



**Karolinska  
Institutet**

Course syllabus for

## **Examination - Physiology 1, 3 credits**

Tema undersökning - Fysiologi 1, 3 hp

This course syllabus is valid from autumn 2018.

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

[Autumn2015](#) , [Autumn2017](#) , [Spring2018](#) , [Autumn2018](#) , [Autumn2022](#)

Course code	1FY015
Course name	Examination - Physiology 1
Credits	3 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Not applicable
Level	GX - First cycle
Grading scale	Fail (U) or pass (G)
Department	Department of Physiology and Pharmacology
Decided by	Programnämnd 3
Decision date	2015-05-04
Revised by	Education committee NVS
Last revision	2018-04-13
Course syllabus valid from	Autumn 2018

### **Specific entry requirements**

Physical Education 1, Mathematics 2a / 2b / 2c, Natural Sciences 2, Social Sciences 1b / 1a1+1a2 (field specific entry requirements A15). Or: Physical Education A, Mathematics B, Natural Sciences B, Social Sciences A (field specific entry requirements 17).

### **Objectives**

The aim of the course is to introduce the subject physiology with a specialisation in neurophysiology, muscle physiology, motor function and to give students an opportunity to develop basic theoretical knowledge in physiology to become part of an integrated clinical thinking. The course also aims at stimulating a reflecting and scientific attitude.

Learning outcomes

At the end of the course, the student should : be able to describe and understand the physiological function - in different sensory systems and in the autonomous nervous system; in various types of muscle cells; concerning muscle function, motor functions of the brain stem and the cerebellum and higher functions such as memory and sleep, be able to describe/account for/explain concepts in the various component parts and relate them to a physiological context, have developed an understanding of

how the body can provide, on the basis of future impressions to our a consciousness, how the body's own pain relieving can be activated through sensory stimulation, how the body can utilise motor programs, how a sensory motor integration may be done, how memory functions and sleep patterns may be affected by pain and stress.

## Content

Physiology 1 comprises teaching about:

- The physiology of the neuron - osmosis, filtration, diffusion, onset of rest and action potentials
- Sensory physiology - general principles, feeling, vision, hearing, smell, taste, the vestibular nerve; Introduction to pain physiology
- Autonomous nervous system - function in peripheral and central parts, importance for our survival
- Muscle physiology, muscle fibres, muscle receptor, function in skeleton, cardiac and smooth musculature; sarcotubular system, activation and contraction process, the energy system and metabolism of the muscle, regulation of muscle force, muscle fatigue
- Reflectors and motor control
- The higher functions of the nervous system - emotions, wakefulness and sleep, interpretation functions, speech and writing ability, learning and memory, consolidation, abstract thinking and consciousness

The course is included in the theme Man in motion of the Study Programme in Physiotherapy, and is given directly after the course Theme Examination - Anatomy, 7,5 credits.

## Teaching methods

The teaching is based on a problem-oriented and collaborative approach to learning in which the tasks provide opportunities for the student to take active responsibility for their learning. The used teaching methods are lectures, own work with study questions and a laboratory session. The laboratory session under the heading of reflectors and sensory functions aims at carrying out practical experiments based on theoretical parts just treated during the lectures. As a support for the implementation of the laboratory programme, a laboratory compendium is used.

In addition to this, the student is expected to acquire a large part of the knowledge through theoretical self-study.

## Examination

The course is examined with a written examination integrated with the course Tema undersökning - Anatomi, moment 1 Nervsystemets anatomi.

A student who are not approved after the ordinary examination opportunity are entitled to participate in further five examinations. If the student has completed six failed examinations/tests, no further examination opportunity will be given. As an exam opportunity, the times are counted when the student participated in one and the same exam. The submission of a blank written test is counted as an examination opportunity. Examination opportunity to which the student was enrolled but did not participate is not counted as an examination opportunity.

In the case of failed results of regular examination, the student is given the opportunity to return to a re-examination in the same semester. After that, the student is given the opportunity to be counted on two occasions per semester, in connection with the regular and rest occasion (rest exam), the coming semesters.

## **Transitional provisions**

An examination will be made available for a period of one year in the event of the course being discontinued or a new course syllabus being devised.

## **Other directives**

Course evaluation is conducted according to the guidelines established by the Board of Education at KI

## **Literature and other teaching aids**

### **Fysiologi**

*Lännergren, Jan; Westerblad, Håkan; Ulfendahl, Mats; Lundeberg, Thomas*

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