Försvarshögskolan

Course Syllabus

Cyber Operations in an Antagonistic Environment

Cyberoperationer i antagonistisk miljö

Course Code	2FS040	**Main Field of Study**	Systems Science for Defence and Security
Valid from Semester	Autumn 2023	**Department**	Department of Systems Science for Defence and Security
Education Cycle	Advanced level	**Subject**	Systems Science for Defence and Security
Scope	7.5	**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**	2022-08-23
Revision	1.0		

Entry Requirements

Passed courses of at least 180 credits that include

- at least 7,5 credits in the field of Defence, Crisis management and Security,

- written thesis project including of at least 15 credits,

and knowledge corresponding to English 6 (English B).

Course Content and Structure

Based on the students previous knowledge and experience, the cyber environment is problematized with the purpose of enabling them to describe, discuss, and analyse threats, risks, and events. The first part of the course starts with an introduction to computers and networks with the aim of providing a common frame of reference for the rest of the course. Lectures introduce the fundamental technological concepts and ideas that are the foundation the modern information and communications technology. The knowledge is consolidated in a laboratory. The second part of the course deals with the Internet, automated systems, and the actors in the cyber environment. This part of the course is largely based on the study of research articles that illustrate different part of the cyber field, such as functionality of the Internet on a system level, threats and risks in automated systems, and the means used by actors within the field. The distinctive features of the cyber area are particularly emphasized. Through a take-home exam, the student are given the opportunity to immerse themselves and develop their analytical abilities within a chosen part of the field.

The course consists of two modules. Introduction to Computers and Networks (1.5 credits) and Cyber Operations (6 credits).

Modules

Module 1 - Introduction to Computers and Networks

Delkurs 1 - Introduktion till datorer och nätverk

Scope: 1.5

The module explores and examines basic concepts and methods for computers and networks.

Module 2 - Cyber Operations

Delkurs 2 - Cyberoperationer

Scope: 6.0

The module explores and examines function and governance of the Internet, threats, risks and opportunities with regard to automated systems and principal actors and their general approaches to cyber operations.

Intended Learning Outcomes

After completed course, the student should be able to:

Module 1 Introduction to Computers and Networks

Knowledge and understanding

- Explain basic concepts and methods for computers and networks as well as the functional principles of the Internet.

Module 2 Cyber Operations

Knowledge and understanding

- Explain the processes and organisations that govern the Internet.

Competence and skills

- Describe and discuss automated technical systems from a vulnerability and user perspective.
- Describe and discuss different actors' actions within the cyber environment.

Judgement and approach

- Independently analyse and discuss the content in research articles relevant to the area.

Type of Instruction

Seminars

Lectures

Independent Study

Laboratory work

Assessment

Module 1 - Module one Lab Report

Scope: 1.5

Grading Scale: Fail, Pass

Assessment is through a written laboratory report.

Late exams are not graded unless approved by the examiner on the basis of special reasons.

The examiner can decide regarding supplementary tasks for attaining passing grade.

Supplementary task must be turned in no later than five working days after results and supplementary task have been conveyed for the exam in question.

Module 2 - Home examination

Scope: 6.0

Grading Scale: Fail, Pass, Pass with Distinction

Assessment is through a written home examination.

Late exams are not graded unless approved by the examiner on the basis of special reasons.

The examiner can decide regarding supplementary tasks for attaining passing grade.

Supplementary task must be turned in no later than five working days after results and supplementary task have been conveyed for the exam in question.

Grading

Module 1 Introduction to Computers and Networks

Grading is made on a two-step scale: pass (G) and failed (U).

Module 2 Cyber Operations

Grading is made on a three-step scale: pass with distinction (VG), pass (G), and failed (U).

The overall grade of pass (G) requires passing grade (G) on both the written lab report and the home examination.

The overall grade of pass with distinction (VG) requires passing grade (G) on the written lab report and pass with distinction (VG) on the home examination.

Restrictions in Number of Examinations

The number of examination sessions 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 significantly, the student has the right to be examined once per study term during a three study term period in accordance with this course syllabus.

Miscellanous

If a student has a decision from the Swedish Defence University on special educational support due to a disability, the examiner may decide on how to adapt an examination for the student.

Course evaluation is carried out after completion of the course through the course coordinator and is the basis for any changes to the course.

Reading List

Cyber Operations in an Antagonistic Environment

Cyberoperationer i antagonistisk miljö

Course Code	2FS040
Revision	1.0
Reading List Valid from Date	2020-05-28
Reading List Decided Date	2020-05-28

Cyber Operations in an Antagonistic Environment

The course is based on research articles which will be made available during the course.