

SYLLABUS

Intelligent Technology of the Future - Cognitive Science 15 credits P0008A

Framtidens intelligenta teknik - Kognitionsvetenskap

Course syllabus admitted: Spring 2018 Sp 3 - Autumn 2018 Sp 2

**DECISION DATE
2017-06-01**

Intelligent Technology of the Future - Cognitive Science 15 credits P0008A

Framtidens intelligenta teknik - Kognitionsvetenskap

First cycle, P0008A

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	U G#	Teoretisk neurovetenskap	Other Subjects within Technology

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language +

Swedish upper secondary school courses Mathematics 3b/3c , (specifik entry A4).

Or:

Swedish upper secondary school courses Mathematics C, (specifik entry 4)

Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

Examiner

Tore Ärlemalm

Course Aim

After finalising the course the student shall be able to explain and understand the brain from a cognitive and neuroscientific perspective, as well as having learnt relevant methods in artificial intelligence. The course is for engineers, natural scientists, behavioural scientists, and others who want to learn about a highly topical and exciting field of research, applying to advanced intelligent machines and Brain-Machine-Interaction.

Contents

In the course we study the information processing in the brain, implying perception, learning, memory, reasoning, executive processes, language, and emotions. These mental processes are modelled with artificial neural networks. In the course we ask the questions: How does the mind work? and How can it be modeled and simulated?

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Internet course, comprising individual studies, assignments, laboratory sections and internet seminars.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Assignments, laboratory sections and internet seminars.

Remarks

Students must register for the courses themselves, or contact ETKS educational administration eduetks@ltu.se, not later than three days after the quarter commences. Failure to do so can result in the place being lost. This rule also applies to students with a guaranteed place.

Taught in Swedish and English.

Associated courses in the series Intelligent Technology are:
P0008A Intelligent Technology of the future – Cognitive Science;
P0012A Intelligent Technology – Computation & the Brain;
P0065A Intelligent Technology – Computational Neuroscience I;
P7045A Intelligent Technology – Neuroscience & Mathematics;
P7010A Intelligent Technology – Cyborgs & Humanoid Robots;
P0034A Intelligent Technology – Computational Neuroscience;
P7023A Intelligent Technology – Scientific Work.

Overlap

The course P0008A is equal to ARP111

Literature. Valid from Autumn 2014 Sp 1

Purves, D, et al. (2013). Principles of Cognitive Neuroscience. 2nd Edition.
Additional literature will be added according to the teacher's instructions.

Course offered by

Department of Business Administration, Technology and Social Sciences

Items/credits

Number	Type	Credits	Grade
0006	Assignment report and laboratory work	15	U G#

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Director of Undergraduate Studies Daniel Örtqvist, Department of Business Administration, Technology and Social Sciences 2017-06-01

Syllabus established

by Department of Human Work Sciences 2007-02-28