

## 1. GENERAL

<b>SCHOOL</b>	ENGINEERING		
<b>DEPARTMENT</b>	PRODUCT AND SYSTEMS DESIGN ENGINEERING		
<b>LEVEL OF STUDIES</b>	UNDER GRADUATE		
<b>COURSE CODE</b>	<b>4104</b>	<b>SEMESTER</b>	<b>8th</b>
<b>COURSE TITLE</b>	DESIGN AND APPLICATIONS PROGRAMMING FOR MOBILE DEVICES		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
Lectures		<b>3</b>	<b>6</b>
Laboratory			
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	<i>specialised general knowledge</i>		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	GREEK/ENGLISH		
<b>COURSE DELIVERED TO ERASMUS STUDENTS</b>	YES		
<b>MODULE WEB PAGE (URL)</b>	<a href="https://eclass.uowm.gr/courses/MRE260">https://eclass.uowm.gr/courses/MRE260</a>		

## 2. LEARNING OUTCOMES

<b>Learning outcomes</b>
<p>Mobile devices are now ubiquitous and they are the primary platform for communication, entertainment, information and organization. Thus, advanced design and development knowledge is valuable and provides a fertile ground for research, commerce and business. The topics covered in the course include a) design principles and technologies for the development of mobile web applications, b) development of applications for mobile devices with the development platform of the Android operating system and c) techniques for the development of augmented reality mobile applications. At the same time, issues related to the wider field of mobile technologies and its current developments are presented.</p> <p>Upon successful completion of the course, students should:</p> <ul style="list-style-type: none"> <li>● Understand the ecosystem of mobile technologies</li> <li>● Define the concepts of mobile and diffuse computing.</li> <li>● Describe examples of services</li> <li>● Understand the design requirements and challenges of mobile web.</li> <li>● Understand the principles of wireless local area networks (WLANs)</li> <li>● Understand the parameters that affect the mobile user experience</li> <li>● Understand the phases that take place in the context of iterative design (mobile) applications</li> <li>● Implement simple mobile web applications using HTML, CSS and Javascript</li> <li>● Implement simple native mobile applications on the Android platform.</li> </ul>

<b>General Skills</b>
The course aims to give students the basic knowledge of designing and programming applications for mobile devices.

### 3. COURSE CONTENTS

<ul style="list-style-type: none"> <li>● The ecosystem of mobile applications</li> <li>● Introduction to mobile web</li> <li>● Introduction to Pervasive Computing</li> <li>● Privacy issues in Mobile and pervasive computing</li> <li>● Wireless access and wireless local area networks (WLANs)</li> <li>● Introduction to mobile user experience</li> <li>● Design templates in mobile applications (mobile design patterns)</li> <li>● Development cycle (mobile) applications: Iterative design</li> <li>● GPS &amp; Sensor-based augmented reality applications</li> <li>● Mobile-specific websites development</li> <li>● Responsive web design</li> <li>● Development of native mobile applications on the Android platform</li> </ul>
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### 4. TEACHING METHODS - ASSESSMENT

<b>MODE OF DELIVERY</b>	THEORY In class, face to face										
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>	<ul style="list-style-type: none"> <li>● Use of appropriate software</li> <li>● Video and slide presentations</li> <li>● Support of teaching process via the electronic platform e-class</li> </ul>										
<b>TEACHING METHODS</b>	<table border="1"> <thead> <tr> <th><i>Activity</i></th> <th><i>Semester workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>50</td> </tr> <tr> <td>Projects</td> <td>50</td> </tr> <tr> <td>Non-directed study</td> <td>50</td> </tr> <tr> <td>Course total</td> <td><b>150</b></td> </tr> </tbody> </table>	<i>Activity</i>	<i>Semester workload</i>	Lectures	50	Projects	50	Non-directed study	50	Course total	<b>150</b>
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Lectures	50										
Projects	50										
Non-directed study	50										
Course total	<b>150</b>										
<b>ASSESSMENT METHODS</b>	<ol style="list-style-type: none"> <li>1. (60%) Final written exam which includes: <ol style="list-style-type: none"> <li>i. Short-answer questions</li> <li>ii. Multiple choice questions</li> <li>iii. Problem solving</li> </ol> </li> <li>2. (40%) Homework</li> </ol>										

### 5. ATTACHED

<ul style="list-style-type: none"> <li>● Δαμιανός Γαβαλάς, Βλάσης Κασαπάκης και Θωμάς Χατζηδημήτρης, "Κινητές Τεχνολογίες", Εκδόσεις Νέων Τεχνολογιών, ISBN: 978-960-578-007-4</li> <li>● Paul Deitel, Harvey Deitel, Abbey Deitel, "Android Προγραμματισμός" (2η έκδ.), Εκδόσεις Χ. Γκιούρδα, ISBN: 978-960-512-678-0</li> </ul>
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