



MODULE DESCRIPTION

Module title	Module code
Mobile phone application development	

Lecturer(s)	Department where the course unit is delivered
Coordinator: Mindaugas Eglinskas	Department of Informatics Faculty of Mathematics and Informatics Vilnius University
Other lecturers:	

Cycle	Type of the course unit
1st (BA)	Optional

Mode of delivery	Semester or period when the course unit is delivered	Language of instruction
Face-to-face	5,7 semesters	Lithuanian

Prerequisites
Prerequisites: Procedural Programming, Object Oriented Programming

Number of credits allocated	Student's workload	Contact hours	Self-study hours
5	130	68	62

Purpose of the module: programme competences to be developed		
<p>The aim of the course unit is to introduce mobile application development technologies and tools for iOS, Android, Windows Phone operating systems, and responsive web design.</p> <p>Generic competences:</p> <ul style="list-style-type: none"> • Communication and collaboration • Life-long learning <p>Subject-specific competences:</p> <ul style="list-style-type: none"> • Knowledge and skills of underlying conceptual basis • Software development knowledge and skills • Technological and methodological knowledge and skills, professional competence 		
Learning outcomes of the module: students will be able to:	Teaching and learning methods	Assessment methods
Develop responsive design web pages. Develop mobile applications, taking into account specifics of mobile device user interface and device constraints. Use modern development tools and mobile infrastructure services while designing, developing, and deploying mobile solutions. Use modern programming languages (Objective-C, Swift) designed for mobile applications.	Problem-oriented teaching, case analysis, discussions, literary reading, tutorials.	Examination in a written form, assignments, tests.

Content: breakdown of the topics	Contact hours						Individual work: time and assignments		Assignments
	Lectures	Tutorials	Seminars	Practice	Laboratory work	Tutorial during LW	Contact hours	Individual work	
1. Introduction to iOS, Android, Windows Phone mobile operating systems, and responsive web design	2				2		4	3	Responsive design web page, Android application, iOS application.
2. Responsive web design, Bootstrap web framework, PhoneGap	2				2		4	3	
3. Windows phone operating system, user interface guidelines	2				2		4	3	
4. Overview of Android operating system	2				2		4	3	
5. Android operating system user interface guidelines, user interface components, "Material design" concept	2				2		4	3	
6. Android resources and support for multiple screen sizes	2				2		4	3	
7. Android activities, fragments, application life-cycle, data storage options	2				2		4	4	
8. Working with web services, maps, threads, analytics, error logging, Google Cloud messaging	2				2	8	4	4	
9. Application deployment to Google Play distribution platform, requirements for applications	2				2		4	4	
10. Overview of iOS operating system	2				2		4	4	
11. iOS user interface guidelines, user interface components, "storyboards"	2				2		4	4	
12. "Objective-C" programming language	2				2		4	4	
13. "Swift" programming language	2				2		4	4	
14. Application life-cycle, data storage options	2				2		4	4	
15. Working with web services, maps, threads, analytics, error logging, push notifications, long running processes, background transfer service	2				2		4	4	
16. Application deployment to App Store, requirements for applications, App Store review guidelines	2				2		4	4	
17. Tutorials during the semester		2					4	4	
Total	32	2			32	8	68	62	

Assessment strategy	Weight %	Deadline	Assessment criteria
Exam (written)	50	Exam session	The exam consists of theory questions. The student can get from 0 up to 10 points.
Assignment: responsive design web page	10	4th week of semester	The student can get from 0 up to 10 points. Each week after the deadline reduces the maximum allowable evaluation of the stage by 1 point.
Assignment : iOS application	20	10th week of semester	The student can get from 0 up to 10 points. Each week after the deadline reduces the maximum allowable evaluation of the stage by 1 point.
Assignment : Android application	20	16th week of semester	The student can get from 0 up to 10 points. Each week after the deadline reduces the maximum allowable evaluation of the stage by 1 point.

Author	Publishing year	Title	Number or volume	Publisher or URL
Required reading				
Matt Neuburg	2014	Programming iOS 7, 4th Edition		http://shop.oreilly.com/product/0636920031017.do
Reto Meier	2013	Professional Android 4 Application Development		http://www.wrox.com/WileyCDA/WroxTitle/Professional-Android-4-Application-Development.productCd-1118102274.html
Recommended reading				
Christian Keur	2014	iOS Programming: The Big Nerd Ranch Guide (4th Edition) (Big Nerd Ranch Guides)		https://www.bignerdranch.com/we-write/ios-programming/
Bill Phillips	2013	Android Programming: The Big Nerd Ranch Guide (Big Nerd Ranch Guides)		https://www.bignerdranch.com/we-write/android-programming/