



# HL2017 Advanced Physiology, Smaller Course 6.0 credits

Avancerad fysiologi, mindre kurs

---

Course syllabus for HL2017 valid from Autumn 11

This is a translation of the Swedish, legally binding, course syllabus.

**Grading scale:** A, B, C, D, E, FX, F

**Education cycle:** Second cycle

**Main field of study:** Technology and Health

## Intended learning outcomes

The course shall give a basic knowledge and understanding of human body structure and function. This knowledge is the basis for understanding how diseases occur and affect the function of various organs and body systems. The course includes practical moment where various physical testing methods for measuring normal physiological parameters.

## Course main content

### A. Circulation and respiration

The student should be able to

- explain the blood circulation, respiration, regarding to the structure and function of the cell to body systems level
- explain and analyze how the different systems interact in the control of the body's internal environment
- be familiar with different ways to study the function

#### Skills

The student should

- know how to perform the ECG recording, ortostatic test, static and dynamic spirometry
- possible to measure and record your heart rate and blood pressure
- to identify respiratory sounds and heartsounds

### B. The Urinary tract, body fluids, endocrine system

The student should be able to

- give an account of the urinary organs and endocrine organs structure and function of the cell to body systems level
- explain how the urinary organs and endocrine system in combination with other factors are involved in urine production, fluid balance and acid-base balance

#### Skills

The student must know the principles for the interpretation of the acid-base status

### C. Gastro intestinal system

- Digestion and absorption
- Digestive organs and secretion
- Digestive canal motor activity
- Clinical illustrations

The student should be able to:

- give an account of the alimentary canal, liver and liver's structure and function of the different nutrients how they are absorbed and digested and
- be able to relate these skills to certain diseases

#### **D. Man in motion with a focus on the importance of muscles**

The student should be able to

- give an account of the movement apparatus structure and function of cellular level to body systems level as regards the muscles importance
- explain how musculature changes during childhood, as well as during the aging process and be able to explain the beneficial effect of physical activity and fitness
- summarize detailed knowledge of the anatomy, musculature and function to the full picture

### **Language of instruction**

Language of instruction is specified in the course offering information in the course and programme directory.

### **Eligibility**

Two years of studies in science/technology at university level. Basic knowledge of anatomy/physiology corresponding to the course HL1007 Medical Engineering, basic course

### **Literature**

Principles of Anatomy and Physiology, 12 th, Ed. Gerard J. Tortora and Bryan H. Derrickson, ISB: 978-0470-39234-8

### **Examination**

- TEN1 - Examination, 6.0 credits, grading scale: A, B, C, D, E, FX, F