



Faculty of Health, Science and Technology
Mechanical Engineering

Syllabus

Mechanics 1: statics

Course Code:	MSGB42
Course Title:	Mechanics 1: statics <i>Mekanik 1: statik</i>
Credits:	7.5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

Major Field of Study:
MTA (Mechanical Engineering)

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2021-09-03, and is valid from the Autumn semester 2021 at Karlstad University.

Prerequisites

Mathematics for Engineers, 7.5 ECTS credits, or admission to a study programme in Mechanical Engineering or Innovation and Design Engineering

Learning Outcomes

Upon the completion of this course, students should be able to:

- identify and use a structured approach to analyse one-, two-, and three-dimensional loads in static equilibrium,
- analyse two-dimensional isostatic truss structures in terms of load,
- analyse beams in terms of and transverse load and moment,
- calculate and identify the centre of gravity for a body,
- analyse problems that involve friction, and
- analyse a basic mechanics problem using a computer-based software.

Content

- Units and dimensional analysis
- Power systems
- Clearing and equilibrium of particles and rigid bodies
- Assembled structures
- Center of gravity and center of mass
- Area moment of inertia
- Distributed load and internal forces in beams
- Static friction

Reading List

See separate document.

Examination

Assessment is based on hand-in assignments and a written exam.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades

One of the grades U (Fail), 3 (Pass), 4 (Pass with some distinction) or 5 (Pass with distinction) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional information

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.