



COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
MOBILE APPLICATIONS DEVELOPMENT TECHNIQUES	

Academic staff	Core academic unit(s)
Coordinating: Martas Ambraziūnas	Vilnius University, Kaunas Faculty Muitinės str.. 8, LT-44280, Kaunas

Study cycle	Type of the course unit
First <input checked="" type="checkbox"/> Second	Compulsory subject <input checked="" type="checkbox"/> Elective subject General university studies subject Individual studies subject <input checked="" type="checkbox"/> Interdisciplinary subject

Mode of delivery	Semester or period when it is delivered	Language of instruction
Auditoria/Remote	Autumn semester	Lithuanian/English

Requisites	
Prerequisites: Basic coding (programming) knowledge	Co-requisites (if relevant):

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	130	48	82

Purpose of the course unit		
To acknowledge students with the principles of mobile applications development, development tools and coding languages. Ensure basic understanding about mobile devices, mobile applications markets and trends.		
Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Ability to develop and deploy Android applications using Android Studio IDE and Java/ Kotlin languages. Knowledge about mobile devices and mobile applications markets as well as existing trends in this area.	Lectures, exercises, individual work	Lab exercises Synopses Midterm Exam Exam
Ability to think creatively and critically as well as evaluate the risks of improper use of information systems.	Lectures, exercises, individual work	Lab exercises Synopses Midterm Exam Exam
Ability to analyze IT-related problems, propose and apply secure (from a cybersecurity perspective) information system solutions in practice.	Lectures, exercises, individual work	Lab exercises Synopses Midterm Exam Exam
Ability to understands computer architecture and basic elements of mobile devices.	Lectures, exercises, individual work	Lab exercises Synopses Midterm Exam Exam

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work
Basic concepts and principles of programming technologies. Definition of mobile device, mobile devices history, market share, mobile Apps trends.	2			2			4	8	Literature studies; preparation for midterm exam lab exercises; synopses presentations preparation for exam
Introduction to Android Studio IDE and GitHub versions control system (VCS).	2			4			4	8	
Android application Activity. Activity's life cycle and usage.	2			4			4	8	
Android application layouts and other GUI elements.	2			2			8	8	
Storage options for Android application (local and remote).	2			2			4	8	
Automated Unit and GUI testing in Android.	2			2			4	8	
Usage of asynchronous tasks in Android application.	2			2			4	8	
Usage of device's sensors and features in Android application.	2			4			4	8	
No-code/low-code programming concept and MS Power Platform.	2			2			6	8	
Driver/Navigator/Observer exercise for writing custom application.	2			2			6	10	
Total:	20			28			48	82	

Assessment strategy	Weight %	Deadline	Assessment criteria
Lab. exercises	60 %	During semester	Six coding exercises. Assessed in grades 1-10 based on quality of implementation and delivery time.
Presentation	10 %	During semester	Analysis and presentation of a chosen mobile application or a chosen mobile device.
Midterm exam	15%	During semester	Five open questions from theoretical part. Assessed in grades 1-10
Exam	15%	During session	Essay about Fintech future in upcoming few years. Assessed in grades 1-10

Regarding Taking the Course as an External Student

Mark <input checked="" type="checkbox"/>		If allowed, specify the conditions	
Not allowed	<input type="checkbox"/>	Allowed	<input checked="" type="checkbox"/>
When completing the course as an external student, it is necessary to submit all assignments and pass the midterm and the exam.			

Regarding the Use of Generative Artificial Intelligence (GAI) Tools (e.g., ChatGPT or others) When Studying the Course

Pažymėti <input checked="" type="checkbox"/>		Jei leidžiama, pateikti sąlygas, kt.	
Not allowed	<input type="checkbox"/>	Allowed	<input checked="" type="checkbox"/>
GAI may be used in accordance with the guidelines established by Vilnius University in the Dirbtinio intelekto naudojimo Vilniaus universitete gairėse			

Regarding Progress in Achieving Study Results

A student who (1) does not consistently demonstrate progress in achieving the intended course (module) learning outcomes during practical classes throughout the semester (seminars, exercises, etc.), and (2) has not completed all interim assessments and assignments within the time specified in the course description, **will not be allowed to participate in the examination session.** .

Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Required reading				
Martas Ambraziūnas	2025	Mobiliųjų įrenginių programavimo technologijos		Interactive
Bryan Sills, Brian Gardner, Kristin Marsicano, Chris Stewart	2022	Android Programming: The Big Nerd Ranch Guide, 5th Edition		O'Reilly Media
Griffiths, Dawn & Griffiths, David	2021	Head first Android development: a brain-friendly guide 3rd ed		Sebastopol [Calif.]: O'Reilly Media.
Horton, J.,	2021	Android Programming for Beginners		Birmingham: Packt Publishing.
Recommended reading				
Google		https://developer.android.com/		Interactive
Martas Ambraziūnas		https://emokymai.vu.lt/		Interactive