



**Karolinska  
Institutet**

Course syllabus for

## **Neuroscience, 8.5 credits**

Neurovetenskap, 8.5 hp

This course syllabus is valid from autumn 2019.

Please note that the course syllabus is available in the following versions:

[Autumn2018](#) , [Autumn2019](#)

Course code	1BI042
Course name	Neuroscience
Credits	8.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedicine
Level	G2 - First cycle 2
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Neuroscience
Decided by	Programnämnden för biomedicinprogrammen
Decision date	2018-03-23
Revised by	Programme committee for study programmes in biomedicine
Last revision	2019-03-27
Course syllabus valid from	Autumn 2019

### **Specific entry requirements**

At least grade pass (G) at the courses Introduction to biomedical science; General and organic chemistry; Cell-, stem cell and developmental biology and Genetics, genomics and functional genomics, and at least grade pass (G) at the part Biochemistry (5 credits) of the course Biochemistry, at the Bachelor's programme in Biomedicine.

### **Objectives**

Upon completion of the course, the student should be able to:

Regarding knowledge and understanding

- describe the organisation and development of the nervous system,
- describe the structure, function and modes of communication of cells in the nervous system,
- describe the function and organization of sensory systems,
- describe the function and organisation of motor systems,
- describe how integrative and cognitive functions are controlled, and relate these functions to neuronal structures.

Regarding competence and skills

- identify important structures in images and models of the nervous system,
- critically evaluate and discuss established knowledge and novel findings in the field of neuroscience.

Regarding judgement and approach

- reflect over the relation between structure and function in motor, sensory and cognitive systems,
- evaluate results from commonly used neurophysiological experiments.

## Content

The course focuses on mechanisms and principles in neuroscience within the following areas: cellular neurobiology, neuronal communication, development of the nervous system, anatomy of the nervous system, organisation and function of sensory systems including vision, hearing, mechanosensation, pain, taste and smell, organisation and function of motor systems, principles of higher functions such as cognition, language, memory and emotions. The course also introduces commonly used research methods in neuroscience.

The course is divided into the following parts:

### Practical features, 4.0 hp

Grading scale: GU

Laboratory practices.

### Integration of the course content, 4.5 hp

Grading scale: VU

## Teaching methods

Teaching will be in the form of lectures and laboratory practicals.

## Examination

Practical features (4 credits). The examination consists of three oral exams and participation in laboratory practicals. Graded Fail/Pass.

Integration of the course contents (4.5 credits). The examination consists of a written exam. Graded Fail/Pass/Pass with distinction.

The final grade for the whole course is based on the grade for the part Integration of the course contents. To pass the whole course (grade pass or above), the grade pass must have been obtained for the other parts on the course.

Compulsory participation

Laboratory practicals and seminars are compulsory. The course director assesses if and, in that case, how absence can be compensated. Before the student has participated in all compulsory parts or compensated absence in accordance with the course director's instructions, the student's results for respective part will not be registered in LADOK.

Limited number of examinations or practical training sessions

Students who have not passed the regular examination are entitled to participate in five more examinations. If the student has failed six examinations/tests, no additional examination or new admission is provided.

The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is regarded as an examination. An examination for which the student registered but not participated in, will not be counted as an examination.

If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus's regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the course etc. Content and learning outcomes as well as the level of expected skills, knowledge and abilities may not be changed, removed or reduced.

## **Transitional provisions**

After each course occasion there will be at least six occasions for the examination within a two-year period from the end of the course.

## **Other directives**

The course language is English.

Course evaluation will be carried out in accordance with the guidelines established by the Board of Higher Education.

Oral evaluation in the form of course council meetings will be carried out during the course.

## **Literature and other teaching aids**

*Purves, Dale*

### **Neuroscience**

Sixth edition. : Sunderland, Massachusetts : Oxford University Press, [2018] - 790 pages

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