**Blekinge Institute of Technology**
Department of Software Engineering

**Revision:** 1
**Reg.no:** BTH-4.1.14-0149-2022

# COURSE SYLLABUS

## Säkerhetsinventering för mjukvaruutveckling

## Security Inventory for Software Development

## 3 credits (3 högskolepoäng)

**Course code:** PA2587
**Main field of study:** Software Engineering, Computer Science
**Disciplinary domain:** Technology
**Education level:** Second cycle
**Specialization:** A1N - Second cycle, has only first cycle course/s as entry requirements

**Language of instruction:** English
**Applies from:** 2022-08-29
**Approved:** 2022-03-01



### 1. Decision

This course is established by Dean 2021-11-30. The course syllabus is approved by Head of Department of Software Engineering 2022-03-01 and applies from 2022-08-29.

### 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 purpose of the course is to show how security practices can be integrated into different software development processes (traditional, agile, continuous) and how to assess the maturity of the integration. The student will learn about different models, with a focus on a specific one touching upon security practices during software design, implementation, verification, and operation. In order to take different backgrounds and previous knowledge of the students into account, the course also covers the necessary background information on classical and security-oriented software development process models. The course enables students to assess the maturity of secure software development processes based on a model.

#### 3.2 Content

The consideration of security aspects during the various phases of software development is still in its infancy in many organizations and the potential of security by design to build high-quality software components is not exploited. Thus, it has become essential for successful software development organizations and teams to consider and integrate security practices into all phases of their software development process. This course provides students with knowledge and skills how to assess and improve the maturity of security practices in their traditional, agile or continuous software development processes. The course is centered around the one of the maturity models—e.g., the Software Assurance Maturity Model (SAMM), which is an open framework developed by the OWASP for all types of organizations to analyze and improve their software security posture. In addition, background information on secure software development processes and security practices during software design, implementation, verification, and operation is covered.

The course consists of the following three modules:
- Overview of Secure Software Development Process Models
- Focus on a maturity model for secure software assurance (e.g., SAMM)
- Overview of Security Practices

### 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:
- Understand available security-oriented process models and security practices
- Analyze the differences between security-oriented process models

### 4.2 Competence and skills

On completion of the course, the student will be able to:

• Apply a model to evaluate the maturity of secure software development processes

## 5. Learning activities

The teaching is organized around online lectures, pre-recorded videos, together with written material, literature, and research literature. The students will perform a concrete software security assessment and discuss it with other students and the lecturers. 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 |
|---|---|---|---|
| 2210 | Project Assignment | 3 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 wells as recommendation for additional reading, are shared via the courses ´online platform.