

## Thinking with Representations

Tänkande med representationer  
6 credits

Single subject and programme course

769A23

Valid from: 2025 Spring semester

<b>Determined by</b>	<b>Main field of study</b>	
Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Cognitive Science	
<b>Date determined</b>	<b>Course level</b>	<b>Progressive specialisation</b>
2022-03-07	Second cycle	A1N
<b>Revised by</b>	<b>Disciplinary domain</b>	
Chairman of the Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Technology	
<b>Revision date</b>	<b>Subject group</b>	
2024-05-23	Technology from a Social Perspective	
<b>Offered first time</b>	<b>Offered for the last time</b>	
Spring semester 2023		
<b>Department</b>	<b>Replaced by</b>	
Institutionen för datavetenskap		

## Course offered for

- Master Programme in Cognitive Science

## Entry requirements

- Bachelor's Degree in Cognitive Science, Computer Science, Information Systems, Informatics, Information Technology, Programming, Psychology, Cognitive Neuroscience, or corresponding, equivalent to a Swedish Kandidatexamen
- English and Swedish corresponding to the level of English and Swedish in Swedish upper secondary education (Engelska 6 and Svenska 3)

## Intended learning outcomes

Upon completing the course, the student should at an advanced level be able to:

- apply basic concepts from distributed cognition to design thinking
- represent alternatives in a design space and reflect on the value of these representations in design
- use and develop tools and methods for representations and reflect on how the tools enable and limit design thinking
- reflect on how to systematically represent complex situations on a detailed as well as holistic level

## Course content

The course deals with methodological knowledge in design-oriented cognitive science with the following content:

- different roles that representations play in design
- use of various tools and methods to plan and apply these representations in a design process
- learning mechanisms through representations as well as the link between representations and the knowledge they offer
- general implications of placing representations at the center of the design process

## Teaching and working methods

The teaching consists of lectures, teaching sessions, design assignments, and seminars. In addition to this, the student must perform self-learning in this course.

## Examination

The course is examined by:

- written assignment in group, grading scale: UG
- active participation in seminars, grading scale: UG
- individual written assignment, grading scale: EC

For a pass in the final grade, pass on written assignment in group and active participation in seminars and E on the individual written assignment is required. Higher grades are based on the individual written assignment.

Detailed information can be found in the study guide of the course.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

## Grades

ECTS, EC

## Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

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.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.

### 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, or as a whole, 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.