HL2016 Technology in Surgery, Anaesthesia, and Intensive Care 6.0 credits

Teknik inom kirurgi, anestesi och intensivvård

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-2020-0799).

Grading scale

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

Education cycle

Second cycle

Main field of study

Medical Engineering

Language of instruction

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

Intended learning outcomes

The objective of the course is to give the student general knowledge about important technical products and systems that are used in surgery, anesthesia, and intensive care. Such systems include anesthetic systems, surgical instruments, lighting and ventilation systems in operating rooms, sterile disposable devices, systems for breathing and circulatory support, patient monitoring systems etc. The student will then enter more deeply into the subject through an individual assignment.

After the course the student should be able to:

- Describe the principles of construction, function, and application of important technical products that are used in surgery, anesthesia, and intensive care.
- Analyze a relevant technical product or problem and suggest new solutions or improvements.
- Look for deeper knowledge in medical and other suitable databases.
- Present the analysis in the form of a scientifically structured and well-written report.

Course contents

The education will include lectures, study visits, written tests, and a group assignment.

The lectures will be given by people from the health care sector and from medical engineering research and industry. Examples of topics that may included:

- Clinical overview in surgery, anesthesia and intensive care
- Anesthetic systems
- Conventional surgical equipment
- Minimally invasive surgery
- Aseptic and antiseptic techniques
- The design of a modern operating room
- Breathing and circulatory support systems
- Patient monitoring systems

In addition to the lectures, study visits, and written tests, the student will engage in an individually selected assignment, which involves an analysis of a relevant product or problem within the field of study. Preferably, the student should choose an assignment he/she has become especially interested in during the course.

Specific prerequisites

Knowledge corresponding to Medical engineering, basic course, HL1007

Examination

- INL1 - Assignment, 6.0 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.

Written tests on lecture topics and written report of the assignment, 6.0 credits.

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.