POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Programming of Mobile Terminals [S2EiT1E-TIT>PTM]

Course

Field of study	Year/Semester
Electronics and Telecommunications	1/2
Area of study (specialization)	Profile of study
Information and Communication Technologies	general academic
Level of study	Course offered in
second-cycle	English
Form of study	Requirements
full-time	elective

Number of hours

Lecture	Laboratory classes	Other
30	15	0
Tutorials	Projects/seminars	
15	0	

Number of credit points

4,00

Coordinators

dr inż. Marcin Rodziewicz
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Lecturers

Prerequisites

The student should possess a basic knowledge on programming, architecture of computer systems and operating systems. The student should also have knowledge on current wireless communications systems. The student should be able to implement basic algorithms and be able to find necessary information from different resources. The student should also be able to work in a team.

Course objective

The main goal of the course is to develop student"s skills in programming of mobile terminals. After completing the course students will be able to implement their own application, ready for release in Internet markets. Particular attention will be put on the devices using Android system.

Course-related learning outcomes

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Theoretic knowledge (based on the lectures) will be checked during a test or oral verification scheduled on the last lecture.
The test consists of pen and multiple-choice questions. Passing grade threshold: 50%.

The oral verification of knowledge is based on answering 3-5 questions. Each question will be graded using the 2-5 scale. The final grade will be the average of grades for individual questions. The passing
grade is given if the average is higher than 3.0.

Laboratories will be credited based on the tasks assigned during laboratories or by submitting a project. Each task will be graded
using the 2-5 scale. The final grade will be the average of grades for individual tasks or the grade given for the project.

Programme content

1. Development environment
2. Kotlin language
3. User interface development
4. Basic components of applications
5 . Storing data in applications
6. Network operations
7. Popular libraries used in programming of Android devices

Course topics

The lecture program includes:
1. Description of the development environment for the Android platform.
2. Introduction to the Kotlin language
3. Description of the application project structure and resources used.
4. A description of the principles of application UI design and the associated various layouts and
basic elements of application appearance.
5. Description of the concept of an Activity and its life cycle.
6. Description of way of users' interaction with the application.
7. Description of Fragment concept and methods of managing fragments.
8. Description of the principles of building and debugging applications
9. Description of the concept of intent and navigation using a navigation graph.
10. Description of the application manifest.
11. Description of the principles of working with threads and processes.
12. Description of data storage methods e.g. Room library.
13. Description of ways to communicate with external services using HTTP.
14. Description of selected additional tools useful in application development: Google services, Firebase,
The lab program includes:
1. Getting acquainted with the Android Studio development environment
2. Learning the basics of creating an application's appearance
3. Getting to know the principles of creating application components (activities, fragments, dialog boxes, lists)
4. Getting to know libraries for REST API communication
5. Getting acquainted with Google services available for the Android platform.

Teaching methods

1. Lecture: Multimedia presentation and discussion
2. Laboratories: Performing tasks given in instructions provided by the supervisor
3. Tutorials: Presentation with code and application examples

Bibliography

https://developer.android.com

Breakdown of average student's workload

	Hours	ECTS
Total workload	0	0,00
Classes requiring direct contact with the teacher	0	0,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	0	0,00