

COURSE OUTLINE

(1) GENERAL

SCHOOL	Science and Technology		
ACADEMIC UNIT	Science and Technology		
PROGRAMME OF STUDIES	MSc in Information and Communication Technology (ICT) Systems MSc in Mobile and Web Computing		
LEVEL OF STUDIES	Postgraduate		
COURSE CODE	ISE19 MC07	SEMESTER	2
COURSE TITLE	Mobile Application Development		
COURSE TYPE <i>Elective, compulsory</i>	Compulsory		
INSTRUCTOR(S)	Leonidas Akritidis		
INDEPENDENT TEACHING ACTIVITIES <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>	WEEKLY TEACHING HOURS	CREDITS	
	3	6	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
TEACHING ACTIVITIES BREAKDOWN	WEEKLY HOURS		
Theory	1,5		
Lab	1,5		
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COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Skills development		
PREREQUISITE COURSES:	-		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	English		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)	https://elearn-ucips.ihu.gr/course/edit.php?id=1274		

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> <p>On completing the course, the student will be able to:</p> <ul style="list-style-type: none"> • Identify the basic features, requirements and specifications of mobile applications. • Design efficient user interfaces by selecting the appropriate Views on a case-by-case basis.
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<ul style="list-style-type: none"> ● Program the behavior of the components of a mobile application. ● Insert external elements (widgets) into a mobile application. ● Connect mobile applications to other applications, services and interfaces on the World Wide Web ● Publish apps to mobile app distribution platforms as well as the World Wide Web. 																		
<p>General Competences</p> <p><i>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?</i></p> <table> <tr> <td><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td> <td><i>Project planning and management</i></td> </tr> <tr> <td><i>Adapting to new situations</i></td> <td><i>Respect for difference and multiculturalism</i></td> </tr> <tr> <td><i>Decision-making</i></td> <td><i>Respect for the natural environment</i></td> </tr> <tr> <td><i>Working independently</i></td> <td><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td> </tr> <tr> <td><i>Team work</i></td> <td><i>Criticism and self-criticism</i></td> </tr> <tr> <td><i>Working in an international environment</i></td> <td><i>Production of free, creative and inductive thinking</i></td> </tr> <tr> <td><i>Working in an interdisciplinary environment</i></td> <td>.....</td> </tr> <tr> <td><i>Production of new research ideas</i></td> <td><i>Others...</i></td> </tr> <tr> <td></td> <td>.....</td> </tr> </table>	<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>	<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>	<i>Decision-making</i>	<i>Respect for the natural environment</i>	<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>	<i>Team work</i>	<i>Criticism and self-criticism</i>	<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>	<i>Working in an interdisciplinary environment</i>	<i>Production of new research ideas</i>	<i>Others...</i>	
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<ul style="list-style-type: none"> ● Search for, analysis and synthesis of data and information, with the use of the necessary technology ● Decision Making ● Teamwork ● Production of free, creative, and inductive thinking 																		

(3) SYLLABUS

<p>The course introduces the student to mobile environments and analyzes the fundamental concepts and related features. It then presents software development techniques for creating applications that conform to these characteristics. The taught material is organized and taught as follows:</p> <ul style="list-style-type: none"> ● Basic concepts of mobile applications. Requirements and specifications. The Android operating system. Mobile App Lifecycle. ● Structural elements of mobile applications (Views) and Layout methods. ● Mobile application Resources. ● Programming properties of structural elements. ● Programming the behavior of structural elements in response to user actions. Event handling. ● Activities, activity states, intents, bundles. Navigation in a mobile application. ● Menus, dialogs, Widgets (tabs, date/time pickers, etc) and other sophisticated controls (RecyclerView). ● Asynchronous processes, multi-threaded programming. Communications with external data sources, services and interfaces. ● SQLite database system. Data storage, management and retrieval.

