

**SYLLABUS**

# **Ergonomics and cognitive 7.5 credits A0017A**

**Ergonomi och kognition**

**Course syllabus admitted: Autumn 2023 Sp 1 - Present**

**DECISION DATE  
2022-02-11**

# Ergonomics and cognitive 7.5 credits A0017A

## Ergonomi och kognition

### First cycle, A0017A

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	U G VG *	Industriell design	Other Subjects within Technology

## Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and completed the course, Design: process and method (D0030A) 15 credits, with at least the grade Pass, or equivalent knowledge.

## Selection

The selection is based on 1-165 credits.

## Course Aim

The overall objective of this course is to develop the course participant's knowledge and understanding for the different aspects of ergonomics (physical ergonomics, cognitive ergonomics, organisational ergonomics). Course aims are to develop the ability to conduct ergonomic assessments and analyses and implement that knowledge in the development of products, environments, and systems. The course participants should gain knowledge regarding the human cognitive processes and physical prerequisites in order to design products, environments, and systems based on human needs.

### Knowledge and understanding

The course participant should after the course be able to:

- demonstrate basic knowledge regarding human cognitive and physical prerequisites.
- demonstrate understanding regarding ergonomic analyses and assessments
- demonstrate understanding in the width of the area of industrial design engineering by demonstrating understanding of scientific theories and recent research in physical ergonomics and cognition

### Skills and abilities

The course participant should after the course be able to:

- demonstrate ability to use suitable methods to analyse and evaluate different aspects of ergonomics (work environment, processes, products, and cognitive aspects)
- display ability to design and develop products and environment based on human physical and mental needs and prerequisites as well as understanding and user experience

### Judgement and approach

The course participant should after the course be able to:

- demonstrate ability to critical analyse current design solutions as well as to critically reflect upon own and other design solutions from an ergonomics perspective

## Contents

- Cognition, perception, memory, learning, problem solving etc.
- The basics of usability
- Theory and practices in anatomy, physiology and anthropometry
- Theory and practices in human work science and ergonomics
- Theory and practices in ergonomic assessment methods
- Relevant research- and development within ergonomics

## Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The teaching is in the form of lectures intertwined with assignments and labs where the theoretical knowledge is used in practice. The course participant will also conduct literature studies and make use of scientific principles and theoretical knowledge in the design of products and environments by using sketches and mock-ups.

## Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Labs and assignments examine the course participant's knowledge and understanding of terms and theories within ergonomics and cognition and how these are used in practice. The assignments also examine the course participant's ability to analyse and design products and environments based on the user's needs and prerequisites. Detailed descriptions of assignments as well as criteria for grades are available in the study guide for the course.

## Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

## Remarks

Students must register to the courses themselves or contact the ETKS educational administration [eduetks@ltu.se](mailto:eduetks@ltu.se) not later than three days after the quarter commences. Failure to do so can result in the place being lost. This also applies to the students with a place guarantee.

## Course offered by

Department of Social Sciences, Technology and Arts

## Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Labs and assignments	U G VG *	7.5	Mandatory	A17	

## Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

## Last revised

by Director of Undergraduate Studies Daniel Örtqvist, Department of Social Sciences, Technology and Arts 2022-02-11

## Syllabus established

by Director of Undergraduate Studies Daniel Örtqvist, Department of Business Administration, Technology and Social Sciences 2017-02-15