FSK3511 Cellular Biophysics II 6.0 credits

Den biologiska cellens fysik II

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 FSK3511 valid from Autumn 2014

Grading scale

Education cycle

Third cycle

Specific prerequisites

Enrolled PhD student.

Language of instruction

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

Intended learning outcomes

After the course the students should:

- have a good knowledge about the electrical properties of living cells
- be well familiar with the mathematical models describing membrane graded and action potentials
- have a deep insight into the modern electrophysiological measurement techniques

Course contents

The course is given as a series of seminars where the participants make presentations and take an active role in discussions. The topics to be discussed: electrical properties of the cells, action potentials, models describing potentials generated in the cells (core conductor model, cable model, Hodgkin-Huxley model), propagation of electrical signals in neurons, voltage gated ion channels.

Disposition

Seminars: 24 h
Laboratory exercises: 8 h

Course literature

Weiss T. F. Cellular Biophysics, volume 2, MIT Press, 1997

Examination

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.

- INL1 - Assignments, 1.5 credits, grade scale: P, F
- LAB1 - Laboratory Work, 1.5 credits, grade scale: P, F
- TEN1 - Examination, 3.0 credits, grade scale: P, F

Other requirements for final grade

INL1 - hand-in assignments, 1.5 university credits, grading P/F.
FÖR1 - deepening task, 1.0 university credits, grading P/F.
LAB1 - laborations, 1.5 university credits, grading P/F.
SEM1 - seminars, 1.0 university credits, grading P/F.
SEM2 - seminar, 1.0 university credits, grading P/F.

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.