



# HL1201 Medicine and Medical Engineering, Basic Course 12.0 credits

Medicin och medicinsk teknik

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

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

On 2020-04-22, the Head of School of CBH has decided to establish this official course syllabus to apply from the autumn semester 2020 (registration number C-2020-0795).

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

First cycle

## Main field of study

Medical Engineering, Technology

## Specific prerequisites

Basic and specific requirements for five year engineering programs at KTH, Physics B/ Physics 2, Chemistry A/ Chemistry 1 and Mathematics E/ Mathematics 4.

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

The medicine part of the course:

After completing the course the student should be able to explain physiology and anatomy in the following areas:

- The nervous system
- The musculoskeletal system
- The endocrine system
- Reproduction
- Circulation
- Respiration
- Fluid balance
- Metabolism
- The immune system

and be able to use basic medical terminology and to describe basic pathology.

The medical engineering part of the course:

After completing the course the student should be able to:

- \* Describe and explain medical engineering methods for diagnostics and therapy
- \* Compare medical engineering methods with respect to basic physical principles and field of application
- \* Apply the acquired medical engineering knowledge to medical issues

## Course contents

The medicine part of the course:

The part of the course focusing on medicine deals with physiology and basic anatomy for the: nervous system, musculoskeletal system, circulation, respiration, immune system fluid, balance, nutrition, endocrine system and reproduction. The course also includes medical

terminology. Finally, the acquired physiological understanding is used to study diseases of the organ systems.

The medical engineering part of the course:

In the part of the course focusing on medical engineering, technical methods for diagnostics and therapy are dealt with in the following areas: clinical physiology, clinical neurophysiology, clinical chemistry and microbiology, diagnostic radiology, internal medicine and therapy, surgery, intensive care, obstetrics, oncology and hospital physics.

## Examination

- REDA - Oral exam, 0.5 credits, grading scale: P, F
- TENA - Written exam, 7.0 credits, grading scale: A, B, C, D, E, FX, F
- TENB - Written exam, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.