



## Subject card

Subject name and code	Mobile applications programming , PG_00031968						
Field of study	Technical Physics						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group			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	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Theoretical Physics and Quantum Information -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Paweł Syty				
	Teachers		dr inż. Paweł Syty				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	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	45		5.0		25.0	75
Subject objectives	The aim of the course is to acquaint students with methods of creating mobile applications for Android and Windows Phone / 10 systems.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_W04] Has enhanced knowledge of mathematical, numerical and simulation methods applied in the description and modelling of physical phenomena.	Student is able to design a mobile application using selected mathematical, numerical and simulation methods.			[SW1] Assessment of factual knowledge		
	[K7_U06] Can apply obtained knowledge of physics to exact sciences, natural and technical sciences.	The student is able to use his knowledge of physics to create a mobile application on a chosen topic.			[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
	[K7_K05] Can communicate and present results of own work and transfer information in a commonly understandable manner.	The student is able to present his project. The student is able to work in a group.			[SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills		
Subject contents	1. Preliminary issues. Overview of operating systems (Android, iOS, Windows Phone/10, Symbian), intended for mobile devices. 2. Android and Windows Phone / 10. General overview and presentation system. System architecture. 3. Android. The development environment. Emulator system. ADB. The first application. 4. Android. Anatomy of applications. The use of the manifesto. 5. Android. Resource management applications. Preparing applications in different languages and for different hardware configurations (tablets, smartphones, etc.). 6. Android and Windows Phone / 10. User interface design. 7. Android. Working with the SQLite database. 8. Android. The use of notification, sound and vibration. Creating widgets. 9. Android and Windows Phone / 10. The process of application development. 10. Android and Windows Phone / 10. Dissemination applications. 11. Android and Windows Phone / 10. Discussion of sample applications.						
Prerequisites and co-requisites	The ability to object-oriented programming.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Evaluation of final project	50.0%	50.0%
	Evaluation of the work in the classroom	50.0%	50.0%
Recommended reading	Basic literature	1. J. Horton, "Leraning JAVA by Building Android Games", PACKT, 2015	
	Supplementary literature	1. Software Developer Journal (english version), selected issues 2009-2016	
	eResources addresses	Adresy na platformie eNauczenie:	
Example issues/ example questions/ tasks being completed	Create a mobile application, executing simple mathematical / simulation/ technical problems.		
Work placement	Not applicable		