

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Operatins system MAC OS X i iOS, PG_00047669							
Field of study	Informatics							
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027			
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study 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	4		ECTS credits		2.0			
Learning profile	general academic profile		Assessment form		assessment			
Conducting unit	Department Of Geoinformatics -> Faculty Of Electronics Telecommunications And Informatics -> Wydziały Politechniki Gdańskiej							
Name and surname	Subject supervisor		dr hab. inż. Zbigniew Łubniewski					
of lecturer (lecturers)	Teachers mgr inż. Tomasz Idzi							
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	:t	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0		0.0	30
	E-learning hours included: 0.0							
Learning activity and number of study hours	Learning activity	/ity Participation in didactic classes included in study plan		Participation in consultation hours		Self-study		SUM
	Number of study hours	30 2.		2.0		18.0		50
Subject objectives	The goal is to familiarize the students with two operating systems made by Apple corporation. Mac OS X is a powerful desktop OS and it should be compared with Windows and *nix systems, which are used in majority of classes. We also present iOS app development (iOS is one of the two dominant mobile OSs). 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 and design paradigms.							

Learning outcomes	Course outcome	Subject outcome	Method of verification			
	[K6_U03] can design, according to required specifications, and make a simple device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment	Based on lab instruction, students make mobile app for iOS with different level of complexity for data model, technology, user interface.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools			
	[K6_W04] knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	During develop applications for iOS students building user interface based on Apple's documentation (Human Interface Guidelines)	[SW1] Assessment of factual knowledge			
	[K6_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	Based on experience from lectures and labs, students have more and more individual tasks to develop.	[SU4] Assessment of ability to use methods and tools			
Subject contents	Architecture of Mac OS, application	availabilty, APple mobile devices.				
	Mac OS X: File system, executables, GUI, dynamic libraries, drivers, kernel, application development, Objective C					
	Cocoa framwork development, Model view design pattern.					
	Cocoa: notifications, panels, resources, XIB files,					
	Cocoa: Views, 2D drawing, text formatting, copy-paste, undo					
	Cocoa: Netywork access, Open GL					
	Cocoa: Core Data					
	Cocoa Touch: iOS app development					
Prerequisites and co-requisites	Object-oriented programming.					
	C language.					
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade			
and criteria	Laboratory	50.0%	40.0%			
	Exams	50.0%	60.0%			

Recommended reading	Basic literature	Signh Amit: MAC OS X Internals, Helligas AAron, Preble Adam: Cocoa programming for Mac OS X Adison Wesley, 2002 Apple documentation.		
	Supplementary literature	N/A		
	eResources addresses	Adresy na platformie eNauczanie:		
Example issues/ example questions/ tasks being completed	eResources addresses Adresy na platformie eNauczanie: How to define an array (NSArray) with three strings? How will the declaration of a static method of receiving a parameter of type int, and returns a string (think of the name). What effect will a method call on a zero (nil) pointer? How are collections realtaed to memory management? What is the practical use of NSStringFromSelector? What is the property lists? What is? What are cycles of references when you can arise and how to deal with them in objective-C? What is the role of outlets? How to operate? In what states can be iOS app? What was happening to her in various states? What features Mac OS X in terms of document management? How do you protect sensitive user data on the iOS platform? Compare NSThreads, NSOperations and GCD.			
Work placement	Not applicable			

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