



Faculty of Social Sciences

## PSYE61, Psychology: Artificial Intelligence and Psychology, 15 credits

*Psykologi: Artificiell intelligens och psykologi, 15 högskolepoäng*  
First Cycle / Grundnivå

---

### Details of approval

The syllabus was approved by the board of the Department of Psychology on 2023-11-14. The syllabus comes into effect 2023-11-14 and is valid from the autumn semester 2024.

### General information

The course is offered as a freestanding course in the first cycle and may be included in a Degree of Bachelor specialising in psychology or in a degree programme in accordance with the programme syllabus.

*Language of instruction:* English

*Main field of study*

*Specialisation*

Psychology

G1N, First cycle, has only upper-secondary level entry requirements

### Learning outcomes

On completion of the course, the students shall be able to

#### Knowledge and understanding

- demonstrate basic knowledge of how artificial intelligence (AI) can simulate cognitive phenomena.
- demonstrate basic knowledge of symbolic artificial intelligence and how the behaviour created by the AI relates to cognitive phenomena.
- demonstrate basic knowledge of how abstract, deep and biological neural networks function and how their behaviour relates to cognitive phenomena and the functions of brain.

- demonstrate basic knowledge of language models and how they can be connected to phenomena related to human language.
- demonstrate basic knowledge of how machine learning can be used to analyse behaviour and brain data.

### Competence and skills

- demonstrate the ability to use machine learning to analyse behaviour and brain data.
- demonstrate the ability to use language models in psychological experiments.

### Judgement and approach

- demonstrate the ability to discuss similarities and differences between artificial and natural cognition.
- demonstrate the ability to assess limitations and potential of AI methods.
- demonstrate the ability to discuss the relationship between artificial and natural cognition.
- demonstrate the ability to assess risks, dangers and ethical problems connected to prevailing and future AI applications in relation to individuals and society as a whole.
- demonstrate understanding of the applications of AI in wider society.

### Course content

The course consists of two modules:

#### **Module 1 Artificial and Natural Cognition (10 credits)**

*a. Theoretical understanding (7 credits, Pass, Pass with Distinction or Fail)*

The module provides basic knowledge of symbolic AI, neural networks, deep neural networks, biological neural networks, language models, transformers, machine learning for brain data.

*b. Application (3 credits, Pass or Fail)*

The module examines basic applications for neural networks, memory and deep learning as they relate to analyses of language and images, as well as how linguistic data can be analysed quantitatively using language models.

#### **Module 2. Project Work (5 credits, Pass or Fail)**

The module consists of project work, in which the students define an issue connected to AI and psychology, carry out an analysis, data collection or literature survey. The project is presented in writing (5 credits) and in an oral presentation (0 credits).

### Course design

The teaching consists of lectures, group exercises, laboratory sessions/demonstrations, seminars and project work. All components of teaching except the lectures are based on active participation and therefore are compulsory. Absence from compulsory components can be compensated for with supplementary components according to instructions from the course lecturer.

## Assessment

Assessment is based on a written examination, written and oral presentations, active participation in compulsory components and a project report. Three exam sessions are offered in connection with the course: a first examination, a resit close to the first examination and a second resit in the same year. Within a year of the end of the course at least two additional examination opportunities are offered on the same course content. After this, further re-examination opportunities are offered but in accordance with the current course syllabus.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a long-term disabled student with a form of examination equivalent to that of a student without a disability.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

## Grades

Grading scale includes the grades: Fail, Pass, Pass with distinction

Grades awarded for the course and separate modules are Fail (U), Pass (G) or Pass with distinction (VG).

The student's grade is assessed based on how well the student fulfils the learning outcomes of the course.

Regarding the grade of Fail, the student has not fulfilled the learning outcomes of the course.

For the grade of Pass, the student must fulfil the learning outcomes specified for the course. For the grade of Pass with Distinction, it is required, in addition, that the learning outcomes are fulfilled particularly well.

The grades awarded for compulsory teaching components are Pass or Fail. For the grade of Pass, the student must show acceptable results. For the grade of Fail, the student has shown unacceptable results.

To receive the grade of Pass for the whole course, at least the grade of Pass is required in all modules and components. To receive the grade of Pass with Distinction for the whole course, the grade of Pass with Distinction is required in a majority of the total credits for the course based on the modules/components that can apply the grades Fail/Pass/Pass with Distinction.

At the start of the course, students are informed about the learning outcomes stated in the syllabus and the grading scale, and how it is applied in the course.

## Entry requirements

General requirements and studies equivalent of courses Social Studies 1b or 1a1+1a2 from Swedish Upper Secondary School.