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

# COURSE SYLLABUS

# Mjukvarutestning

## Software Testing

## 7,5 ECTS credit points (7,5 högskolepoäng)

**Course code:** PA2552
**Educational level:** Second cycle
**Course level:** A1N
**Field of education:** Technology
**Subject group:** Computer Technology

**Subject area:** Software Engineering
**Version:** 6
**Applies from:** 2017-08-28
**Approved:** 2017-02-20

**1 Course title and credit points**
The course is titled Software Testing/Mjukvarutestning and awards 7,5 ECTS credits. One credit point (högskolepoäng) corresponds to one credit point in the European Credit Transfer System (ECTS).

**2 Decision and approval**
This course is established by Dean 2016-09-01. The course syllabus was revised by Head of Department of Software Engineering and applies from 2017-08-28.
Reg.no: BTH-4.1.1-0163-2017

**3 Objectives**
Testing is vital software engineering activity, but it is often challenging to perform software testing in an efficient and effective manner. The objectives of this course are for participants to appreciate how testing can improve software quality when effectively integrated into the software engineering processes, understand how this can be achieved using both established and novel software testing techniques, and gain practical experience of tools that support and automate these techniques.

**4 Content**
The course is organized into 5 themes:
1. Software Testing Foundations
2. Supporting Development
3. Evaluating Business Qualities
4. Supporting Continuous Engineering
5. Evaluating Technical Qualities

Theme 1 introduces the value, purpose, and core principles of software testing.
Themes 2 to 5 consider testing techniques in four different contexts that are distinguished by the nature of qualities that are evaluated and how the testing supports the software engineering process.

**5 Aims and learning outcomes**
*Knowledge and understanding*
On completion of the course the student will be able to:
• explain the value and roles of software testing in software engineering
• describe appropriate testing techniques based on the qualities to be evaluated and the context of the testing in the engineering process
*Skills and abilities*
On completion of the course the student will be able to:
• apply at least two different testing techniques and interpret the results provided by these techniques
• identify and use suitable tools to facilitate testing
*Values and Attitudes*
On completion of the course the student will be able to:
• reflect on the benefits, assumptions, and limitations of testing techniques
• critically analyse research from academia and industry on software testing

**6 Learning and teaching**
The course uses a "flipped classroom" approach to learning and teaching. Instructional content for is provided online as video lectures, interviews, research articles etc., while on-campus teaching sessions will focus on the in-depth discussion of key concepts and the application of testing techniques. A short formative assessment provides feedback on the student's understanding of each theme ("assignments" module).
As a summative assessment ("project" module), students work in small groups to apply at least two of the testing techniques covered during the course to a real-world software system; identify and use appropriate tools; interpret the results; and reflect on the benefits, assumptions, and limitations of the techniques used.
English

**7 Assessment and grading**
*Examination of the course*

| Code | Module | Credit | Grade |
|---|---|---|---|
| 1710 | Assignments | 2.5 ECTS | G-U |
| 1720 | Project Assignment | 5 ECTS | G-U |

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

**8 Course evaluation**
The course coordinator is responsible for systematically gathering feedback from the students in course evaluations and making sure that the results of these feed back into the development of the course.

**9 Prerequisites**
Completed courses of at least 120 ECTS credits of which 90 credits must be in the following areas: Software Engineering, Computer Science. At least 30 credits must be in one or more of the following areas: Programming, Object-oriented Systems, Software Design, Data Structures and Algorithms, Database Technology, Data Communications, Real Time Systems, Operating Systems. In addition, a completed course of at least 7.5 credits in Software Engineering or a Team Software Engineering Project is required.

**10 Field of education and subject area**
The course is part of the field of education and is included in the subject area Software Engineering.

**11 Restrictions regarding degree**
The course cannot form part of a degree with another course, the content of which completely or partly corresponds with the contents of this course.

**12 Course literature and other teaching material**
Introduction to Software Testing (Second Edition)
Authors:?Paul Ammann and Jeff Offutt
Publisher: Cambridge University Press, 2017
ISBN (hardback): 978-1-107-17201-2
Testing in Scrum
Author: Tilo Linz
Publisher: Rocky Nook, 2014
ISBN (paperback): 978-1-937538-39-2
A compendium of video lectures and relevant research articles is provided via a virtual learning environment.
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