

Disruptive Technologies

Programme course

6 credits

Disruptive Technologies

TMKA09

Valid from:

Determined by
Board of Studies for Mechanical
Engineering and Design

Date determined

Main field of study

Design

Course level

Second cycle

Advancement level

A1X

Course offered for

- Design, Master's Programme

Prerequisites

Bachelor's degree. Successfully passed sustainable strategies and/or Studio 1. For non-program elective students, a related bachelor's degree or equivalent level, such as business, design or sustainability.

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

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

Course literature

The Innovator's Dilemma: The Revolutionary Book That Will Change the Way You Do Business

by Clayton M. Christensen. Supplemented with research articles.

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Mikael Axin

Examiner

Marie Bengtsson

Education components

Preliminary scheduled hours: 0 h

Recommended self-study hours: 160 h