SYLLABUS

Name: ***Mobile Technologies (InfAAu>SI5MT19)***
Name in Polish:
Name in English: ***Mobile Technologies***

Information on course:

Course offered by department: Faculty of Automatic Control, Electronics and Computer Science
Course for department: Silesian University of Technology

Default type of course examination report:

EGZ

Language:

English

Course homepage:

https://platforma2.polsl.pl/rau2/course/view.php?id=1037

Short description:

The aim of the course is to present issues related to the developing application for mobile devices with Android and iOS systems. During the course, students will acquire the skills to design and develop applications and user interfaces for mobile devices equipped with selected operating systems. As part of the lectures and laboratory classes, popular programming languages for mobile devices will be presented.

Description:

Lectures:
1. The architecture of the iOS and Android systems.
2. Designing ergonomic user interfaces in mobile systems.
3. Swift and Kotlin programming language
4. Databases in mobile systems.
5. Recognition of gestures in mobile systems.
6. 2D and 3D graphics in mobile systems.
7. Support for sensors, cameras and localization.
8. Performance and security of mobile applications.

Laboratory classes:
1. Development environment (IDE) for Android and iOS systems. SDK for mobile systems.
2. Designing user interfaces of mobile applications.
3. Running and debugging the application in the emulator and on mobile devices.
4. Graphics and multimedia in mobile systems.
5. Handling gestures on mobile devices.
6. Support for sensors and location mechanisms in mobile systems.

Number of hours with the direct participation of academic teachers:
Number of ECTS points: 3
Total hours: 90 h (60 contact hours / 30 studnet's own work)
Lectures: 30 h
Laboratory classes: 30 h
Student's own work: preparation for the laboratory classes and for the exam

Including:
Number of ECTS points obtained during classes with the direct participation of academic teachers: 2

Bibliography:

1. Matt Neuburg. „iOS Programming Fundamentals with Swift. Swift, Xcode, and Cocoa Basics”, O'Reilly.
2. Apple Swift language. https://docs.swift.org/swift-book/.
3. Jawwad Ahmad, Jerry Beers et al. „iOS by Tutorials: Learning the new iOS APIs with Swift 4”.
4. Neil Smyth. „iOS App Development Essentials: Learn to Develop iOS Apps with Xcode 9 and Swift 4”.
5. D. Mark, J. Nutting, K. Topley, F. Olsson, „Beginning iPhone Development with Swift”, Apress.
6. Banks, C. S. Edge: „Learning iOS Security”, Packt Publishing, 2015.

Learning outcomes:

• KNOWLEDGE: THE GRADUATE KNOWS AND UNDERSTANDS
◦ Architecture of selected mobile systems. (K1A_W10)
◦ Swift and Kotlin programming languages. (K1A_W13)
◦ Basic methods, techniques and tools used for developing mobile applications for Android and iOS. (K1A_W10)

• SKILLS: THE GRADUATE IS ABLE TO
◦ Develop efficient and secure mobile applications in Kotlin and Swift. (K1A_U23)
◦ Design ergonomic and useful user interfaces for mobile applications. (K1A_U23)
◦ Use selected sensors and location mechanisms in mobile application. (K1A_U23)
◦ Develop mobile applications with 2D and 3D graphics. (K1A_U23)
◦ Store data in mobile databases. (K1A_U23)

Assessment methods and assessment criteria:

Passing all laboratory classes and obtaining a positive grade from the final exam.
The final grade for the course is the weighted average of the final laboratory grade (weight 1) and the final grade from the written or oral exam (weight 2).
Method of checking learning outcomes: laboratory exercises or exam questions.
The syllabus is valid from academic year 2024/2025 and its content cannot be changed during the semester.

Course credits in various terms:

<without a specific program>			
Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	3	2020/2021-Z	

Informatics, full-time first degree engineering studies 7 sem. (InfAAu-SI7)			
Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	3	2020/2021-Z	