



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.

Establishment

Course syllabus for HL1201 valid from Spring 2014

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 course is intended for persons without traditional medical education that needs a basic medical knowledge for usage in the working life, e.g. students in medical engineering. On completion of the course, the aim is that the student should be able to:

- * Define and use basic medical terminology and language
- * Define and describe at a general level the basics of histology and anatomy
- * Describe and explain the function and anatomy regarding the different organ systems in the human body
- * Describe aetiology, symptom and treatment for more important diseases in the different organ systems
- * Describe and explain medical engineering methods for diagnostics and treatment
- * Compare medical engineering methods regarding basic physical principles and field of use
- * Apply the acquired medical engineering knowledge on medical issues

Course contents

In the part about medicine first medical terminology, anatomy, histology and genetics is discussed at a general level. After that basic overviews follow, organised after classical system physiology: nerve and muscle, pain, circulation, respiration, kidney and fluid balance, digestion and nutrition, endocrinology and reproduction. The acquired physiological understanding is finally used to study general pathology.

In the part about medical engineering diagnostics and treatment are discussed, as well as the relationships with the technical methods that are used within physical diagnostics, clinical physiological diagnostics, clinical neurophysiology, radiological diagnostics, internal medicine and treatment, surgery, intensive care, obstetrics, oncology and medical physics.

Course literature

Henriksson & Rasmussen: Fysiologi med relevant anatomi, Studentlitteratur, 2013. ISBN 978-91-44-08462-6

M Lindén & P. Åke Öberg: Jacobsons Medicin och teknik, Studentlitteratur, 2006. ISBN 91-44-04760-6

Utdelat kursmaterial

Examination

- **TEN2** - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- **TEN1** - Examination, 7.5 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.

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

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.