University of Gdańsk

Subject card

Subject name and code	Mobile Applications Development, PG_00178075		
Field of study	Informatics and Econometrics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	7.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Dariusz Kralewski	
	Teachers		

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	60.0	0.0	0.0	75
	E-learning hours included: 0.0						

Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
	Number of study hours	75	4.0	96.0	175

Subject objectives	- Preparing students to write mobile applications for Android and IOS platforms- Practical implementation of projects on the Android and IOS platform

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[IiEL3_W06] To an advanced degree, the student knows and understands the processes and methods of creating, developing, and providing appropriate conditions for using informatics or statistics tools, particularly those that improve human and organizational functioning.	- The student knows the specific rules for creating mobile applications - The student identifies the individual phases of the life cycle of mobile applications for the Android platform - The student knows the rules for creating a user interface based on fragments - The student knows the rules for creating clean code	[SW4] test/exam - oral or written
	[IiEL3_U02] Students can select or construct econometrics, informatics or statistics tools and apply them to describe and solve economic and social problems.	- The student creates functionally correct mobile applications for the Android platform - The student creates readable and accessible code - The student uses available libraries to solve problems	[SU5] implementation of a problem task [SU6] demonstration of practical skills
	[IiEL3_U12] The student can design and implement IT systems to enhance business operations and effectively utilize modern ICT technologies for management and business communication.	- The student verifies the correctness of the code and application using unit and functional tests - The student uses the RESTful Services of the back-end server to exchange data in a distributed environment	[SU5] implementation of a problem task [SU6] demonstration of practical skills

Subject contents	Problems of the lecture 1. Basics and specifics of mobile systems, positioning systems of mobile devices, 2. Communication methods of mobile systems, basics of mobile device architecture, 3. Basics of mobile operating systems, classification of mobile applications (web, native and 4. hybrid), 5. The idea of Responsive Web Design, Hybrid mobile application design environments, 6. System design and characteristics, application life cycle in the system, 7. Basic components of the application, 8. Android mobile application design tools. 9. Ways to use selected hardware resources of a mobile device 10. Use of cloud resources in mobile applications. 11. Distribution of own applications Problems of exercises / conversation / laboratoryAndroid 1. Android Studio and project structure 2. UI elements 3. Resources 4. Creating layouts 5. Material Design and styling 6. Activities, Fragments and lifecycle 7. Creating a list of objects 8. Dialog boxes and notifications 9. Multimedia display and animation 10. Internet connection and downloading 11. Preferences and application settings 12. Xamarin 13. Creating a project and its structure 14. Graphical user interface for applications 15. Xamarin Forms 16. Building reusable code 17. Creating animations and handling user gestures 18. Creating universal components that work with SQLite database and REST service 19. Preparation and publication of the application Ionic 1. Configuration of the development environment 2. Apache Cordova basics 3. Building a card-based application 4. Loading data via HTTP service 5. Ionic navigation model React Native 1. Creating interfaces for native components in React Native 2. Developing custom React Native applications and components 3. APIs and modules created by the React user community 4. Platform-specific components in cross-platform applications 5. State management in a large application using the Redux library in Java 6. Translated with www.DeepL.com/Translator (free version)
Prerequisites and co-requisites	Basic knowledge of computer programming and software, knowledge of object-oriented programming principles, ability to program in Java
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
Test	51.0%	40.0%
Completion of a final project – independent solution of a practical problem in a given field (e.g. business) using the software learned during the course.	51.0%	60.0%

Recommended reading	Basic literature	A.1. used during classes 1. Szkolenie dla programistów Android: http://developer.android.com/training/index.html 2. Sebastian Mysakowski, React Native. Zostań programistą aplikacji mobilnych, Helion, 2021 3. Marcin Płonkowski, Android Studio. Tworzenie aplikacji mobilnych, Helion, 2017 4. George Taskos, Xamarin. Tworzenie aplikacji cross-platform. Receptury, Helion 2020 5. Wei-Meng Lee: Beginning Android 4 Application Development, Wiley 2012 A.2. studied independently by the student 1. Robert C. Martin: Czysty kod. Podręcznik dobrego programisty, Helion 2010
	Supplementary literature	1. Carmen Delessio, Lauren Darcey, Shane Conder, Android Studio w 24 godziny. Wygodne programowanie dla platformy Android. Wydanie IV, Helion, 2016 2. Chris Griffith, Mobile App Development with Ionic, Revised Edition. Cross-Platform Apps with Ionic, Angular, and Cordova, O'Reilly Media, 2021 3. Bonnie Eisenman, React Native. Tworzenie aplikacji mobilnych w języku JavaScript. Wydanie II, Helion, 2018, 4. Steven F. Daniel, Xamarin. Tworzenie interfejsów użytkownika, Helion 2017 5. Belen Cruz Zapata, Android Studio. Podstawy, Helion, 2015
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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