



## COURSE SYLLABUS

# State-of-the-art and Research Methods in Cybersecurity , 7.5 credits

*State-of-the-art och forskningsmetoder inom cybersäkerhet, 7,5 högskolepoäng*

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<b>Course Code:</b> TFCS24	<b>Education Cycle:</b> Second-cycle level
<b>Confirmed by:</b> Dean Mar 1, 2024	<b>Disciplinary domain:</b> Technology
<b>Revised by:</b> Director of Education May 28, 2024	<b>Subject group:</b> DT1
<b>Valid From:</b> Aug 1, 2024	<b>Specialised in:</b> A1F
<b>Version:</b> 3	<b>Main field of study:</b> Computer Science

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### Intended Learning Outcomes (ILO)

After a successful course, the student shall:

Knowledge and understanding

- display knowledge of state-of-the-art and emerging areas in cybersecurity
- demonstrate comprehension of contemporary research methods in cybersecurity

Skills and abilities

- demonstrate the ability to understand state-of-the-art and emerging areas in cybersecurity
- demonstrate skills in applying contemporary research methods in cybersecurity

Judgement and approach

- demonstrate the ability to draw conclusions about state-of-the-art and emerging areas in cybersecurity
- demonstrate the ability to choose and apply suitable research methods in cybersecurity

### Contents

The course provides knowledge and skills in state of the art in cybersecurity. This includes both state-of-the-art and emerging knowledge areas in cybersecurity, best practices, work procedures, and contemporary scientific methods in the area.

The course includes the following elements:

- Scientific cybersecurity methods with an emphasis on quantitative methods, descriptive statistics, sampling and survey design, and regression analysis
- State-of-the-art and emerging areas in cybersecurity

### Type of instruction

The teaching in the course consists mainly of lectures, assignments, tutoring, and seminars.

The teaching is conducted in English.

**Prerequisites**

Passed courses at least 90 credits within the major subject in Computer Science, Informatics, Information Systems, Computer Engineering, or the equivalent, and taken course Cybersecurity Overview, 7,5 credits or the equivalent. Proof of English proficiency is required.

**Examination and grades**

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Assignment <sup>1</sup>	3 credits	5/4/3/U
Project	2.5 credits	U/G
Seminar	2 credits	U/G

<sup>1</sup> Determines the final grade of the course, which is issued only when all course units have been passed.

**Course literature**

The literature list for the course will be provided eight weeks before the course starts.

One chapter from the following book

Title: ISC2 CISSP Certified Information Systems Security Professional Official Study Guide, 10th Edition

Author: Mike Chapple, James Michael Stewart, Darril Gibson

Publisher: Wiley

ISBN: 978-1-394-25469-9

Title: Discovering Statistics Using IBM SPSS Statistics

Author: Andy Field

Publisher: University of Sussex, UK

ISBN: 9781526445780

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