UNIVERSITY OF GOTHENBURG

DEPARTMENT OF APPLIED INFORMATION TECHNOLOGY

TIA405 Interaction Design and AI, 15 credits

Interaktionsdesign och AI, 15 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Applied Information Technology on 2023-06-01 to be valid from 2023-06-01, spring semester of 2023.

Field of education: Technology 100%
Department: Department of Applied Information Technology

Position in the educational system

This course is a compulsory course in the programme specified below.

The course can be part of the following programme: 1) Human-centered Artificial Intelligence Master's Programme (T2HAI)

Main field of studies	*Specialization*
Human-centered Artificial Intelligence	A1N, Second cycle, has only first-cycle course/s as entry requirements

Entry requirements

To be eligible for the course the student must have a Bachelor's degree (180 credits), and must also have completed the following courses or equivalent:

- Programming in a general programming language (at least 7.5 credits)
- Human-Computer Interaction (at least 7.5 credits)
- Artificial intelligence or machine learning (at least 7.5 credits),

Applicants must prove their knowledge of English: English 6/English B from Swedish Upper Secondary School or the equivalent level of an internationally recognized test, for example, TOEFL, IELTS, or alternatively a bachelor's degree from education held in English.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

- identify the factors that affect the interaction between users and IT-based products/systems with different levels of autonomy;
- identify different user perspectives that influence the development of interactive human-centered AI systems;
- explain how to gather information about the different actors' perspectives and needs in the design process of human-centered AI systems;
- identify important design principles suitable for developing human-centered AI systems;
- explain how to design a system that is reliable, secure, and trustworthy;

Competence and skills

- design a human-centered AI system that is reliable, secure, and trustworthy;
- carry out analysis, evaluation, and critique of an interactive product/system from an human-centered AI perspective;

Judgement and approach

- critically reflect on the balance between autonomy and user control in human-centered AI systems;
- reason about different positions to designing and evaluating sustainable human-centered AI systems.

The course is sustainability-related, which means that at least one of the learning outcomes clearly shows that the course content meets at least one of the University of Gothenburg's confirmed sustainability criteria.

Course content

Interaction design is cross-disciplinary and students learn how to involve the right people, and how to collect information from relevant stakeholders. The course teaches interaction design with a focus on HCAI systems, i.e. where the system has some degree of autonomy. The course aims to give students the tools and skills to be able to carry out analysis, design, and evaluation of AI systems from a human-centered perspective. It will be based on, on the one hand, giving people control over how a system behaves, and on the other hand giving the system control over itself. As society is progressively infused with AI systems, we must take concrete steps into making sure they are designed from a human-centered perspective.

Sub-courses

1. **Theory on Interaction Design and AI** *(Teori om interaktionsdesign och AI),* 6 credits
   Grading scale: Pass (G) and Fail (U)
   Module 1 introduces theories about interaction design, human-centered design, and design from a human-centered AI perspective. The students read course literature, and participate in seminars.

2. **Interaction Design and AI in Practice** *(Praktisk interaktionsdesign och AI),* 6 credits
   Grading scale: Pass (G) and Fail (U)
   Module 2 consists of group project work and aims to carry out design projects to practice the theoretical knowledge from module 1. Students practice analysis, design and evaluation, as well as assessment and critical skills around autonomy and user control.

3. **Methods in Interaction Design and AI** *(Metoder inom interaktionsdesign och AI),* 3 credits
   Grading scale: Pass (G) and Fail (U)
   Module 3 consists of reflective work on how to conduct human-centered design of interactive systems based on human-centered AI.

Form of teaching

The course will use lectures, seminars and project work.

Language of instruction: English

Assessment

Theory on Interaction Design and AI

This module is assessed through a written exam.

Interaction Design and AI in Practice

This module is assessed using project presentations and opposition.

Methods in Interaction Design and AI

Module three is assessed using a video submission.

If a student who has twice received a failing grade for the same examination component wishes to change examiner ahead of the next examination session, such a request should be made to the department in writing and should be approved by the department unless

there are special reasons to the contrary (Chapter 6 Section 22 of the Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg for study support for students with disabilities, the examiner may, where it is compatible with the learning outcomes of the course and provided that no unreasonable resources are required, decide to allow the student to sit an adjusted exam or alternative form of assessment.

In the event that a course has ceased or undergone major changes, students are to be guaranteed at least three examination sessions (including the ordinary examination session) over a period of at least one year, but no more than two years after the course has ceased/been changed. The same applies to internships and professional placements (VFU), although this is restricted to just one additional examination session.

Grades

The grading scale comprises: Pass (G) and Fail (U).
To get a Pass grade for the whole course, a student must get a Pass grade for all parts of the examination.

Course evaluation

After completion, the course will be evaluated by the students. The results of theevaluation are reported to the director of studies and discussed with the students. Asummary of the evaluation results together with the suggestions for improvement is tobe made available to students and teachers.

Additional information

The course meets the following sustainability criterion confirmed by the University of Gothenburg:

9. Planning and design.
How community planning and product and service design can influence human well-being and human impact on the natural environment.