COURSE SYLLABUS

Betrodda system
Trusted Systems
7.5 credits (7,5 högskolepoäng)

Course code: DV2632
Main field of study: Computer Science, Software Engineering
Disciplinary domain: Technology
Education level: Advanced level
Specialization: A1N - Second cycle, has only first-cycle sourse/s as entry requirements

Language of instruction: The language of instruction is English.
Applies from: 2023-08-28
Approved: 2023-03-01

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1. Decision

This course is established by Dean 2022-11-11. The course syllabus is approved by Head of Department of Computer Science 2023-03-01 and applies from 2023-08-28.

2. Entry requirements

Admission to the course require at least 120 credits, of which at least 90 credits are in a technical area, and a minimum of 2 years professional experience within an area related to software-intensive product and/or service development (shown by, for example, a work certificate from an employer).

3. Objective and content

3.1 Objective

The course aims to provide students with the principles, techniques, and technologies of trusted systems (the computer and its service), enable them to understand the process of designing and building secure systems and networks. The course also introduces the Blockchain concept, trustable computing in decentralized systems, and its industrial applications.

3.2 Content

Trusted systems are computer systems that are designed to protect the information, prevent unauthorized access, and ensure data integrity. They are designed to provide secure access to resources and services while protecting the confidentiality of the data. The main content of the course include security, authentication, key management, encryption, digital signatures, access control, auditing, and privacy, Blockchain concept, and Blockchain applications.

4. Learning outcomes

The following learning outcomes are examined in the course:

4.1 Knowledge and understanding

On completion of the course, the student will be able to:
• Explain the types of emerging threats and attacks that can be mitigated by trusted systems.
• Understand how Blockchain can be used to develop secure and tamper-free trusted systems.

4.2 Competence and skills

On completion of the course, the student will be able to:
• Implement the fundamental trusted system techniques.
• Identify potential use cases for Blockchain technology in the industrial environment.

4.3 Judgement and approach

On completion of the course, the student will be able to:
• Evaluate the secure mechanisms that are required during the implementation of trusted systems.
• Evaluate and assess the Blockchain system, and associate them with practices applied in the industry.

5. **Learning activities**

The teaching is organized around online lectures, together with written material, literature, and research articles. Throughout the course, communication, feedback, and discussions with teachers and fellow participants will take place through email and the course's online learning platform.

6. **Assessment and grading**

Modes of examinations of the course

Code	Module	Credits	Grade
2310	Written assignment	3.5 credits	GU
2320	Laboratory Session 1	2 credits	GU
2330	Laboratory Session 2	2 credits	GU

The course will be graded G Pass, UX Fail, supplementation required, U Fail.

The information before a course occasion states the assessment criteria and make explicit in which modes of examination that the learning outcomes are assessed.

An examiner can, after consulting the Disability Advisor at BTH, decide on a customized examination form for a student with a long-term disability to be provided with an examination equivalent to one given to a student who is not disabled.

7. **Course evaluation**

The course evaluation should be carried out in line with BTH:s course evaluation template and process.

8. **Restrictions regarding degree**

The course can form part of a degree but not together with another course the content of which completely or partly corresponds with the contents of this course.

9. **Course literature and other materials of instruction**

Materials such as research articles and other course materials, as well as recommendations for further reading, will be made available through lectures and the course platform.