



**Karolinska  
Institutet**

Course syllabus for

## **Physiology, 13 credits**

Fysiologi, 13 hp

This course syllabus is valid from spring 2023.

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

Spring2019 , Spring2020 , Spring2023

Course code	1BI046
Course name	Physiology
Credits	13 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 Physiology and Pharmacology
Decided by	Programnämnden för biomedicinprogrammen
Decision date	2018-10-30
Revised by	Programme committee for study programmes in biomedicine
Last revision	2022-11-07
Course syllabus valid from	Spring 2023

## **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; Biochemistry; Genetics, genomics and functional genomics; Chemical biology; and Tissue biology, and at least grade pass (G) at the parts Laboratory work and seminars (4 credits) and Project work (2 credits) of the course in Immunology and microbiology, and the part Practical features (4 credits) of the course Neuroscience, at the Bachelor's programme in Biomedicine.

## **Objectives**

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

Regarding knowledge and understanding

- explain the physiology of the circulation, respiration, autonomic nervous system, endocrine, urinary, digestive and musculoskeletal systems,
- describe how anatomical structures relate to the function of various organ systems,
- describe the physiological state and homeostasis mechanisms in the human body,

- explain how selected diseases alter physiological functions,
- understand how different organ systems interact to maintain whole body homeostasis,
- describe the physiological adaptations to various stimuli (stress, disease, ageing and physical activity).

Regarding competence and skills

- demonstrate an ability to perform practical assessments of the functions of various organ systems in the body, and how they communicate with each other,
- Communicate scientific findings related to physiology through an oral presentation

Regarding judgement and approach

- take into account ethical considerations in research on humans,
- identify relevant and reliable sources related to specific topics in physiology,
- critically analyze and compile scientific findings.

## Content

The course focuses on physiological principles and regulatory mechanisms within the following areas: autonomic nervous system; heart and circulation; respiration; kidney, fluid and electrolyte balance, acid-base control; digestion and energy balance; endocrinology and reproduction; regulation of body temperature; musculoskeletal system; exercise physiology; environmental physiology.

### Integration of practical features, 4.0 hp

Grading scale: GU

Laboratory practicals.

### Project work, 2.0 hp

Grading scale: GU

The project work involves searching, analysing, and summarising literature, leading to an oral presentation.

### Integration of the course contents, 7.0 hp

Grading scale: VU

## Teaching methods

Teaching will be in the form of lectures, laboratory practicals, workshops and a project that serve to describe and illustrate the functional characteristics of the different organ systems.

## Examination

Part 1. Integration of practical features (4 credits). The examination consists of oral presentations. Graded Fail/Pass.

Part 2. Project work (2 credits). The examination consists of an oral presentation. Graded Fail/Pass. The performance in the project work can generate bonus points to be added to the points obtained in the final written exam (part 3).

Part 3. Integration of the course contents (7 credits). The examination consists of a written exam. Graded

Fail/Pass/Pass with distinction.

To pass the course (the grade Pass or higher), at least passed on all components of the course is required. The final grade for the whole course is based on the result of the exam in part 3 combined with any bonus points earned from the project work (part 2).

#### Compulsary participation

Laboratory practicals 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. Absence from a compulsory activity may result in that the student cannot compensate the absence until the next time the course is given.

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.

#### Limited number of examinations

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.

## Other directives

The course language is English.

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

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

## Literature and other teaching aids

### Mandatory literature

*Sherwood, Lauralee*

#### **Human physiology : from cells to systems**

6. ed. : Belmont : Thomson, cop. 2007 - 785, ca 95 s. (var. pag.)

ISBN:0495109347 LIBRIS-ID:10223640

[Library search](#)

*Tortora, Gerard J.; Derrickson, Bryan*

#### **Principles of anatomy & physiology**

Fourteenth edition. : 2014 - xxvii, 1127, I-33 pages

ISBN:1118345002 LIBRIS-ID:16489622

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