



Course Syllabus
Methods for Defence and Security Systems Development

Metod för utveckling av system för försvar och säkerhet

Course Code	2FS027	Main Field of Study	Systems Science for Defence and Security
Valid from Semester	Autumn 2022	Department	Department of Systems Science for Defence and Security
Education Cycle	Advanced level	Subject	Systems Science for Defence and Security
Scope	15.0	Language of Instruction	The teaching is conducted in English.
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	2021-09-21
Revision	1.1		

Entry Requirements

Degree of Bachelor of Science in Military Studies or a Bachelor's degree in Engineering with a minimum of 180 credits, or equivalent. There are additional requirements for proficiency in English equivalent to English B/English 6.

Course Content and Structure

The course builds on and applies theory and methods from previous courses in the masters programme on defence and security systems development. Its purpose is to offer a more in-depth look at the subject's methods for capability development supported by concept development and systems design in the defence and security sector. The course also contributes to the development of the student's understanding of the perspectives of customer organisations, suppliers and specialist disciplines.

The course covers:

- methods and operations research models on different system levels supporting the development of capabilities for defence and security, including modeling, simulation and war gaming techniques to support decision-making in war or crisis management scenarios,
- an introduction to central methods for studying design processes, and
- critical perspectives on the defence and security sector's current best practice processes and methods for development and design, like for example Concept development and experimentation, Systems Engineering och Systems of Systems Engineering.

The lectures, self-study activities and seminars of the course follow a capability's life cycle. These learning activities generate knowledge in methods and models for the development of systems for defence and security. It is then successively applied in a student development project.

Intended Learning Outcomes

After completed course the student should be able to:

Competence and skills:

- apply methods and models for supporting the development of capabilities for defence and security,
- apply modeling, simulation and war gaming techniques to support decision-making,
- apply central methods for studying design processes.

Judgement and approach:

- compare and evaluate the implications of the course's different approaches to the development of defense and security



capabilities.

Type of Instruction

Seminars

Lectures

Project Work

Independent Study

Assessment

written assignment

Scope: 7.5

Grading Scale: Fail, Pass, Pass with Distinction

The examination includes submitting an individual written assignment on a study of a design process

practical method application

Scope: 7.5

Grading Scale: Fail, Pass

The examination includes the submission of two reports covering practical learning activities on applied methods, one individual submission and one covering work in group with other students.

The examiner may decide that supplementary work is required in order for a pass grade to be achieved on the course. 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

Grading takes place through a three-grading scale: Fail (F), Pass (P) and Pass with Distinction (PwD).

A Pass (P) on the course requires a Pass (P) on the reports from the practical methods application and a Pass (P) on the written assignment.

A Pass with Distinction (PwD) on the course requires a Pass (P) on the reports from the practical methods application and a Pass with Distinction (PwD) on the written assignment.

Grading criteria are reported at the latest at the start of the course.

Restrictions in Number of Examinations

The number of examinations is not limited.

Restrictions Concerning Degree

The course cannot be included in a degree with another course whose content fully or partially corresponds to the content of this course.

Transitional Provisions

When the course is no longer given or when the course content has changed substantially, the student has the right to be examined once per semester during a three-term period in accordance with this syllabus.

Miscellaneous

The course is given within the master programme for defence and security systems development. The course may also be given as a single-subject course.

If a student has a decision from the Swedish Defense University on special educational support due to a disability, the examiner may decide on alternative forms of examination for the student.

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.

Reading List**Methods for Defence and Security Systems Development**

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Course Code	2FS027
Revision	1.1
Reading List Valid from Date	2022-11-01
Reading List Decided Date	2022-10-26

- Säfsten, K and Gustavsson, M., Research methodology – for engineers and other problem solvers, Studentlitteratur, 2020
- Washburn, A. and Kress, M., Combat modeling, Springer, 2009

Additional literature distributed literature during the course