

Basic data of the subject	
Academic unit:	Faculty of Engineering and Informatics Applied Informatics
Title of the subject:	Hybrid Mobile Application Development
Level:	Bachelor
Course Status:	Elective
Year of studies:	III
Number of hours per week:	3
Value of Credits - ECTS:	5
Time / location:	
Course lecturer:	Prof.Ass.Dr.Dhuratë Hyseni
Contact details:	Dhurate.hyseni@ushaf.net
Course Description:	<i>The course provides students with the basics of programming language of hybrid mobile applications. Students study the differences between hybrid mobile applications and native ones. Furthermore, they are introduced to the Ionic platform applied to the development of hybrid mobile applications along with other tools, such as, Bower and Gulp used in developing the applications by means of Ionic. At the end of the course, attention is given to the use of mobile device components in a hybrid mobile application. Practical activities of the course develop student's practical skills in performing the assigned tasks and developing their project, namely a hybrid mobile application.</i>
Objectives of the course:	<i>The objective of the study subject is to teach students to develop hybrid mobile applications. At the end of the course, students learn to integrate the developed mobile applications with mobile device components and online service servers.</i>
Expected learning outcomes:	<p><i>Upon successful completion of this course, student will be able to:</i></p> <ul style="list-style-type: none"> • <i>Manage to distinguish the hybrid mobile application from the local ones.</i> • <i>Aware of the working principles of hybrid applications.</i> • <i>Manage to programme Ionic applications with Angular JS.</i> • <i>Manage to create new styles of Ionic platform using SASS.</i> • <i>Use Bower and Gulp.</i> • <i>Create hybrid mobile applications based on Ionic platform.</i> • <i>Manage to integrate mobile device components with a hybrid mobile application.</i>
Contribution to the student load (which must correspond with learning outcomes)	

Activity	Hour	Day/Week	In total
Lectures with numerical exercises	3	15	45
Internship			
Contacts with teacher / consultations			
Field exercises			
Midterm, seminars and projects.	3	2	6
Homework			
Self-learning time student (at the library or at home)	3	15	45
Final preparation for the exam	7	2	14
Time spent on evaluation (tests, quiz and final exam)			
Projects and presentations.	3	5	15
Total			125
Teaching methodology:			
	<p><i>The course takes 15 weeks with 2 hours of lectures and 2 hours weekly individual and group exercises.</i></p> <p><i>Exercises will be held in the form of individual and group work in which concrete examples will be discussed.</i></p> <p><i>Active participation is extremely important so students are encouraged to attend lectures and exercises regularly and contribute to the discussions that take place in lectures.</i></p> <p><i>Lectures, exercise, individual work, discussions and group work.</i></p>		
Assessment methods:			
	<p><i>Test 1, Test 2, Attendance and Activity.</i></p> <p><i>Final exam 100%</i></p>		
The ratio of theory and practice:			
	<p><i>80% theory with exercises and 20% laboratory work.</i></p>		
Literature			
Basic Literature:			
	<ol style="list-style-type: none"> <i>Jeremy Wilken (2015). Ionic in action. 320 p.</i> <i>Panhale, Mahesh (2016). Beginning Hybrid Mobile Application Development. 222 p.</i> 		
Additional Literature:			
	<ol style="list-style-type: none"> <i>Rahat Khanna (2016). Getting Started with Ionic. 168 p.</i> 		
Designed learning plan			
Week:	Lectures and exercises to be held		
Week one:	<i>Introduction to hybrid mobile applications.</i>		
Week two:	<i>Setting up Ionic working environment.</i>		
Week three:	<i>Getting started with Ionic.</i>		
Week four:	<i>Getting started with Ionic (continued).</i>		
Week five:	<i>Components of Ionic applications.</i>		
Week six:	<i>Components of Ionic applications (continued).</i>		
Week seven:	<i>Test 1</i>		
Week eight:	<i>Windows of Ionic application.</i>		
Week nine:	<i>Windows of Ionic application (continued).</i>		
Week ten:	<i>Camera module.</i>		

Week eleven:	<i>Camera module (continued).</i>
Week twelve:	<i>Online check module.</i>
Week thirteen:	<i>Online check module (continued).</i>
Week fourteen:	<i>Push notifications and local notifications.</i>
Week fifteen:	<i>Test 2</i>
Academic policies and rules of conduct	
<i>Regular attendance of lectures and exercises is necessary, as well as active participation with discussion and solution of tasks. Not impeding the progress required for learning using mobile phones turned off or in silent mode.</i>	