

804247 - DMOB - Mobile Devices

Coordinating unit:	804 - CITM - Image Processing and Multimedia Technology Centre		
Teaching unit:	804 - CITM - Image Processing and Multimedia Technology Centre		
Academic year:	2019		
Degree:	BACHELOR'S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Teaching unit Compulsory) BACHELOR'S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Teaching unit Compulsory)		
ECTS credits:	6	Teaching languages:	Catalan, English

Teaching staff

Coordinator: Gorricho Moreno, Juan Luis

Others: Fernández, Pau

Requirements

basic knowledge of programming

Degree competences to which the subject contributes

Generical:

CGFC4VJ. (ENG) Aplicar los procedimientos algorítmicos básicos de las tecnologías informáticas para diseñar soluciones a problemas, analizando la idoneidad y complejidad de los algoritmos propuestos.

CGFC5VJ. (ENG) Diseñar y utilizar de forma eficiente los tipos y estructuras de datos más adecuados a la resolución de un problema relacionado con el desarrollo de videojuegos.

Transversal:

01 EIN N3. ENTREPRENEURSHIP AND INNOVATION - Level 3. Using knowledge and strategic skills to set up and manage projects. Applying systemic solutions to complex problems. Devising and managing innovation in organizations.

Teaching methodology

A combination of oral lectures and laboratory sessions devoted to programming exercises.

Learning objectives of the subject

Learn the skills to use the necessary tools for the programming of native applications with Android.

Study load

Total learning time: 150h	Hours large group:	18h	12.00%
	Hours medium group:	30h	20.00%
	Hours small group:	0h	0.00%
	Guided activities:	12h	8.00%
	Self study:	90h	60.00%

804247 - DMOB - Mobile Devices

Content

<p>1. Introduction to Android</p>	<p>Learning time: 20h Practical classes: 8h Self study : 12h</p>
<p>Description: Fundamentals of the Android programming. Application components. Application resources.</p>	
<p>2. User interface</p>	<p>Learning time: 40h Practical classes: 16h Self study : 24h</p>
<p>Description: Views, ViewGroups and Layouts. AdapterView and Adapters. Flow of screens: Activities.</p>	
<p>3. Multi-thread programming and of the communications</p>	<p>Learning time: 40h Practical classes: 16h Self study : 24h</p>
<p>Description: Threads, AsyncTask and TimerTasks. HttpURLConnection and JSON. RESTful Web Services. WebSockets.</p>	
<p>5. Push service</p>	<p>Learning time: 30h Practical classes: 12h Self study : 18h</p>
<p>Description: Broadcast Receivers. Services. Push Service.</p>	
<p>5. Localization and multimedia</p>	<p>Learning time: 20h Theory classes: 8h Self study : 12h</p>
<p>Description: Programming with the geographical localization library. Programming of multimedia services: photo, audio and video.</p>	

804247 - DMOB - Mobile Devices

Planning of activities

<p>Programming exercise of the user interface. Mock-up of a chat service.</p>	<p>Hours: 10h Practical classes: 10h</p>
<p>Description: This programming exercise is devoted to familiarize the student with the available tools for the design of the screens of any mobile application, that is to say, the programming of the user interface, programming of the screens and the algorithms for the processing of the events produced by the user of the app. Mock-up of a chat service, programming of an echo service to test the mock-up.</p>	
<p>Programming exercise implementing the chat service with polling strategy. Access to the server's content</p>	<p>Hours: 14h Practical classes: 14h</p>
<p>Description: For this programming exercise the student will have to make a complete implementation of a chat service using the polling strategy, that is to say, periodically requesting new content from the server. The student will study the use of the RESTful web service technology to access to the content from a web server, the programming of a periodic access with a Timer and the setup of a web server with access to a data base to register all the conversations among the users.</p>	
<p>Programming exercise of the chat service by a push functionality.</p>	<p>Hours: 6h Practical classes: 6h</p>
<p>Description: As our third section on the development of a prototype of a chat application we will substitute the polling strategy by a push functionality to retrieve new content from the server in an asynchronous manner, that means that we will have to reprogram the client and server using this new push service.</p>	
<p>Programming exercises during the lectures</p>	<p>Hours: 10h Practical classes: 10h</p>
<p>Description: Along the course, during the theoretical lectures, we will devote on each session 40 minutes of our time to complete short programming exercises related to the theoretical concepts learned during the same session. Usually, we will complete a couple of programming exercises, each one to be done in 20 minutes.</p>	

804247 - DMOB - Mobile Devices

Qualification system

Mid-term exam: 25%

Submission of 3 programming exercises: 40% (15%+15%+10%)

Student participation and attitude: 10%

Final exam: 25%

There is the option to take an extra exam if you have failed the subject, if that is the case you will be reassessed of the contents learned by the lectures, that is to say, the 20% of the continuous assessment + 25% of the final exam, it is exclude from the reassessment the 40% grade you obtained from the submission of programming exercises.

Bibliography

Basic:

Meier, Reto. Professional Android 4 application development. Indianapolis: John Wiley & Sons, 2012. ISBN 9781118102275.