

BASIC DETAILS:

Subject:	DESARROLLOS PARA DISPOSITIVOS MÓVILES		
Id.:	31378		
Programme:	GRADUADO EN DISEÑO Y DESARROLLO DE VIDEOJUEGOS. 2013 (BOE 28/03/2014)		
Module:	PROGRAMACIÓN DE VIDEOJUEGOS		
Subject type:	OBLIGATORIA		
Year:	3	Teaching period:	Segundo Cuatrimestre
Credits:	6	Total hours:	150
Classroom activities:	66	Individual study:	84
Main teaching language:	Inglés	Secondary teaching language:	Inglés
Lecturer:	FONT BURDEUS, JAIME IGNACIO (T)	Email:	jfont@usj.es

PRESENTATION:

This course will provide the student with the competencies needed to design and develop games and interactive applications for mobile devices. Given its current spread and the prospects for the future, the course will be based on the Android platform. However, the student will be taught in problems ubiquitous to all mobile platforms as connectivity, fragmentation (diversity of devices and specifications), the persistence of data or the design for all. In order to develop the games, we will use the LibGDX framework, the best open source java-based framework to create cross-platform games available nowadays.

to pass the course you will need the following skills:

Coding: 9 / 10

Theory: 2 / 10

Arts: 4 / 10

PROFESSIONAL COMPETENCES ACQUIRED IN THE SUBJECT:

General programme competences	G10	Ability to master information and communication technologies and their application in their professional field.
Specific programme competences	E16	Ability to fully manage and plan software projects and handle suitable tools to do so.
	E30	Ability to design, develop, select and evaluate applications and systems, ensuring reliability, safety and quality, according to ethical principles and legislation and regulations.
Learning outcomes	R01	Learn about the basics of technologies supporting the creation of video games and interactive applications on mobile devices.
	R02	Use libraries to create games and interactive applications in mobile devices.
	R03	Explain technologies for the design and creation of video games and applications for mobile devices.
	R04	Analyse the technical characteristics of the technologies to create video games and applications for mobile devices and select the most suitable for each project.
	R05	Develop and plan a project for mobile devices and its corresponding documentation.
	R06	Monitor a project.
	R07	Work in a team to achieve defined objectives.

PRE-REQUISITES:

There are no formal pre-requisites but good knowledge of Java programming and Game design and development will be useful.

SUBJECT PROGRAMME:

Subject contents:

1 - Basic development of Games
1.1 - Introduction to LibGDX and its structure
1.2 - OOP in Java
1.3 - Game Sandbox
1.4 - Textures
1.5 - Game Objects
1.6 - Managing the input
1.7 - Camera, Viewport, Aspect Ratio and coordinate systems.
2 - Advanced Development of Games
2.1 - 2D Animations
2.2 - Controllers API
2.3 - Multiple Screens
2.4 - User Interfaces and HUDs
2.5 - Particle Effects
2.6 - Sounds and Music

Subject planning could be modified due unforeseen circumstances (group performance, availability of resources, changes to academic calendar etc.) and should not, therefore, be considered to be definitive.

TEACHING AND LEARNING METHODOLOGIES AND ACTIVITIES:

Teaching and learning methodologies and activities applied:

Theoretical practical sessions:

First, the lecturer will present the theoretical contents of the subject as a master class, supported by the necessary resources (blackboard, slides ...) to exemplify and illustrate the contents properly. The participation of students asking questions, theoretical situations or promoting group discussion on the topics discussed will be encouraged.

Then, the theoretical sessions will be supported by the approach and resolution of practical exercises. These exercises will be solved by the students, individually or collectively, depending on the type of problem to solve. The teacher will guide the students when needed. As part of this practical session, students will present their proposed solutions.

Individual assignment:

Part of the learning and the grade acquired through the course comes from the resolution of the individual assignment proposed along the course. The individual assignment will be divided into 10 tasks that will be performed during the course. In order to resolve the tasks, student will receive some technical guidance. In addition, a communication mechanism will be provided (PDU) to discuss and comment on the different problems that arise during the resolution of the assignments.

The individual assignment will involve two deliveries, a beta release (only some of the tasks will be expected for this release) and the final release (all the tasks should be finished). The grade will come from both releases, so the students have the opportunity to fix the problems of the beta release when delivering the final release.

The resolution of the individual assignment prepares the student to acquire the professional competences of this course.

Group assignment:

In addition to the individual assignment, students will develop a group assignments that will put in practice all the topics covered by the course. This assignment will be followed by the teacher before the final presentation, to ensure the quality and guide the students when needed.

As with the individual assignment, there will be technical guidance and a communication mechanism

to discuss about the assignment. The group assignment will be part of a Service Learning project.

Presentation of the assignments:

An important part of the learning process for the student is the presentation of their assignments to the rest of the students. During these presentations, students will have the opportunity to highlight the most positive aspects of their work, present the solutions to address the issues and even discuss other ways of solving the problems explored by the student.

Mentoring and participation in the PDU:

Students will attend tutorials to ask the teacher questions and problems that arise during the course and that have not been properly addressed during the sessions. Also during these tutorials, the teacher will provide supervision and guidance to help students acquire the skills raised by the course.

As during tutorials with the teacher, students can use the media available on the PDU to raise concerns or judgments about the course at any time, to receive help and feedback from other students and from the teacher.

The tutorials will be held on Mondays from 16:00 to 18:00. If unable to attend tutoring during these times, they may be arranged at convenient times tutoring for students and the teacher.

Student work load:

Teaching mode	Teaching methods	Estimated hours
Classroom activities	Master classes	35
	Practical work, exercises, problem-solving etc.	17
	Laboratory practice	10
	Assessment activities	4
Individual study	Individual study	24
	Individual coursework preparation	26
	Group coursework preparation	26
	Research work	3
	Compulsory reading	5
Total hours:		150

ASSESSMENT SCHEME:

Calculation of final mark:

Written tests:	30 %
Individual coursework:	30 %
Group coursework:	20 %
Final exam:	10 %
Participation:	10 %
TOTAL	100 %

*Las observaciones específicas sobre el sistema de evaluación serán comunicadas por escrito a los alumnos al inicio de la materia.

BIBLIOGRAPHY AND DOCUMENTATION:

Basic bibliography:

BOSE, Juwal. LibGDX Game Development Essentials. Packt Publishing 2014.
BALAKRISHNAN NAIR, Suryakumar and OEHLKE, Andreas. Learning LibGDX Game Development Second Edition. Packt Publishing 2015.

HOEY, Patrick. Mastering LibGDX Game Development. Packt Publishing 2015.

Recommended bibliography:

Recommended websites:

LibGDX Official Site	https://libgdx.badlogicgames.com/
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