

**SYLLABUS**

# **Intelligent Technology - Computational Neuroscience 15 credits P7034A**

**Framtidens intelligenta teknik - Komputationell neurovetenskap**

**Course syllabus admitted: Spring 2018 Sp 3 - Spring 2019 Sp 4**

**DECISION DATE  
2017-06-01**

# Intelligent Technology - Computational Neuroscience 15 credits P7034A

## Framtidens intelligenta teknik - Komputationell neurovetenskap

### Second cycle, P7034A

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

## Entry requirements

Minimum of 90 ECTS including P0008A Intelligent Technology of the Future - Cognitive Science and P0012A Intelligent Technology - Computation & the Brain or P7045A Intelligent Technology - Neuroscience & Mathematics. Alternatively, corresponding knowledge acquired by university studies and working experience.

## Selection

The selection is based on 30-285 credits

## Examiner

Peter Bengtsson

## Course Aim

Advanced knowledge in Theoretical Neuroscience. The student is to deepen knowledge in cognitive and biological neuroscience, as well as train to simulate information processes of the brain. The course is for engineers, behavioural scientists, natural scientists, and others who want to learn about a highly topical and exciting field of research, applying to advanced intelligent machines and man-machine systems.

## Contents

Elaborate upon the course content of P0008A Intelligent Technology of the Future – Cognitive Science and P0012A Intelligent Technology – Computation & the Brain. Independent studies guided by supervision concerning: neuroscience-based models for perception, cognition, emotion, action, and motor control; as well as artificial neural networks and mathematical models to simulate information processes of the brain.

## 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.

## 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 and laboratory work.

## Remarks

Students must register for the courses themselves, or contact ETKS educational administration [eduetks@ltu.se](mailto: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.

## Literature. Valid from Autumn 2014 Sp 1

Squire, L. R. et al. (2013). Fundamental Neuroscience. 4th 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
0004	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 Institutionen för arbetvetenskap 2010-02-19