

IS1250 Programming Mobile Devices

Professor: Adel Amri

Language of instruction: English – **Number of hours:** 36 – **ECTS:** 3

Prerequisites: To have completed the courses IS1220 or courses programming JAVA equivalent.

Period: S8 Elective 11 March to June IN28IE4, SEP8IE4

Course Objectives

The main objective of the course is for students to learn the design, implementation, and deployment of software applications for mobile devices (tablets, smart-phones) under the Android Platform. A brief introduction to the development of applications under the iOS platform (given in the form of a tutorial) will also be presented during the course.

On completion of the course, students should be able to

master Java programming under the Android platform, Graphical User Interfaces, service-oriented code design and implementation.

Course Contents

- ✧ Introduction: background and presentation of the different platforms for the development of applications for mobile devices
- ✧ The Android platform: architecture, the Android SDK under Eclipse
- ✧ Life-cycle and internal structure of an Android application. Basic concepts: *building blocks, Activity Broadcast, Receivers, Content Providers, Services*.
- ✧ Android communication framework: *Intents, Intent Filters, Pending Intents*, inter process communication.
- ✧ User interface: MVC model and event handling (Android User Interface)
- ✧ Reuse and interoperability
- ✧ Use of mobile resources: position sensors, GPS, camera, touch screen, etc.
- ✧ Data services: file access, databases (*Content Provider, SQLite*)
- ✧ Multimedia-oriented services
- ✧ Application security on Android

Course Organization

Lectures: 18 hr, tutorials: 18 hr

Instructors: Adel Amri, Paolo Ballarini, Pascale Le Gall, Philippe Livolsi

Two classes of 20 students each will be taught in parallel, one in French, one in English.

Teaching Material and Textbooks

- ✧ Copies of course slides
- ✧ Project and labwork topics

Evaluation

Students will create an application under Android. The work will be performed individually or in teams of two students, on the bases of project or practical labwork topics. The final mark will be based on a) the evaluation of the application designed, and b) a quiz.