

# 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