



**Karolinska  
Institutet**

Course syllabus for

## **Basic biology, 7.5 credits**

Grundläggande biologi, 7.5 hp

This course syllabus is valid from autumn 2019.

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

[Autumn2007](#) , [Autumn2008](#) , [Autumn2009](#) , [Autumn2010](#) , [Autumn2011](#) , [Autumn2012](#) , [Autumn2013](#) , [Autumn2014](#) , [Autumn2018](#) , Autumn2019 , [Autumn2020](#) , [Autumn2021](#)

Course code	2PS002
Course name	Basic biology
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Not applicable
Level	GX - First cycle
Grading scale	Fail (U), pass (G) or pass with distinction (VG)
Department	Department of Clinical Neuroscience
Participating institutions	<ul style="list-style-type: none"><li>• Department of Neuroscience</li></ul>
Decided by	Programnämnden för Psykologprogrammet
Decision date	2007-06-21
Revised by	Education committee CNS
Last revision	2019-02-27
Course syllabus valid from	Autumn 2019

## **Specific entry requirements**

Ma B, Sh A with at least the Pass grade/3.

## **Objectives**

### *Part 1*

On completion of this part, the student should be able to:

1. describe at a general level how studies of evolution and behaviour of animals can contribute to the knowledge of human psychology
2. describe at a general level human evolutionary history
3. describe at a general level the mechanisms of biological evolution (mutation and selection) and its results (adaptation)
4. describe at a general level the concept of behaviour and be able to explain relationships between inheritance, environment and an individual's behaviour

5. describe at a general level the following concepts: cultural evolution, evolutionary psychology, behavioural ecology, and be able to list different opinions about the importance of our evolutionary history

### *Part 2*

On completion of this part, the student should be able to:

1. describe at a general level the structure and function of the eukaryotic cell
2. describe at a general level the localization and function of tissues
3. describe the structure of the nervous system and the localization and function of certain neuroanatomical structures
4. describe the structure of the nerve cell, the action potential and neurotransmission
5. describe at a general level the structure and function of the motor system
6. describe the structure and function of the autonomic nervous system
7. describe at a general level the structure and function of the following organ systems; cardiovascular system, gastro-intestinal tract, liver, kidney and respiratory tract
8. Describe at a general level the components and function of blood, immune system and of certain hormone systems

## **Content**

The course consists of two parts.

### **Evolution and ethology, 2.5 hp**

Grading scale: GU

Part 1 includes evolution ethology and animal psychology and how this can contribute to knowledge about human psychology.

### **Neurobiology and physiology, 5.0 hp**

Grading scale: VU

This part of the course gives the student basic knowledge in human anatomy and physiology with focus on function. This part is further divided into two parts. The first part, neurobiology, deals with the eukaryotic cell and the tissues of the body at a general level. It also includes the structure and function of the nerve cell, glial cells, neuroanatomy, motor behavior and autonomic nervous system in more detail. The second part, physiology, deals with the physiology of rest of the body which includes cardiovascular physiology, respiration, gastro-intestinal tract, endocrinology, immune system and blood at a more general level.

## **Teaching methods**

### *Part 1*

Teaching consists of lectures that are followed up by seminars where contents from lectures are discussed.

### *Part 2*

The main part of the teaching takes place in the form of lectures where the students are encouraged to take active participation. Included is a workshop in neuroanatomy where the students participate in demonstration of human brain tissue and a laboratory session where the students will dissect a lamb's heart and inspect a human corpse. To the lectures, the students will obtain study questions that they can work independently with. There is also scheduled time when the students can discuss these questions with each another and with teachers.

## **Examination**

*Part 1*

## 1) Written examination

At the examination one of the grades Pass (G) or Fail (U) is given.

*Part 2*

## 1) Two oral tests

## 2) Written examination

The oral tests are graded Passed/Failed. At the written examination one of the grades Pass with distinction, Pass, or Failed is given. For the grade Pass with distinction on part 2 Pass with distinction in the written examination and Pass in both oral tests are required. To pass part 2 Pass in the examination and Pass in the two oral tests are required.

For Pass with distinction of the whole course, Pass in part 1 and Pass with distinction in part 2 are required. For the grade Pass in the whole course, at least Pass in both parts are required.

Student who do not pass the regular examination are entitled to retake the examination on five more occasions. If the student has carried out six failed examinations/tests no additional examinations will be given. As examination trials, the occasion when the student has participated in the same test are counted. Submission of blank exam is counted as an examination trial. Examination to which the student registered but not participated in, will not be counted as an examination trial.

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 knowledge, skills, and approaches may not be changed, removed or reduced.

## **Transitional provisions**

The transition rules follow KI's local guidelines for examination.

## **Other directives**

Course evaluation takes place according to KI's local guidelines. Results and other measures are returned to the students on the course web.

## **Literature and other teaching aids**

### **Mandatory literature part 1**

The literature of part 1 consists of articles that will be provided before the course starts.

### **Mandatory literature part 2**

The student will choose one of the following four books of physiology: Mader's Understanding Human Anatomy and Physiology, Fysiologi, Människokroppen: Fysiologi och anatomi or Den friska Människan.

Note that Fundamentals of Human Neuropsychology is mandatory for everyone.

*Kolb, B.; Whishaw, I. Q.*

### **Fundamentals of human neuropsychology**

6th edition : New York : Worth Publicers, 2008

### **Mader's understanding human anatomy and physiology**

9th revised edition. : New York, NY : Mcgraw-Hill, 2016

ISBN:1259254143 LIBRIS-ID:2bxmv25q00hnzxqd

[Library search](#)

### **Fysiologi**

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

Sjätte upplagan : Lund : Studentlitteratur, [2017] - 397 sidor

ISBN:9789144114859 LIBRIS-ID:19922136

[Library search](#)

*Sand, olav; et al*

### **Människokroppen : Fysiologi och anatomi**

Stockholm : Liber, 2007 - 544s

ISBN:9789147084357

[Library search](#)

*Aldskogius, Håkan; Rydqvist, Bo*

### **Den friska människan : anatomi och fysiologi**

Första upplagan : Stockholm : Liber, [2018] - 476 sidor

ISBN:9789147105694 LIBRIS-ID:21774685

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