



DEPARTMENT OF NEUROBIOLOGY, CARE SCIENCES AND SOCIETY

H1F3180 Bridging Science and Societal Needs Through Design Thinking, 4.5 credits (hec)

Integrering av vetenskap och samhällreliga behov genom Design thinking, 4,5 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus is approved by the The Committee for Doctoral Education on 2023-11-28, and is valid from Spring semester 2024.

Responsible department

Department of Neurobiology, Care Sciences and Society, Faculty of Medicine

Prerequisite courses, or equivalent

No prerequisite courses, or equivalent, demanded for this course.

Purpose & Intended learning outcomes

Purpose

The course aims to introduce Design thinking methodology and provide practical applications of Design thinking in improvement work and in research within complex contexts, from an interprofessional viewpoint. After the course, the student will be able to synthesize information from diverse knowledge traditions, and use a tools skillset in relevant aspects of research to a variety of societal contexts in multi-disciplinary collaborations.

Intended learning outcomes

After the course, the student will be able to:

- demonstrate in-depth insights in how Design thinking can be used to explore the possibilities and limitations of science, as well as its role in society and the human responsibility for its use (Module 1)
- identify relevant questions within a complex problem area,
- use Design thinking as a tool to address societal challenges through interdisciplinary collaboration (Module 2)

- demonstrate a critical, independent, creative and scientific rigor to identify and formulate questions; plan tasks within given time frames and equally, to assess such work of others (Module 3)
- demonstrate the ability to utilize Design thinking methods to identify needs of deepened knowledge within a field (Module 3)
- demonstrate the ability to make use of scientific approaches together with Design thinking in relation to specific societal challenges (Module 3)

Course content

The course content focuses on Design thinking methodology [1] as support for both developmental work and innovation in the surrounding societal and or scientific environment.

The course entail the following three modules:

Module 1 An introduction to Design thinking (0.5 hp)

Main content: An orientation to Design thinking theory and process methodology.

Module 2 Practical application of Design thinking in improvement work (0.5 hp)

Main content: The module focuses on experience based learning in groups, where students take on generically formulated societal challenges with Design thinking-process.

Module 3 Design thinking and innovation within research (3.5 hp)

Main content: The module focuses on Design thinking in relation to the research studies of the student. The students identify how Design thinking can be used to increase the quality and societal relevance of their research. Also, students identify different societal challenges the research studies can potentially address.

[1] Design thinking is a systematic, human-centered approach to solving complex problems within all aspects of life. The approach goes far beyond traditional concerns such as shape and layout. And unlike traditional scientific and engineering approaches, which address a task from the view of technical solvability, user needs and requirements as well as user-oriented invention are central to the process. Hasso Plattner Institute Academy, 2019.

Forms of teaching and learning

The course entails a problem oriented teaching and learning style, where students are provided with a pedagogy that enables them to take active responsibility for individual and group learning. In general, teaching will be performed through lectures, workshops and through supervision of individual tasks.

Language of instruction

The course is given in English.

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

Compulsory sessions are: 1. Participation in compulsory group work. 2. Oral presentations. 3. Provide feedback to at least one other student's work. Absence from the compulsory sessions or assessment seminar can be compensated through supplementary activity.

Forms of assessment

Active participation and presentation in Module 1 and 2. An individual written exam in Module 3. Each individual student needs to reach all intended learning outcomes to pass the course.

Course literature

Cross, N. (2011) *Design thinking - Understanding How Designers Think and Work*. Oxford: Berg Publishers.

Dorst, K. (2011) The core of 'design thinking' and its application. *Design studies* 32 (6), 521-532.

Plattner, H., Meinel, C & Leifer, L. (2016) *Design thinking Research: Making Design Thinking foundational*. New York: Springer Publishers

Recommended readings for discussion will be shared during the course.