(4) TEACHING and LEARNING METHODS - EVALUATION

<p>DELIVERY <i>Face-to-face, Distance learning, etc.</i></p>	<p>Hybrid: Face to face and synchronous distance learning</p>
<p>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Use of ICT in Teaching During the educational process, various mobile application development tools are used, and especially Android Studio. All the supplemental material is uploaded and disseminated through the e-learning platform. The hybrid teaching method involves synchronous learning with the support of the videoconferencing tool Zoom.</p>

	<p>Students are taught a variety of tools related to the course content and material.</p> <p>Use of ICT in Communication with students</p> <ul style="list-style-type: none"> • The course material (slides, software, tutorials, manuals, scientific articles, exercises, etc.) is posted on the course page at the e-learn platform (Moodle). • Use of Moodle Forums announcements. • Live video meetings via Zoom/Teams. • Contact via email. 																							
<p>TEACHING METHODS</p> <p><i>The manner and methods of teaching are described in detail.</i></p> <p><i>Lectures, recitation, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i></p> <p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>	<table border="1"> <thead> <tr> <th data-bbox="730 555 1198 589"><i>Activity</i></th> <th data-bbox="1198 555 1449 589"><i>Semester workload</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="730 589 1198 622">Lectures</td> <td data-bbox="1198 589 1449 622">15 hrs.</td> </tr> <tr> <td data-bbox="730 622 1198 656">Lab</td> <td data-bbox="1198 622 1449 656">15 hrs.</td> </tr> <tr> <td data-bbox="730 656 1198 689">Project</td> <td data-bbox="1198 656 1449 689">8 hrs.</td> </tr> <tr> <td data-bbox="730 689 1198 723">Exams</td> <td data-bbox="1198 689 1449 723">2 hrs.</td> </tr> <tr> <td data-bbox="730 723 1198 757">Non-Directed Study</td> <td data-bbox="1198 723 1449 757">110 hrs.</td> </tr> <tr> <td data-bbox="730 757 1198 790"></td> <td data-bbox="1198 757 1449 790"></td> </tr> <tr> <td data-bbox="730 790 1198 824"></td> <td data-bbox="1198 790 1449 824"></td> </tr> <tr> <td data-bbox="730 824 1198 857"></td> <td data-bbox="1198 824 1449 857"></td> </tr> <tr> <td data-bbox="730 857 1198 891">Course total</td> <td data-bbox="1198 857 1449 891">150 hrs.</td> </tr> </tbody> </table>		<i>Activity</i>	<i>Semester workload</i>	Lectures	15 hrs.	Lab	15 hrs.	Project	8 hrs.	Exams	2 hrs.	Non-Directed Study	110 hrs.							Course total	150 hrs.		
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<p>STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation,</i></p>	<p>Language of Evaluation: English</p> <p>Evaluation Procedure:</p> <ul style="list-style-type: none"> • Written Exams (50%). Methods of evaluation: <ul style="list-style-type: none"> ○ Open-ended questions ○ Multiple choice questions (on lab material) 																							

<p><i>laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students</i></p>	<ul style="list-style-type: none"> ● Group project (50%). <p>The evaluation procedure is announced to the students during the first lecture and is also accessible at the e-learn platform throughout the entire semester.</p>
<p>STUDENT OBLIGATIONS</p> <p><i>Compulsory attendance of lectures, labs, recitations, compulsory participation in midterms, exams, compulsory delivery of homework, projects, etc.</i></p>	<ul style="list-style-type: none"> ● Compulsory attendance of lectures ● Compulsory participation in the exams ● Compulsory delivery of project

(5) ATTACHED BIBLIOGRAPHY

<p><i>- Suggested Textbooks</i></p> <ol style="list-style-type: none"> 1. Bryan Sills, Brian Gardner, Kristin Marsicano, Chris Stewart, <i>Android Programming: The Big Nerd Ranch Guide</i>, Addison-Wesley Professional, 2022. 2. Jacob Iversen, Michael Eierman, <i>Learning Mobile App Development: A Hands-on Guide to Building Apps with iOS and Android</i>, Addison-Wesley Professional, 2013. 3. Dawn Griffiths,, David Griffiths, <i>Head First Android Development 2e: A Brain-Friendly Guide</i>, O'Reilly; 2nd edition, 2017. 4. John Horton, <i>Android Programming for Beginners</i>, Ingram short title, 2018.
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