BIMA34 Physiology

15 higher education credits  First cycle

General Information

Main field
Biomedicine

Subject
Physiology

Type of course
The course is mandatory in the Bachelor of Medical Science in Biomedicine programme and is taught in term 4.

Language of instruction
Swedish

Learning Outcomes

Knowledge and understanding
On completion of the course, students shall be able to:
- describe the structural and molecular basis of muscle contraction and the different properties of muscles, and explain their control;
- describe, in outline, spinal cord organisation in principle and spinal reflexes;
- describe the overall organisation and function of the somatic, autonomous and central nervous systems, including signal transfer;
- describe the morphology and function of the sensory organs and the role of the system in transmitting external information;
- describe the function of the endocrine system in regulating the inner environment, growth and development of the body;
- describe the structure and function of the reproductive organs and overall control of reproduction;
- explain the structure, function and control of the different cooperating body functions involved in maintaining the body's inner environment (circulation, respiration, digestion and excretion).

Skills and abilities
On completion of the course, students shall be able to:
- analyse some experimental data from physiological experiments, and present the results orally and in writing;
- know their way around a normal histological preparation, and know basic light microscopy techniques;
- explain physiological processes using terminology appropriate for peers;
- summarise their knowledge within a delimited field and express their learning needs;
- work in groups and lead them so that the work yields results.
Judgment and approach

On completion of the course, students shall be able to:
- identify their need of further knowledge, and take responsibility for their knowledge development;
- assess their own role in a group.

Course Content

The course provides an introduction to human physiology, focusing on the organ systems and their regulation.

Subjects examined

A pass on the course is worth 15 credits and requires a pass in examinations, active participation in all group exercises, laboratory work and presentations. Written laboratory reports are to have been approved and passed. Students who have failed one section are, as far as possible, provided with an opportunity to remedy this during the course. If this is not possible, then they must wait until the course is taught again.

Instruction and Examination

The course is based on problem-based learning (PBL) and consists of week-long themes. A typical week contains one or two lectures. During the week, students work in tutorial groups (two meetings a week) and individually. The course begins with more general areas of physiology, such as the principles of neurological control, homeostasis mechanisms and endocrine control. The sensory organs are studied along with the peripheral nervous system.

The course then continues with integrative physiology within the major organ systems. During the course, acquired knowledge of nervous and endocrine control is applied to explain function and regulation. Alongside physiology, students study the morphology and anatomy required to explain function. Some sections contain microscope exercises and laboratory exercises/demonstrations to illustrate, for example, morphology or boost understanding of physiological processes. The laboratory exercises are reported in writing (individual reports) or orally in groups of 6–8 students plus supervisor. During oral reporting, there will be time for questions and discussions in which everyone is expected to take part.

Examination takes place through written examination. Two occasions for examination will be scheduled soon after the course. Re-examination will be planned by individual agreement.

Grades

The grades awarded are Pass or Fail.

Admission Requirements

At least 13 higher education credits in Cell Biology (BIMA10 or MOBA01), 15 higher education credits in basic chemistry (one of the courses KEMA00, KEMA01, KEMA02, KEMA03), 15 higher education credits of cell chemistry (MOBA02), and one of the courses BIOA01, MOBA03, BIMA30 or BIMA31.

Literature

Recommended literature will be listed separately. An updated list will be posted on the course website a month
before the course starts.

Further Information

The course replaces the earlier BIM032.