



HL1005 Intensive Care and Surgical Devices 7.5 credits

Teknik i intensivvård och kirurgi

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

Establishment

Course syllabus for HL1005 valid from Autumn 2007

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Basic medicine corresponding to the course: Anatomy, Physiology, and Pathology

Language of instruction

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

Intended learning outcomes

The use of medical devices in intensive care and anesthesia is extensive and an important part in patient management. This course gives students a deeper knowledge of anesthesia machines, ventilators, infusion pumps, circulatory support, haemodialysis and patient monitoring.

In groups of three to four students, the students deepen their understanding of a current, clinically relevant, medical device problem in a project work.

After completing the course the students should be able to

- Describe the structure, function, treatment principles and the use of the covered medical devices covered by the course
 - Describe the differences in how to perform measurements on a biological system as compared to technical systems
 - Find in-depth knowledge of the subject in medical, and other appropriate databases
 - Critically review, analyze and extract information from scientific papers
 - Combine new medical or/and medical technology with previously acquired technical knowledge
 - Synthesize knowledge from textbooks, scientific papers and field trips to the solution of the assigned project work
 - Compare, discuss and evaluate different technical solutions and alternatives based on clinical needs
 - Compile the proposed solution of the project work to a scientifically structured written report with uniform language and of good quality
 - Present and defend their work orally in the presence of their fellow students
- From a scientific perspective, oppose and criticize a project (report and oral presentation)

Course contents

Teaching consists of lectures, tutorials, project work, study visits and compulsory presentations.

The lectures will cover the following topics:

- Clinical aspects of critical care and anesthesia
- Heart mechanics and circulatory support
- Anaesthetic equipment
- Ventilation technology and ECMO
- Infusion technology
- Haemodialysis
- Patient Monitoring

Project work: the students in the work groups immerse themselves in a study of a selected current problem or function in the subject area with regard to medical background, technology and their consequences. To form their own clinical understanding of the problems in the project work, it is desirable that the group is encouraged to do study visits.

Course literature

Handouts

Examination

- RED1 - Account, 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.