



Faculty of Health, Science and Technology
Mechanical Engineering

Syllabus

Design and innovation theories

Course Code:	MSGA26
Course Title:	Design and innovation theories <i>Design- och innovationsteorier</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 2025-02-18, and is valid from the Autumn semester 2025 at Karlstad University.

Prerequisites

Registered for Introduction to innovation and design engineering at Bachelor level, 7.5 ECTS credits, or equivalent

Learning Outcomes

The aim of the course is for students, upon completion, to be able to understand, discuss, analyse, and apply various aspects of idea management concerning innovation and design theory in relation to current research, methodology, and processes. The concepts generated in the projects conducted during the course should be based on a sustainable approach at all levels, in accordance with relevant parts of the UN's global sustainability goals.

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

- identify and reflect upon sustainability aspects of innovation,
- describe and give an account of the idea management process and its various components,
- consider sustainability perspectives when developing proposals for solutions,
- present results orally and in writing, using various visualisation techniques, and
- give arguments for and apply different sketching techniques and visualisation methods throughout a design process.

Content

The course includes a product development project completed in groups where students are introduced to research in innovation and design theory. The projects should also be linked to a relevant sub-goal among the UN's global sustainability goals. Methods are analysed and discussed. Furthermore, the focus is on advanced sketching, colour theory, and digital rendering as tools for various purposes throughout the different phases of the design process.

Instruction is in the form of lectures, literature studies, supervised projects, seminars, and independent work under supervision.

Reading List

See separate document.

Examination

Assessment is based on an oral group presentation, a group seminar, an individual written hand-in assignment including sketches and representations, and an individual reflection report.

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 Distinction (VG), Pass (G), or Fail (U) 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.