UNIVERSITY OF ECONOMICS - VARNA

FACULTY OF INFORMATICS

DEPARTMENT OF INFORMATICS

Adopted by the FC (record № 9/24.04.2024)
Adopted by the DC (record № 10/16.04.2024)

ACCEPTED BY:
Dean:
(Prof. Vladimir Sulov, PhD)

SYLLABUS

SUBJECT: MOBILE COMPUTING

DEGREE PROGRAMME: Computer Science; MASTER`S DEGREE

YEAR OF STUDY: 6 for other field graduates; SEMESTER: 12 for other field graduates

TOTAL STUDENT WORKLOAD: 210 hours; incl. curricular 60 hours

CREDITS: 7

DISTRIBUTION OF STUDENT WORKLOAD ACCORDING TO THE CURRICULUM

TYPE OF STUDY HOURS	**WORKLOAD, hours**	**TEACHING HOURS PER WEEK, hours**
CURRICULAR: incl. • LECTURES • SEMINARS / LAB. EXERCISES	 30 30	 2 2
EXTRACURRICULAR	150	-

Prepared by:

1. **……..**
(Assoc. Prof. Ivan Kuyumdzhiev, PhD)

2. **……**
(Chief Assist. Prof. Bonimir Penchev, PhD)

Head of department
of Informatics: ……
(Prof. Julian Vasilev, PhD)

I. ANNOTATION

The course aims to develop theoretical knowledge and practical skills for mobile application development. Topics include the basic types of mobile operating systems, types of mobile applications and development tools.

Students have the opportunity to learn the specifics of the latest platforms for mobile application development and to gain the necessary knowledge to make an informed choice of an appropriate methodology in the project development. The necessary prerequisites for better understanding of the topics are: basic knowledge in the fields of programming, web programming and database fundamentals.

After successful completion of the course, the students can work as developers of mobile applications.

In the course of training, the following key competencies are applied and developed, according to the recommendation of the Council of the European Union dated May 22, 2018, namely:

• Mathematical competence and competence in the field of exact sciences, technologies, and engineering - group 3. The ability to apply mathematical thinking and vision in order to solve various algorithmic problems is developed.

• Digital competence - group 4. Knowledge of the possibilities and limitations of computer technologies (CT); understanding the principles and logic underlying CT; ability to create and use programs and digital content.

II. THEMATIC CONTENT

№	TITLE OF UNIT AND SUBTOPICS	NUMBER OF HOURS		
		L	S	L.E.
Theme 1. Introduction to mobile applications		**6**		
1.1	Mobile operating systems - nature, types and characteristics.	2		
1.2	Types of mobile applications – native, hybrid, web.	1		
1.3	Programming languages for mobile application development.	2		
1.4	Development environments for mobile applications.	1		
Theme 2. Development of native mobile applications		**12**	**15**	
2.1	Basic elements – activities, fragments, services.	3	3	
2.2	User interface – layout, navigation, views, dialogs, notifications.	3	6	
2.3	Data storage – basics, databases, files.	3	3	
2.4	Testing and implementation	3	3	
Theme 3. Development of hybrid mobile applications		**12**	**15**	
3.1	User interface	4	5	
3.2	Using database for hybrid mobile application	4	5	
3.3	Testing and implementation	4	5	
	Total:	**30**	**30**	

III. FORMS OF CONTROL:

№	TYPE AND FORM OF CONTROL	Number	extracur-ricular, hours
1.	**Midterm control**		
1.1.	Theory test	1	30
1.2.	Practice test	1	30
1.3.	Course project	1	30
	Total midterm control:	**3**	**90**
2.	**Final term control**		
2.1.	Examination (test)	1	60
	Total final term control:	**1**	**60**
	Total for all types of control:	**4**	**150**

IV. LITERATURE

REQUIRED (BASIC) LITERATURE:

1. Online lectures (http://e-learn.ue-varna.bg)
2. Burd, B., Mueller, J. P. Android Application Development All-in-One For Dummies (3rd Edition), 2020.
3. Nachimuthu, N. Mastering Apache Cordova, Packt Publishing, 2017

RECOMMENDED (ADDITIONAL) LITERATURE:

1. Lim, G. Beginning Android Development With Kotlin (2022-2023), 2022.
2. Phillips, B. et al. Android Programming: The Big Nerd Ranch Guide (4th Edition), Big Nerd Ranch Guides, 2019.
3. Prusty, N., Mohan, M. Learn ECMAScript: Discover the latest ECMAScript features in order to write cleaner code and learn the fundamentals of JavaScript, Packt Publishing Ltd, 2018