ÖREBRO UNIVERSITET

Human-Machine Interaction (3 credits)

Människor-Maskin Interaktion (3 högskolepoäng)

Course Code/Codes	50DT065
Subject Area	Computer Science
School/equivalent	NT
Valid from	HT2023
Approved	2023-12-04
Revised	
Approved by	Head of School
Translation to English, date and signature	fk

1 Course content

This course provides an introduction to Human-AI Teaming as a special area in Human-Machine Interaction. It focuses on topics relevant for collaboration between humans and artificial intelligence systems. The course covers theoretical foundations and modern practical applications.

2 Outcomes

2.1 The course in relation to the doctoral programme

The course shall primarily refer to the following intended learning outcomes for third-cycle courses and study programmes as described in the Higher Education Ordinance, i.e. the doctoral student shall demonstrate:

Knowledge and understanding
- broad knowledge and systematic understanding of the research field (part of outcome 1)
- familiarity with the methods of the specific field of research in particular (part of outcome 2)

Competence and skills
- the capacity for scholarly analysis and synthesis (part of outcome 3)
- the ability to review and evaluate research and other qualified tasks (part of outcome 4)
  the ability to identify the need for further knowledge (outcome 7)
- the capacity to support the learning of others (part of outcome 8)

Judgement and approach
- intellectual autonomy and disciplinary rectitude (part of outcome 9)
- specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used (outcome 10)

The intended learning outcomes are listed in the same order as in the general syllabus for the programme.

2.2 Intended course learning outcomes

To obtain a passing grade, the doctoral student shall demonstrate:

Knowledge and understanding
- broad knowledge on up-to-date approaches and components for natural interaction between humans and virtual agents or robots
- the ability to report on promises and challenges related to human-robot collaboration

Competence and skills
- the competence to review scientific texts on advanced topics in Human-Robot Cooperation
- the ability to design interaction interfaces between humans and agents appropriate for their respective purpose.

Judgement and approach
the ability to reflect on principles of good interaction design
the ability to evaluate interaction interfaces between humans and agents (robots, AI)

3 Reading list and other teaching material

The following course readings and teaching material will be used on the course:

Students select a topic for their seminar presentation/report; a nucleus of uptodate literature will be provided depending on the selected topic.

Bartneck, C., Belpaeme, T., Eyssel, F., Kanda, T., Keijsers, M., & Sabanovic, S. (2020). *Human-Robot Interaction – An Introduction*. Cambridge: Cambridge University Press.

4 Teaching formats

Teaching on the course takes the following format:

Introductory lecture(s), followed by a sequence of seminars with student presentations. The number of seminars is adapted to the number of participating PhD students.

5 Examination

The course is assessed through an examination consisting of the components listed below. The individual components are not graded separately but together they provide the basis for assessment and grading.

1. a written examination
2. an oral presentation

6 Grades

Examinations on third-cycle courses and study programmes are to be assessed according to a two-grade scale with either of the grades 'fail' or 'pass' (local regulations).

The grade shall be determined by a teacher specifically nominated by the higher education institution (the examiner) (Higher Education Ordinance).

To obtain a passing grade on examinations included in the course, the doctoral student is required to demonstrate that he/she attains the intended course learning outcomes as described in section 2.2. Alternatively, if the course consists of multiple examinations generating credit, the doctoral student is required to demonstrate that he/she attains the outcomes that the examination in question refers to in accordance with section 5.

A student who has failed an examination is entitled to a retake.

If an examination consists of several examination components, and a student fails an examination component, the examiner may, as an alternative to a retake, set a make-up assignment with regard to the examination component in question.

A doctoral student who has failed an examination twice for a specific course or course element is entitled, upon his/her request, to have another examiner appointed to determine the grade.

7   Admission to the course

7.1   Admission requirements

To gain access to the course and complete the examinations included in the course, the applicant must be admitted to a doctoral programme at Örebro University.

7.2   Selection

Selection between applicants who have been admitted to doctoral programmes at Örebro University and who otherwise meet the admission requirements as listed above is made according to the following order of precedence:

1. Doctoral students admitted to the CoAIRob Research School.
2. Doctoral students admitted to Computer Science

If no other selection criteria are specified in this section, priority shall be given to applicants with a lower number of course credits left before the award of their degree over applicants with a higher number of remaining course credits. Should two or more students have equal number of credits, selection will be done through the drawing of lots. This also applies within any selection groups listed unless otherwise stated.

7.3   Other applicants than doctoral students admitted at Örebro University

Other applicants than doctoral students admitted at Örebro University may be given access to the course on the grounds of provisions for and/or agreements regarding contracted courses, joint degrees, national graduate schools or cooperation in other respects with other universities.

Any decisions on what such other applicants may be given access to the course are made separately and on the basis of the provisions and/or agreements that occasion the student to apply for the course.

For participation in the course in other respects, the same provisions shall apply as for doctoral students admitted to Örebro University.

8 Transfer of credits for courses, study programmes and other experience

Provisions on the transfer of credits can be found in the Higher Education Ordinance and on the university's webpage.

9 Other information

The course will be given in English

Transitional provisions