1 Course content

The course aims to develop the doctoral student in the field of knowledge representation in machines, including practices, history and philosophy.

The course includes:
- Seminar discussion of the required reading;
- Experiment with a modified version of the Turing test and with interaction between intelligent agents in a game-theoretical context. The student will also explore these concepts by conducting similar exercises with undergraduate students;
- Empirical studies on the topic: "How intelligent are modern IT systems/services?"; How to present/communicate information/knowledge to users? Surveys are conducted preferably in teaching environments.

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)

Competence and skills
- the capacity for scholarly analysis and synthesis (part of outcome 3)
- the capacity to review and assess new and complex phenomena, issues and situations autonomously and critically (part of outcome 3)
- the capacity to contribute to social development both through research and education and in some other qualified professional capacity (part of outcome 8)
- the capacity to support the learning of others (part of outcome 8)

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:

1) Fundamental knowledge of the history, philosophy, and techniques pertaining to knowledge representation in machines.
2) Understanding the similarities and differences between communication and knowledge transfer between machine-machine, machine-human and human-human.
3) Ability to apply these ideas in complex situations where more than two parties are involved, e.g. computer-supported collaboration in teams.
4) Ability to apply these concepts in an educational context.

3 Reading list and other teaching material

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

**Required Reading:**

**Classic Articles**


**Modern Subjects**


**Homepages/blogs**


4  Teaching formats

Teaching on the course takes the following format:

- Lectures (required)
- Individual and group work
- Three (3) discussion seminars (required)
- Final review with discussant (required)

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.

- Three (3) discussion seminars; oral analysis of the course literature.
- Assessment of doctoral paper; written and oral assessment of fellow research student’s paper.
- Final seminar; presentation and defence of the one’s own paper (must be in English) at a seminar with an external discussant.

For examinations consisting of several examination components, the following applies: If during the course it is concluded that a doctoral student is unable to complete a certain examination component, the examiner may set a substitute assignment provided that circumstances do not reasonably allow for the course component to be completed at a later date during the run of the course.

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) Applicants from Informatics
2) Research students admitted in the Research School in Technology-Mediated Knowledge Processes
3) Applicants admitted to research study programmes at Örebro University, where research students with a higher number of credits in research education are given priority.

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.

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 language of tuition may be English or Swedish, depending on the participants’ language skills. The literature is mainly in English.

Research students who have been admitted to a course have the right to receive tuition and/or supervision for the duration of the time period specified for the particular course to which they were accepted. After that, the right to receive tuition and/or supervision expires.

**Transitional provisions**