

**SYLLABUS**

# **User interfaces: design and implementation 7.5 credits**

## **D0031A**

**Användargränssnitt: design och teknik**

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

**DECISION DATE**  
**2020-02-14**

# User interfaces: design and implementation 7.5 credits D0031A

## Användargränssnitt: design och teknik

### First cycle, D0031A

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

## Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

## Course Aim

The aim of the course is that the students will be able to design graphical user interfaces (GUIs) for specific purposes based on the user's prerequisites and needs as well as established scientific principles of usability, graphical design, and communication. The students will also be able to use tools containing elements of programming to realize, as well as test and communicate these graphical user interfaces. The students will be able to integrate graphics and technology in a way that will be experienced as a well functioning entity.

### Knowledge and understanding

The student should after the course be able to:

- demonstrate knowledge and understanding of how basic components in a user interface are designed and interact for usability, user experience, and communication with the user.
- demonstrate knowledge of procedures to realize graphical user interfaces
- demonstrate knowledge of basic programming as well as the importance of programming in development work
- demonstrate knowledge of inclusive design

### Skills and abilities

The student should after the course be able to:

- design holistic concepts and detailed solutions for graphical user interfaces with starting point in the user's needs, prerequisites, understanding, and user experience
- communicate designs of graphical user interfaces
- realize basic user interfaces with the help of appropriate tools
- show ability to identify a diversity of user needs and experiences in visual communication, symbols, design and interaction between humans and products

### Judgement and approach

The student should after the course be able to:

- discuss strengths and weaknesses in his or her own, as well as other students work, and show how feedback is used in order to develop the design
- demonstrate ability to reflect on inclusive design in regards to the results of a design project

## Contents

- Commonly occurring elements within user interface design
- Graphic design: communication, layout, tools for graphical design
- Interaction with user interfaces
- User experience
- Commonly occurring elements in imperative programming and web programming

## Realization

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

The course consists of lectures alternating with labs where the theoretical knowledge is turned into practice. The theoretical and practical knowledge will be used in a group assignment where the students work together with the development and improvement of graphical user interfaces.

The students will explore and design their own graphical user interfaces through sketches and simple interactive prototypes. The students will use their theoretical knowledge about graphical design and user experience in practice when designing graphical user interfaces. When an acceptable layout is decided upon, it is realized in an interactive prototype by the use of appropriate tools. The student's own, and also other interfaces, will be analysed and evaluated throughout the course.

## 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. The lab exercises and individual assignments are examined regarding the student's understanding of basic terms and theories within user interface design and programming and how these are used in practice. The ability to value graphical user interfaces and their adaptation to the user's needs are also examined.

The group assignments are examined regarding skills and abilities to:

Design, in group, and with the help of appropriate tools realizing graphical user interfaces relating to graphical design, communicative aspects, function, usability, and user experience according to the users prerequisites, as well as the ability to use knowledge in order to critically analyse and evaluate solutions. The student's ability to communicate the main aspects of the user interface in the group assignment is assessed in the group assignment as well as in oral presentations.

## 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 for the courses themselves, or contact 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 rule also applies to students with a guaranteed place.

## Course offered by

Department of Social Sciences, Technology and Arts

## Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Laboratory work	U G VG *	3.5	Mandatory	A16	
0002	Group project	U G VG *	3.5	Mandatory	A16	
0003	Presentation and attendance at seminars	U G#	0.5	Mandatory	A16	

## 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 Business Administration, Technology and Social Sciences 2020-02-14

## Syllabus established

by Director of Undergraduate Studies Bo Jonsson, Department of Business Administration, Technology and Social Sciences 2016-02-15