



DD2401 Neuroscience 7.5 credits

Neurovetenskap

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for DD2401 valid from Spring 2009

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Biotechnology, Electrical Engineering

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

To provide a basic knowledge and understanding of the biology of the nervous system, from the function of the single nerve cell to the integrative control of cognitive and other higher brain functions. Also the neuroinformatics field is introduced.

Following the course the student should be able to:

- know and describe the micro- and macrostructure of the nervous system
- describe the whole chain of structures and their functions, from single ion channels in the cell membranes to sensory, motor and cognitive functions
- summate the scientific bases for how to achieve knowledge about the different parts of the nervous system
- evaluate and describe the content in scientific articles within the fields of neuroscience and neuroinformatics.

Course contents

The function of the single nerve cell at the molecular and cellular level; the organization of the nervous system and its neuronal networks; neural control of simple and more complex functions; the most common neuroinformatics approaches. The course comprises lectures, practical exercises, and a project within the field of neuroinformatics.

Course literature

Purves, Augustine, Fitzpatrick, Hall, LaMantia, McNamara, Williams (Eds) **Neuroscience** 4th ed. Sinauer Associates inc. publishers 2008 (ISBN 978-0-87893-697-7).

Examination

- LAB1 - Laboratory Work, 1.0 credits, grading scale: P, F
- TEN1 - Examination, 6.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

Practical exercises, project and written exam.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.