Faculty of Medicine

VMFB44, Biotechnology in Defence and Security: Medical Opportunities and Legal Challenges , 5 credits

Bioteknologi inom försvar och säkerhet: medicinska möjligheter och juridiska utmaningar, 5 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by The Master's Programmes Board on 2025-05-22. The syllabus comes into effect 2025-05-22 and is valid from the autumn semester 2025.

General information

Freestanding course.

Language of instruction: English

Main field of study	*Specialisation*
Biomedical Laboratory Science	G1N, First cycle, has only upper-secondary level entry requirements
Speech and Language Pathology	G1N, First cycle, has only upper-secondary level entry requirements
Audiology	G1N, First cycle, has only upper-secondary level entry requirements
Nursing	G1N, First cycle, has only upper-secondary level entry requirements
Occupational Therapy	G1N, First cycle, has only upper-secondary level entry requirements
Reproductive, Perinatal and Sexual Health	G1N, First cycle, has only upper-secondary level entry requirements
Biomedicine	G1N, First cycle, has only upper-secondary level entry requirements
Radiography	G1N, First cycle, has only upper-secondary level entry requirements

Medicine	G1N, First cycle, has only upper-secondary level entry requirements
Physiotherapy	G1N, First cycle, has only upper-secondary level entry requirements

Learning outcomes

The course aims to provide an interdisciplinary orientation regarding areas that lie at the interface between security policy, biotechnology and medical research. It focuses on the challenge of how new biotechnologies can be used for humanitarian purposes during war and other types of international conflict while upholding international law and human rights.

Knowledge and understanding

On completion of the course, the student shall be able to:

- define different types of interstate and intrastate conflicts and give current examples of such conflicts in the spectrum from grey-zone conflict to full-scale war
- give a general account of how current geopolitical conflicts impact disease panorama, healthcare and medical research
- exemplify how medical research and biomedical innovations can fall within the scope of the concept of strategic technology
- explain at a basic level how biomedical technology and research can be used in geopolitical power struggles, including examples from the information domain
- give an account at a basic level of the different types of intelligence threats in research and give examples of countermeasures (information security)
- give an account at a basic level of the national and international laws and conventions that regulate the interface between medical research and conflict
- give an account at a basic level of how human rights can be negatively impacted by biomedical technology and research in current geopolitical conflicts.

Competence and skills

On completion of the course, the student shall be able to:

- present a basic, evidence-based evaluation of the risks and opportunities associated with new biotechnologies regarding health and human rights in the context of international conflict
- plan and discuss with other course participants a research project in the field of strategic biotechnology taking into account relevant information security and current regulations
- exemplify dilemmas that arise in biomedical research during an interstate or intrastate conflict, and discuss with other course participants solutions to such dilemmas.

Judgement and approach

On completion of the course, the student shall be able to:

- reflect on ethical dilemmas that arise in healthcare and medical research during an interstate or intrastate conflict.

Course content

The course is designed to offer an interdisciplinary understanding of the interplay between security policy, biotechnology development and medical science in the light of the current global situation. Students will explore the impact of international conflict and competition on biotechnical and biomedical research, focusing on data protection, innovation, intelligence and the risks of dual-use (civilian/military) technologies. Participants will be introduced to emerging technologies in medicine, biomedicine and biotechnology, while ethical, social science and legal aspects are highlighted..

The aim is that after completing the course, students will be able to carry out a general and scientifically based risk assessment of a biomedical research area from several different angles. The course is to be seen as a complement to studies in related subjects such as political science, intelligence analysis, law, human rights, war studies, biotechnology, biochemistry, medicine, health sciences or biomedicine.

Course design

Examinations are the only compulsory component. The course is conducted using interactive learning methods in which the students are encouraged to participate actively and contribute to an inclusive learning environment.

During the course, we engage in a mix of self-study, online activities and interactive sessions. We endeavour to use engaging forms of learning in which students get to apply both newly acquired theoretical knowledge and experiences they bring to the course of real-life scenarios, under the guidance of area experts. Individual written assignments of a problem-solving and analytical nature are also part of the course. During these assignments, students are given the opportunity to include problems and experiences from any previous education and professional experience.

Guest lecturers from public authorities and several different universities are involved in panel discussions with one another and with the students. Experts also participate as points of reference in problem-solving group discussions on real-life cases.

Assessment

Examination is in writing and consists of two assessed components:

- Written exam with multiple-choice questions, 1 credit, Fail/Pass
- Course portfolio, 4 credits, Fail/Pass

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Grades

Grading scale includes the grades: Fail, Pass

Entry requirements

General requirements and studies equivalent of course English 6 from Swedish Upper Secondary School.

Further information

The course overlaps with the former VMFP08, which means that they cannot be counted towards the same degree.