

Disruptive Technologies

Disruptive Technologies
6 credits

Programme course

TMKA09

Valid from: 2026 Spring semester

Determined by	Main field of study	
Board of Studies for Mechanical Engineering and Design	Design	
Date determined	Course level	Progressive specialisation
2025-08-28	Second cycle	A1N
Revised by	Disciplinary domain	
	Technology	
Revision date	Subject group	
	Design	
Offered first time	Offered for the last time	
Autumn semester 2018		
Department	Replaced by	
Institutionen för ekonomisk och industriell utveckling		

Course offered for

- Master of Science in Energy - Environment - Management
- Master of Science in Design and Product Development
- Master's Programme in Design

Prerequisites

Bachelor's degree, or equivalent level, within design, sustainability, management or a similar area.

Intended learning outcomes

On a re-design and engineering level only limited improvement of sustainability performance is possible. More substantial improvement may require totally new technological solutions, with accompanying societal and market transitions. Think of non-conventional energy in mobility, smart-grids, and bio-based economy. After the completed course the student shall be able to

- articulate the role of systems and actors in technology-related transitions
- describe and explain how and why disruptive technologies emerge and how they impact (and are impacted by) incumbent organizations as well as entrepreneurial start-ups.
- use mapping techniques to perform a system-level analysis of technology trends and their potential influence on design activities with a special emphasis on sustainability.

Course content

Students will analyze historical disruptive technologies and societal/market transitions, and do a case study with the aim of mapping a desired future sustainable transition, with its accompanying future tech.

Teaching and working methods

The course will be based on lectures and seminars. Students will explore case studies on disruptive technologies, and write their own case on a specific disruptive technology.

Examination

UPG3	Written case report	3 credits	U, 3, 4, 5
UPG2	Technology exploration	1.5 credits	U, G
UPG1	Reflection on literature	1.5 credits	U, G

Grades for examination modules are decided in accordance with the assessment criteria presented at the start of the course.

Grades

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

Other information

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.

Other

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

The planning and implementation of a course should correspond to the course syllabus. The course evaluation should therefore be conducted with the course syllabus as a starting point.

The course is campus-based at the location specified for the course, unless otherwise stated under “Teaching and working methods”. Please note, in a campus-based course occasional remote sessions could be included.