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 2024	Academic year of realisation of subject	2025/2026
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

Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Zbigniew Łubniewski
	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	15.0	0.0	0.0	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	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.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
	[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
	[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_W03] knows and understands, to an advanced extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum	Students have knowledge about macOS and iOS architecture.	[SW1] Assessment of factual knowledge

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 and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	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	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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