UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Practical Cryptology A1N

7.5 credits

Course code: IT812A
Version number: 3
Valid from: 1 July 2026
Ratified by: Curriculum Committee for Informatics
Date of ratification: 5 February 2026

1. General information about the course

The course is provided by the University of Skövde and is named Practical Cryptology A1N (Praktisk kryptologi A1N). It comprises 7.5 credits and is a second-cycle course. The level of progression is A1N.

The course is a part of the main field of study in Informatics. The disciplinary domain of the course is Technology.

2. Entry requirements

A Bachelor's degree (equivalent to a Swedish kandidatexamen) within the fields of informatics or computer science or the equivalent.

A further requirement is proof of skills in English, equivalent of studies at upper secondary level in Sweden, known as English 6 or English level 2. This is normally demonstrated by means of an internationally recognized test, e.g., IELTS, TOEFL, or an equivalent.

3. Course content

Security is a fundamental requirement in computing, and cryptography is an important building block for ensuring the confidentiality and integrity of information. The focus for this course is on how cryptography works on an operational level and how various cryptanalytic attacks can be applied, rather than on the science of cryptology. The course is organized around three categories of cryptographic primitives (symmetric, asymmetric, and unkeyed), which are elaborated on and put into practical context.

4. Objectives

After completed course the student should be able to:

- analyse and critically reflect upon cryptographic primitives and algorithms,
- explain in an in-depth manner central concepts in cryptology,
- apply different cryptographic tools in practical scenarios, and
- apply and critically reflect on various cryptanalytic attacks.

5. Examination

The course is graded VG (Pass with distinction), G (Pass) or U (Fail).

The examinations of the course consist of the following modes of assessment:

- **Written assignments**
  3 credits, grades: G/U
- **Unsupervised written examination**
  4.5 credits, grades: VG/G/U (determines the final grade)

Students with a permanent disability who have been approved for directed educational support may be offered adapted modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of lectures and laboratory sessions.

The teaching is conducted in English.

7. Course literature and other educational materials

Piper, F. & Murphy, S. (2002). *Cryptography: A very short introduction*. Oxford University Press. ISBN 9780192803153.

Articles and reports according to instructions on the course page on the learning platform.

8. Student influence

Student influence in the course is ensured by means of course evaluation. The students are informed about the results of the evaluation and potential measures that have been taken or are planned, based on the course evaluation.

9. Additional information

The content of the course corresponds completely or partially with the following course(s) and cannot be included in the required credits of a degree qualification:

- IT754A - Practical Cryptology A1N 7.5 credits

Further information about the course, as well as national and local governing documents for higher education, is available on the website of the University of Skövde.