



CM2002 Artificial Intelligence within Biomedical Engineering and Health Systems 7.5 credits

Artificiell Intelligens inom Medicinteknik och hälsosystem

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

Course syllabus for CM2002 valid from Autumn 2024

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Medical Engineering

Specific prerequisites

Completed degree project 15 ECTS, 25 ECTS in mathematics, 15 ECTS in physics, 10 ECTS in programming and 6 ECTS in electrical engineering. Alternative, Work experience: 2 years in healthcare in medical technology, data analysis or at a research institute or regulatory institute. English 6/B.

Language of instruction

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

Intended learning outcomes

After passing the course, the student should have knowledge of:

- Recent initiatives and interdisciplinary research in biomedical engineering and health systems at KTH and within other EIT partners
- Differences and similarities between research methodology and overall innovation and entrepreneurship strategy of academic, industrial, healthcare and government body stakeholders across Europe and worldwide
- How new technologies can tackle future challenges in medical healthcare
- Basic theoretical and practical use of AI and entrepreneurship
- Knowledge about the benefits, but also about the barriers and risks of AI implementation
- How to create contacts across the disciplines and nations

Course contents

The course provides theoretical and practical knowledge regarding various aspects of healthcare challenges, demands, future of work and business opportunities.

Lectures, team collaboration, oral presentations, study visits, problem based learning seminars, practical hands on experience and discussions within biomedical engineering, biophysics, bioimaging, proteomics, genomics, neuromics, biomedical simulations and diagnostics. Moreover the course will cover biodesign thinking, clinical need identification, basic theoretical and practical use of recent innovative technologies, patent vs publication strategy, legal, IP issues and entrepreneurship

Examination

- PRO1 - Project, 7.5 credits, grading scale: P, 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.