UNIVERSITY OF GOTHENBURG

DEPARTMENT OF APPLIED INFORMATION TECHNOLOGY

TIA400 Introduction to Human-centered AI, 15 credits

Introduktion till Human-centered 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

- describe and compare different perspectives on human-centered AI;
- describe the implications of AI to the future of work, including learning, decision-making, innovation and governance;

Competence and skills

- use machine learning methods on structured and unstructured data;
- analyze implications of AI systems in the organizational setting;

Judgement and approach

- reflect on machine learning practice;
- discuss tensions between human-centered and technology-centered approaches to AI;
- critically reflect on the perspectives of human-centered AI presented in the course.

Course content

The course reviews various perspectives on AI practice, its history, and approaches to development. AI business ecosystem is reviewed, and professional identity is examined. The technological primacy of the AI field is problematized. The participants are made aware of the multitude of perspectives on HCAI, provided an overview of the MSc program, and potential learning tracks are established.

Next in the course, the socio-technical perspective is reviewed. AI technologies have a profound effect on organizations in all sectors (private, public, and non-profit). The opportunities and challenges are drawn from case studies to understand how AI will affect the future of organizations and society. Such opportunities as hybrid learning and upskilling, generative AI design, innovation mechanisms, and data network effects, are discussed in the context of organizational transformation.

Overall, the course gives theoretical and empirical perspectives on human-centered AI in organizations and society.

Sub-courses

1. **Background and Perspectives** *(Bakgrund och perspektiv),* 6 credits

   Grading scale: Pass (G) and Fail (U)

   In the first module, the course introduces the perspectives on human-centered artificial intelligence practice and discusses the history and current state of the field.

2. **The Implications of AI on Humans and Organizations** *(Konsekvenser av AI för människor och organisationer),* 6 credits
   Grading scale: Pass (G) and Fail (U)
   The second module reviews the AI-enabled business models and market innovations, Automation & Augmentation, Innovation & Generativity.

3. **Methods** *(Metoder),* 3 credits
   Grading scale: Pass (G) and Fail (U)
   In the last module, the course introduces 1) approaches to hands-on machine learning and 2) an overview of the methods for the analysis of organizational consequences of AI.

Form of teaching

The course includes lectures, seminars, workshops and group work.

Language of instruction: English

Assessment

Background and Perspectives

This module is assessed through an individual exam and a student-led lecture.

The Implications of AI on Humans and Organizations

This module is assessed through group work where students organize and lead a seminar on organizational effects of AI followed by a summative presentation of their work.

Methods

This module is assessed through a group project. If a student is prevented from taking part in the group work for a legitimate reason of absence (e.g., medical condition, caretaking responsibilities), the examiner may decide to provide an alternative form of examination.

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).
In order to get a Pass for the whole course, a student must get a Pass for all parts of the examination.

Course evaluation

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