part in course components that require compulsory attendance at a later date. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

Responsible department

Department of Energy and Technology

Supplementary Information

Finalized by: Programnämnden för biosystemteknikprogrammet