Mobile device programming - course description

General information

Course name	Mobile device programming
Course ID	11.3-WE-INFP-MDP-Er
Faculty	Faculty of Computer Science, Electrical Engineering and Automatics
Field of study	Computer Science
Education profile	academic
Level of studies	First-cycle Erasmus programme
Beginning semester	winter term 2021/2022

Course information

Semester	6
ECTS credits to win	4
Course type	optional
Teaching language	english
Author of syllabus	• dr inż. Piotr Powroźnik

Classes forms

The class form	Hours per semester (full-time)	Hours per week (full-time)	Hours per semester (part-time)	Hours per week (part-time)	Form of assignment
Lecture	30	2	-	-	Credit with grade
Project	15	1	-	-	Credit with grade

Aim of the course

Introducing students to the issues of programming interactive applications for the Android platform.

Development of basic skills in the area of touch user interface.

Understanding the limitations resulting from the construction of mobile devices.

Development of basic skills in the field of designing mobile applications oriented to portability.

Prerequisites

Fundamentals of Android system programming

Scope

Working in the background (Background Tasks).

Triggering, scheduling and optimizing background tasks.

Issues related to save persistent application data, Permissions, Performance and Security, Firebase and AdMob.

The use of system services - accelerometer, GPS position reader, camera.

Communication with peripheral devices via Bluetooth.

Services available as part of the Google Play - geofencing, location, location settings, close communication services, multimedia support in the network.

Teaching methods

Lecture: conventional lecture, discussion, consultation.
Project: project exercises, group work, discussion, consultation.

Learning outcomes and methods of theirs verification

Outcome description	Outcome symbols	Methods of verification	The class form
Can write an application that reads the current position using location services (GPS/GSM/IP)		• a project • an evaluation test • an observation and evaluation of the student's practical skills • an ongoing monitoring during classes	• Lecture • Project
Can write an application that detects Bluetooth devices and make a connection with them		• a project • an evaluation test • an observation and evaluation of the student's practical skills • an ongoing monitoring during classes	• Lecture • Project

Outcome description	Outcome symbols	Methods of verification	The class form
Can write an application that uses Google Play services		• an evaluation test • an observation and evaluation of the student's practical skills • an ongoing monitoring during classes	• Lecture • Project
Can write an application that uses multimedia streams from the network		• an evaluation test • an observation and evaluation of the student's practical skills • an ongoing monitoring during classes	• Lecture • Project

Assignment conditions

Lecture – the passing condition is to obtain a positive mark from the final test.

Project – the passing condition is to obtain positive marks for all project tasks as scheduled.

Calculation of the final Grade: lecture 50% + project 50%

Recommended reading

1. Phillips B., Stewart C., Marsicano K.: Android Programming: The Big Nerd Ranch Guide (3rd Edition) (Big Nerd Ranch Guides) 3rd Edition, Big Nerd Ranch Guides; 2017
2. Griffiths D., Griffiths D.: Head First Android Development: A Brain-Friendly Guide 2nd Edition, O'Reilly Media; 2 edition, 2017
3. MacLean D., Komatineni S., Allen G.: Pro Android 5 5th ed. Edition, Apress; 5th ed. edition, 2015
4. Yener M., Dundar O.: Expert Android Studio 1st Edition, Wrox; 1 edition, 2016

Further reading

1. Gerber A., CraigC. : Android Studio. Wygodne i efektywne tworzenie aplikacji. Helion, Gliwice, 2016
2. DiMarzio J. F.: Tworzenie gier na platformę Android 4. Helion, Gliwice, 2013
3. Guihot H.: Optymalizacja wydajności aplikacji na Android, Helion, Gliwice, 2013
4. Gerber A., Craig C.: Android Studio. Wygodne i efektywne tworzenie aplikacji, Helion, Gliwice 2016
5. Taskos G.: Xamarin. Tworzenie aplikacji cross-platform. Receptury, Helion, Gliwice, 2017
6. Eckel B.: Thinking in Java. Edycja polska. Wydanie IV, Helion, Gliwice, 2006

Notes

Modified by dr inż. Piotr Powroźnik (last modification: 14-07-2021 13:14)