Försvarshögskolan

Course Syllabus

Theory for system science for security and defense

Teori för försvarssystem

Course Code	2MF005	**Main Field of Study**	Systems Science for Defence and Security
Valid from Semester	Autumn 2019	**Department**	Department of Military Studies
Education Cycle	Advanced level	**Subject**	Systems Science for Defence and Security
Scope	15.0	**Language of Instruction**	The teaching language is English. However, the teaching could be carried out in Swedish should the person responsible for the course so decide.
Progression	A1N	**Decided by**	The Research and Education Board's Course Syllabus Committee at the Swedish Defence University
Grading Scale	Fail, Pass, Pass with Distinction	**Decision date**	2019-01-28
Revision	1.3		

Entry Requirements

Admitted to the Master's Programme in Defence and Security Systems Development.

Course Content and Structure

The purpose of the course is to contribute theoretical knowledge of systems theory and sociotechnical defence and security systems. The course is divided into two modules.

Modules

Systems Theory and Sociotechnical Systems

Systemteori och sociotekniska system

Scope: 7.5

The introductory module is intended to develop the student's understanding of systems, systems theory and sociotechnical systems. The emphasis is on overarching theories and frameworks for understanding systems, as well as theoretical understanding of humans and organisation as elements of a sociotechnical system.

Sociotechnical Defence Systems

Sociotekniska försvarssystem

Scope: 7.5

This module introduces current research into sociotechnical defence systems, with a specific focus on the present day (twenty-first century). External influences on

systems from parameters such as environment, uncertainty, complexity and the adversary will be especially highlighted. Aspects touching on ethics, morality, gender and sustainability will also be highlighted as they pertain to the use and design of sociotechnical defence systems.

Intended Learning Outcomes

After completed course the student should be able to:

Module 1

- compare and contrast various systems theories and sociotechnical perspectives and how these have developed over time;
- independently apply the theoretical perspectives introduced during the course with a critical attitude; and
- present analyses in written and oral form based on these theoretical perspectives, with well-developed arguments and

critical reasoning and with a clear bearing on the course literature.

Module 2

- describe and reflect on how technology, organisation and individuals create and interact in a sociotechnical defence system and how this affects its capabilities;
- describe, relate and summarise elements of current research in the field of sociotechnical defence systems; and
- problematise and evaluate ethical and social consequences related to the development and use of sociotechnical defence and security systems.

Type of Instruction

Teaching will be conducted in the form of lectures, independent study and seminars.

Assessment

Examination

Scope: 7.5

Grading Scale: Fail, Pass, Pass with Distinction

Examination will be through one individual written assignment.

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Scope: 7.5

Grading Scale: Fail, Pass, Pass with Distinction

Examination will be through one individual written assignment.

Grading

Grades are set according to a three-grade scale: Pass with merit (VG), Pass (G) and Fail (U).

A passing grade (G) requires a pass (G) for both of the individual written assignments.

A pass with merit (VG) requires a pass with merit (VG) for both of the individual written assignments.

The examiner may decide that supplementary work is required in order for a pass grade to be achieved. Examination papers submitted late will not be graded, unless there are special reasons, which have been approved by the examiner. Supplementary assignments are to be submitted no later than five working days after the notification of results and the supplementary assignment for the examination in question, unless there are special reasons, which have been approved by the examiner.

Grading criteria are stated in the course description.

Restrictions in Number of Examinations

There is no limit on the total number of examination opportunities. The total number is restricted to one ordinary examination and two retakes in any two-term period, unless special circumstances exist that are acceptable to the examiner.

Restrictions Concerning Degree

The course cannot be part of a degree whose content is wholly or partly in accordance with the content of this course.

Transitional Provisions

When a course is no longer provided or when the content of a course has been significantly altered, the student retains the right to be examined in accordance with this course syllabus once per term during a three-term period.

Miscellanous

The course is held as a compulsory element of the Master's Programme in Defence and Security Systems Development.

On the completion of the course, an evaluation will be conducted under the auspices of the course director, which will form the basis for any changes to the course.

The course will be held in English. If no international students are admitted, parts of the course may be held in Swedish.

This is a modified version of the syllabus, created to transfer the original to the education database Kursinfo. For originals, contact the archive.

Försvarshögskolan

Reading List

Theory for system science for security and defense

Teori för försvarssystem

Course Code	2MF005
Revision	1.3
Reading List Valid from Date	2021-05-31
Reading List Decided Date	2021-05-05

Theory for Defence Systems (2MF005)

Course literature

Part 1

- De Weck, Oliver, L, Roos, Daniel, & Magee, Christopher L. (2012). Engineering Systems: Meeting Human Needs in a Complex Technological World. Cambridge, MA: The MIT Press. (Available digitally through the Anna Lind Library)
- Grech, Michelle R., Horberry, Tim J., & Koester, Thomas. (2008). Human Factors in the Maritime Domain. Boca Raton, FL: CRC Press, Taylor & Francis Group.
- Latour, Bruno. (1987). Science in Action. Cambridge, MA: Harvard University Press.

Part 2

- Biddle, Stephen. (2005). Military Power; Explaining Victory and Defeat in Modern Battle. Princeton, UK: Princeton University Press.
- Scharre, Paul. (2018). Army of None: Autonomous Weapons and the Future of War. New York: W. W. Norton & Company.

Additional literature comprising a maximum of 1 000 pages (500 for each part). The texts (articles and book excerpts) will be provided on Canvas, when this is allowed, or, when not, directions to where to find them.