Subject code	Credits
INF4030	6

Course title in Lithuanian

MULTIPLATFORMINIŲ SISTEMŲ INŽINERIJA

Course title in English

ENGINEERING OF MULTIPLATFORM SYSTEMS

Short course annotation in Lithuanian (up to 500 characters)

Kurso metu studentai įgis žinias apie multiplatforminių programinių sistemų specifiką, multiplatforminių aplikacijų reikalavimų inžineriją, multiplatforminių aplikacijų kūrimo būdus, panaudojant kryžminį kompiliavimą, virtualias mašinas, adaptyvių web aplikacijų ir hibridinių aplikacijų kūrimo priemones, įgis multiplatforminių aplikacijų projektavimo, realizavimo, testavimo įgūdžių, naudojant Visual Studio, Cordova, adaptyvių web aplikacijų karkasų kūrimo priemones.

Short course annotation in English (up to 500 characters)

The course provides knowledge of multiplatform software system specifics, requirement engineering for multiplatform applications, methods and technologies for multiplatform application design using cross compiling, virtual machine approach, responsive vs adaptive Web application design as well as hybrid application design approaches. During the course, students develop skills in designing multiplatform applications using Visual Studio, Cordova, responsive Web design frameworks.

Prerequisites for entering the course

Object-oriented programming, Internet technologies

Course aim

The aim of the course is to give the knowledge and develop necessary skills for designing multiplatform applications, including their coding, debugging and testing.

Content

No	Content (topics)
1.	Introduction to multiplatform applications – features, user needs, application areas
2.	Hardware related issues of multiplatform applications – screen, input-output, network connectivity, multimedia
3.	Platform independent vs Platform specific software engineering models
4.	Requirement engineering for multiplatform applications
5.	Cross compiling for multiplatform application design
6.	Virtual machine based multiplatform applications
7.	Multiplatform application development with Web technologies
8.	Responsive vs adaptive Web design approaches
9.	Server side adaptive multiplatform application development
10.	Frameworks for responsive Web design
11.	Hybrid application development approach
12.	Cross-platform tools for coding, debugging and testing hybrid applications. Visual Studio and Cordova.

Distribution of workload for students (contact and independent work hours)

Lectures	**45 hours**
Laboratory work	**30 hours**
Individual student work	**85 hours**
Total:	**160 hours**

Structure of cumulative score and value of its constituent parts

Final written exam (50%), mid-term written exam (15%), and assessment of practical assignments (35%)

Recommended reference materials

No.	Publication year	Authors of publication and title	Publishing house	Number of copies in		
				University library	*Self-study rooms*	*Other libraries*
		Basic materials				
1.	2015	Responsive and Adaptive Web Design. https://studio.uxpin.com/ebooks/ux-design-trends-responsive-adaptive-	UXPin	Free Access on Internet		

		web-design/				
2.	2012	S.Olson, J.Hunter, B.Horgen, K.Goers. Professional Cross-Platform Mobile Development in C#	Wrox	0	1	
3.	2004	S.Allen, V.Graupera, Pro SmartPhone Cross-Platform Development	APress	0	2	
4.	2010	H.Dwivedi, C.Clark, D.Thiel. Mobile Application Security	McGrawHill	1	0	
Supplementary materials						
1.	2014	Cross Platform Development with Xamarin and Visual Studio.	Microsoft Virtual Academy.	Available online: https://mva.microsoft.com/en-us/training-courses/cross-platform-development-with-xamarin-visual-studio-8526?l=6xfur0mz_3204984382		
2.	2007	F.Hirch, J.Kemp, J.Ilkka. Mobile Web Services. Architecture and Implementation.	Wiley			

Course programme designed by

Doc.dr. D.Vitkutė-Adžgauskienė, Department of Applied Informatics