



## Subject card

Subject name and code	Advanced iOS Application Development, PG_00063917						
Field of study	Informatics						
Date of commencement of studies	February 2026	Academic year of realisation of subject			2026/2027		
Education level	second-cycle studies	Subject group			Optional subject group Specialty 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	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department Of Geoinformatics -> Faculty Of Electronics Telecommunications And Informatics -> Wydział Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor	mgr inż. Tomasz Idzi					
	Teachers	mgr inż. Tomasz Idzi					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	15.0	30
	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	30	6.0		39.0		75
Subject objectives	The goal is to familiarize the students with two operating systems made by Apple corporation. We also present iOS app development (iOS is one of the two dominant mobile OSs). Subject broadens the knowledge gained by students in the course "SYSTEM OPERACYJNY MAC OS X i iOS" from the 4th semester. In addition, the laboratories have two goals: to let the students use the APIs presented during the lecture, and to improve their overall programming skills by 'forcing' them to learn a new programming language (Swift) and design paradigms.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, making assessment and critical analysis of the prepared software as well as a synthesis and creative interpretation of information presented with it	Students have to create the app for iOS which will make request to web service, get data, parse and display in specific user interface.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
	[K7_W08] knows and understands, to an increased extent, the fundamental dilemmas of modern civilisation, the main development trends of scientific disciplines relevant to the field of education	Students know the architecture of macOS and IOS operating systems, and can compare them with *nix OSs. Students develop applications, which are using digital maps, for macOS and iOS systems.	[SU4] Assessment of ability to use methods and tools [SW1] Assessment of factual knowledge
	[K7_U07] can apply advanced methods of process and function support, specific to the field of study	One of the technology which students use during app development is Core Data - object graph and persistence framework provided by Apple. What is more, they have to cover the app by unit and UI tests.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
[K7_U12] is able, to an increased extent, to analyze the operation of components and systems related to the field of study, as well as to measure their parameters and study their technical characteristics, and to plan and carry out experiments related to the field of study, including computer simulations, interpret the obtained results and draw conclusions	Students, while creating an iOS app, have to debug it multiple times to find and fix the bug. What's more, during the course they are familiar with advanced ways of debugging in the Xcode development environment.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools	
Subject contents	<ul style="list-style-type: none"> <li>- Introduction to Mac OS X and iOS systems</li> <li>- Swift: classes, objects</li> <li>- Swift: properties, protocols</li> <li>- Swift: values, collections, closures</li> <li>- Design patterns</li> <li>- Memory management</li> <li>- Data management</li> </ul>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Seminar	50.0%	50.0%
	Examination	50.0%	50.0%

Recommended reading	Basic literature	1. Tomasz Idzi; Lecture materials, Online, 2024;  2. Tomasz Idzi; Lab materials, Online, 2024;  3. The Swift Programming Language; Online (developer.apple.com), 2024  4. Develop in Swift; Online (developer.apple.com), 2024
	Supplementary literature	1. Swift - Apple Development (III) - Hemant Kumar, 2024
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> <li>- Developing calculator application</li> <li>- Developing application which uses UICollectionView</li> <li>- Developing application which uses files operations, UITableView and maps</li> <li>- Developing drawing application for iPad device</li> <li>- Developing application which uses Core Data</li> <li>- Gesture recognition in mobile application</li> </ul>	
Work placement	Not applicable	

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