GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Advanced iOS application development, PG_00048302						
Field of study	Informatics						
Date of commencement of studies	February 2023		Academic year of realisation of subject	2023/2024			
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	2		Language of instruction	Polish			
Semester of study	3		ECTS credits	4.0			
Learning profile	general academic profile		Assessment form	exam			
Conducting unit	Department of Geoinformatics -> Faculty of Electronics, Telecommunications and Informatics						
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		8.0		62.0	100
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 (Objective-C) 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.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
[K7_U06] can analyse the operation of components, circuits and systems related to the field of study; measure their parameters; examine technical specifications; interpret obtained results and draw conclusions	Thanks to added unit tests, students can check app performance and based on it optimize the app.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
[K7_W41] Knows and understands, to an increased extent, the standards, production methods, life cycle and development trends of software as well as information systems and applications.	During app development students learn specific technologies available on iOS.	[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.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
[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 Mac OS X and IOS operating systems, and can compare them with *nix OSs. Students develop applications, which are using digital maps, for MacOS X and iOS systems.	[SW1] Assessment of factual knowledge [SU4] Assessment of ability to use methods and tools

Subject contents

- Introduction to Mac OS X and iOS systems

- Objective-C: classes, objects

- Objective-C: properties, protocols

- Objective-C: values, collections, blocks

- Design patters

- Memory management

- Data management

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, 2015; 2. Tomasz Idzi; Lab materials, Online, 2015; 3. Programming with Objective-C; Online (developer.apple.com), 2014 4. Learn Objective-C; Online (http://cocoadevcentral.com), 2014
	Supplementary literature	1. Programming in Objective-C; Stephen G. Kochan; 2013 2. Xcode 5 Start to Finish: iOS and OS X Development; Fritz Anderson; 2014
	eResources addresses	Adresy na platformie eNauczanie: Tworzenie Zaawansowanych Aplikacji iOS [2024] - Moodle ID: 38066 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38066
Example issues/ example questions/ tasks being completed	- Developing calculator application - Developing application which uses UICollectionView - Developing application which uses files operations, UITableView and maps - Developing drawing application for iPad device - Developing application which uses Core Data - Gesture recognition in mobile application	
Work placement	Not applicable	