



Course guide

804230 - P1VJ - Project I

Last modified: 14/07/2022

Unit in charge: Image Processing and Multimedia Technology Centre
Teaching unit: 804 - CITM - Image Processing and Multimedia Technology Centre.

Degree: BACHELOR'S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Compulsory subject).

Academic year: 2022 **ECTS Credits:** 6.0 **Languages:** Catalan, English

LECTURER

Coordinating lecturer: Jesús Alonso

Others:

PRIOR SKILLS

Knowledge of programming using C.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

5. Design the mechanics, rules, structure, script and artistic concept of a video game, maximising immersion and criteria of playability and balance to provide the best possible user experience.
7. Master the wide range of professional tools in the sector for developing all kinds of digital content.
8. Identify the production process and methodologies for developing a video game, and the role of each of the profiles and functions involved.
11. Undertake and manage video game design and development projects, including planning, direction, execution and evaluation.
13. Use programming languages, algorithmic patterns, data structures, visual programming tools, game engines and libraries for the development and prototyping of video games, in any genre and for any platform and mobile device.

TEACHING METHODOLOGY

During each class, the lecturer will first show the students the theory behind the problem that need solving. Together with the students, the lecturer will explore the different solutions that exist in the present that solve and simplify the complexities of real time applications like videogames.

The lecturer will provide source code for the student to study and complete while integrating it in their own source code for future reference and use. Closing each session, the lecturer will provide with ideas for improving the systems challenging student in order to help and orientate the students in the self learning time.

LEARNING OBJECTIVES OF THE SUBJECT

Learn how to embark in the development of a video game of small complexity.
Learn how to work in a small team and coordinate with the rest.



STUDY LOAD

Type	Hours	Percentage
Guided activities	12,0	8.00
Hours medium group	30,0	20.00
Hours large group	18,0	12.00
Self study	90,0	60.00

Total learning time: 150 h

CONTENTS

1. Development tools

Description:

Distributed work with Git
Services of github.com
Tools for communication and teamwork: Trello and Slack

Full-or-part-time: 20h

Theory classes: 8h
Self study : 12h

2. Introduction to SDL programming

Description:

Initial setup for a game with SDL
Sprites and transparencies
Using input devices
Using the audio features

Full-or-part-time: 35h

Theory classes: 14h
Self study : 21h

3. Coding arcade games

Description:

Modular code structure
The renderer and texture management
The input subsystem
The channels audio
Sprite animation and the parallax effect
Collision management
Foundation for User Interfaces

Full-or-part-time: 60h

Theory classes: 24h
Self study : 36h



4. FSM and entering Beta

Description:

Introduction to functional QA
QA for quality
Graph theory
Programming state machines

Full-or-part-time: 35h

Theory classes: 14h
Self study : 21h

GRADING SYSTEM

20% - Assignment 1
30% - Assignment 2
40% - Assignment 3 (30% project, 5% presentation, 5% interview)
10% - Attitude
WARNING: This subject does not feature any content that can be reevaluated.

BIBLIOGRAPHY

Basic:

- Ernest Pazera. Focus on SDL. Course Technology PTR, 2002. ISBN 1592000304.
- Shaun, Mitchell. SDL game development. Packt Publishing, 2013. ISBN 1849696829.

RESOURCES

Hyperlink:

- <http://www.proyectosagiles.org/>- <http://www.uml.org/>