

## **LÄKA32, Homeostasis, 28.5 credits**

### *Homeostas, 28,5 högskolepoäng*

#### **First Cycle / Grundnivå**

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### **Details of approval**

The syllabus was approved by Committee for Biomedical, Medical and Public Health Education on 2014-03-25 to be valid from 2014-03-25, autumn semester 2014.

### **General Information**

The course is included in semester 3 of the Master of Science programme in Medicine. It is compulsory.

*Language of instruction:* Swedish  
Literature in English may be included.

#### *Main field of studies*

Medicine

#### *Depth of study relative to the degree requirements*

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

### **Learning outcomes**

#### **Knowledge and understanding**

On completion of the course, the students shall be able to

- explain the structure, function and control of the different cooperating organ systems involved in maintaining the body's inner environment (circulation, respiration, digestion, metabolism and excretion)
- explain the structure and functions of the reproductive organs

- explain endocrine and neuroendocrine signalling mechanisms for the maintenance of homeostasis and for growth, development and ageing
- account for the overall organisation and function of the autonomic nervous system, including signal transfer
- describe how the functions of organ systems can be affected pharmacologically
- describe various methods used for physiological examinations in the human being (spirometry, blood pressure, ECG, MRI and electrophoresis)

### **Competence and skills**

On completion of the course, the students shall be able to

- connect and identify a normal 12-lead ECG (electrocardiogram)
- measure blood pressure.
- use an electron microscope and, with the help of the same, identify the cells, tissues and organs covered in the course
- select and use appropriate terminology in communication with experts and non-experts, respectively
- seek, orally present and summarise scientific papers/popular science articles that link to the various weekly themes to their fellow students, in a clear and concise fashion, and be able to give and receive constructive feedback on the content, structure and style of oral presentations
- work in groups, and constructively lead them
- assess their own role in a group

### **Judgement and approach**

On completion of the course, the students shall be able to

- identify their need of knowledge and take responsibility for their own learning.

### **Course content**

The structure and function of the various organ systems are studied in a fashion that integrates with the relevant pharmacology. The different weekly themes are presented as PBL cases and studied during one week. This work is supplemented by lectures and laboratory exercises (compulsory), microscopy exercises and model demonstrations relevant to that week's theme.

The above learning outcomes are part of the basic scientific skills required in the following clinical situations: respiratory problems chest pain shock disordered consciousness abdominal pain blood in vomit heart palpitations/abnormal heart rhythm fainting nausea and vomiting diarrhoea poisoning urinary problems reproduction/pregnancy normal childbirth/breastfeeding blood in faeces/abnormally-coloured faeces coughing blood in the urine/proteinuria menstrual problems swollen

extremities dependency and abuse thirst/dehydration changed fluid and electrolyte balance heartburn/acid reflux loss of appetite weight loss contraception changes in blood pressure difficulty in swallowing overweight/obesity loss of sexual libido/sexual dysfunction cardiac arrest, and the laboratory situations abnormal blood glucose/glucose in urine changed blood picture and abnormal laboratory values regarding liver function

## **Course design**

Group work according to the principles of Problem-Based Learning (PBL), lectures, demonstrations, microscopy exercises and compulsory laboratory sessions.

## **Assessment**

Scope and structure of the assessment:

Written exam based on for the learning outcomes stated for the course (15 credits).

Morphology oral (6 credits).

Course portfolio (7.5 credits) consisting of:

- passed PBL work, including an article presentation
- self-assessment of PBL work
- documentation of attendance at laboratory sessions.

Students who have failed examinations are entitled to re-take an exam four times. Further opportunities may be granted after a special application. Students who have begun a course under an older programme syllabus are entitled to three re-takes of examinations on the course for one year after the course was discontinued or underwent major changes.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## **Grades**

Marking scale: Fail, Pass.

## **Entry requirements**

To be admitted to the course, students must have passed all exams up to and including semester 1 of the programme and passed course components/portfolio up to and including semester 2.

## Subcourses in LÄKA32, Homeostasis

Applies from H08

- 0701 Written Test, 15,0 hp  
Grading scale: Fail, Pass
- 0702 Morphological Test, 6,0 hp  
Grading scale: Fail, Pass
- 0703 Portfolio, 7,5 hp  
Grading scale: Fail, Pass