

# Disruptive Technologies

Programme course

6 credits

**Disruptive Technologies** 

**TMKA09** 

Valid from: 2021 Spring semester

**Determined by** Board of Studies for Mechanical Engineering and Design

Date determined 2020-09-29

## Main field of study

Design

#### Course level

Second cycle

### Advancement level

A<sub>1</sub>X

#### Course offered for

• 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

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

## Department

Institutionen för ekonomisk och industriell utveckling

# Director of Studies or equivalent

Mats Nåbo

#### **Examiner**

Marie Bengtsson

# **Education components**

Preliminary scheduled hours: 0 h Recommended self-study hours: 160 h

# Course literature

#### **Books**

The Innovator's Dilemma: The Revolutionary Book That Will Change the Way You Do Business by Clayton M. Christensen. Supplemented with research articles.

