



## COURSE SYLLABUS

### Utveckling av mobila applikationer Mobile Applications Development 7.5 credits (7,5 högskolepoäng)

**Course code:** PA1469

**Main field of study:** Software Engineering, Computer Science

**Disciplinary domain:** Technology

**Education level:** First cycle

**Specialization:** G2F - First cycle, has at least 60 credits in first cycle course/s as entry requirements

**Subject area:** Computer Technology

**Language of instruction:** English

**Applies from:** 2019-09-02

**Approved:** 2019-03-01

#### 1. Decision

This course is established by Dean 2018-11-01. The course syllabus is approved by Head of Department of Software Engineering 2019-03-01 and applies from 2019-09-02.

#### 2. Entry requirements

Admission to the course requires 60 credits completed in the main field of Computer Science or Software Engineering.

#### 3. Objective and content

##### 3.1 Objective

The purpose of the course is for to gain skills in developing mobile applications (apps) with good usability.

##### 3.2 Content

The course encompasses the following topics:

- Client hardware (Desktop vs. Mobile) and its implications on Software Engineering decisions
- Android development with Java/Kotlin
- iOS development with Swift
- RESTful and Non-RESTful apps
- Incorporating web/cloud services
- Mobile sensors
- Security and trust management
- Privacy and ethics
- Usability and accessibility

#### 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:

- discuss the commonalities and differences between desktop and mobile application development,
- discuss which and how software engineering tasks are affected by these differences.

##### 4.2 Competence and skills

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

- architect, design, implement and test a simple mobile application,
- use the capabilities of handheld devices to develop applications that cover the spectrum of their unique hardware features that are not available on stationary devices.

##### 4.3 Judgement and approach

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

- evaluate the capabilities of handheld devices and judge whether and how user needs can be fulfilled by those capabilities,
- discuss the implications of mobile devices on privacy and security issues, as well as ethical concerns.

## 5. Learning activities

The teaching consists of lectures in which the course topics are presented. The students are expected to participate through discussions and questions, based on their experiences working on the course project. The course project consists of specifying the requirements, designing and architecting, implementing and testing, and finally demoing a mobile application. Students can work in groups of two in the course project and deliver two written reports (a requirements specification and a design document) and present the implemented application in a live demo. A final report, which is an individual assignment, shall reflect upon the development process, the outcome (final product) and the team collaboration.

## 6. Assessment and grading

Modes of examinations of the course

Code	Module	Credits	Grade
I910	Written report 1	1 credits	GU
I920	Written report 2	2 credits	GU
I930	Oral presentation	2.5 credits	AF
I940	Written report 3	2 credits	AF

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Fail, supplementation required, F Fail.

The final grade is the weighted average of the grades for modules oral presentation and written report 3.

The course information for each course revision should include the assessment criteria and make explicit in which modes of examination that the learning outcomes are assessed.

## 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

Marsicano, Kristin, Bill Phillips, and Chris Stewart. Android Programming: The Big Nerd Ranch Guide, Third Edition, Big Nerd Ranch Guides, 2017.

Hillegass, Aaron, and Christian Keur. iOS Programming: The Big Nerd Ranch Guide, 6th Edition, Big Nerd Ranch Guides, 2016.

Both books are available in digital form in the BTH library. In addition to use the above books as reference works, the students are expected to find and read articles, online documentation and guidelines on their own.

## 10. Additional information

This course replaces the course DVI431