SUBJECT DESCRIPTION

MODELO

PED.013.03

Course	Equipment Design					
Subject	Digital Technology 1					
Academic year	2023-2024	Curricular year	1st	Study period	1st semester	
Type of subject	Compulsory	Student workload (H)	Total: 140	Contact: 60	ECTS	5
Professor(s)	José Carlos Miranda					

☒ Area/Group Coordinator ☐ Head of Department	José Carlos Fonseca

PLANNED SUBJECT DESCRIPTION

1. LEARNING OBJECTIVES

- *Characterize each component of the multimedia matrix (text, graphics, bitmap images, video, animation, audio).*

- *Manipulate the elements of the multimedia matrix.*

- *Plan and implement a multimedia project.*

2. PROGRAMME

1. *Digital Representation of Information and Interactivity.*

Types of static information. Types of dynamic information. Classification of multimedia information. Characteristics of multimedia systems. Interactive multimedia applications. Digitization, sampling and quantization.

2. *Graphics (vectors) and Images (bitmaps).*

Basic Concepts. Advantages and Disadvantages. Types and Origins. Technical Production. File Formats. Digital Camera. Image Manipulation.

3. *Digital Video and Animation.*

Basic Concepts. Types and Origins. Technical Production. Video Formats. Codecs. Digital Video Camera. Digital Video Authoring.

4. *Audio Digital.*

Basic Concepts. Digital Audio Formats. Voice recognition and synthesis. MIDI protocol. Digitizing and Sound Editing. MP3 compression.

5. *Multimedia Project.*

Analysis and Planning. Design. Production. Pos-Production. Development of a Multimedia Project.

3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

Contents C1 is consistent with Objective O1 because they focus on the multimedia technology, which presents concepts and technologies related to multimedia, interactivity and digitization of information. Particular focus is given to the elements of the matrix multimedia (text, graphics, images, video, audio, animation).

Contents C2, C3 and C4 are consistent with Objective O2. Particular focus is given to the practical application of the concepts introduced in the theoretical component. We present tools to manipulate vector graphics, digital photography, audio, video and animation.

Contents C5 is consistent with Objective O3 because it presents the fundamental principles that allow us to understand and carry out the development of a multimedia project, from the initial planning stage to the final product distribution.

4. MAIN BIBLIOGRAPHY

Miranda, J.C (2023). Apontamentos da disciplina. Departamento de Informática. Moodle – ESTG/IPG.

Ribeiro, N. (2004). Multimedia e Tecnologias Interactivas. Lisboa: FCA- Editora de Informática.

Fluckiger, F. (1995). Understanding Networked Multimedia. Prentice-Hall.

5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

Teaching methodologies:

- *Lecture,*
- *Interactive lesson,*
- *Problem solving,*
- *Project,*
- *Tutorials*

Evaluation Rules:

- Continuous evaluation:

Practical Assignements (100%)

- Final Exam Evaluation (regular season):

Practical assignments (80%) + Theoretical Test (20%) *

* The student must complete the practical component to be admitted to the exam.

- Final Exam Evaluation (supplementary or special season)

Theoretical-Practical Test (100%)

6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

Lectures *are consistent with the objectives due to the need to provide students with the theoretical contents, including the various concepts related to the elements of the multimedia matrix (O1 and O2) and the concepts related to the development of an Interactive Multimedia Project (O3).*

Interactive Lessons *are consistent with the objectives since student/teacher interaction helps with learning the concepts of the programme and the introduction of new ideas, perspectives and solutions. Specific tools are used for practical application of the concepts introduced in the theoretical component, particularly for manipulating the elements of the matrix multimedia (O2) and for the implementation of the multimedia project (O3).*

Problem solving *is consistent with the objectives since the application of theoretical concepts to solve real life practical exercises related to the manipulation of images, sound and video (O2) as well as the development of multimedia authoring (O3) helps consolidate the concepts, highlighting the students expertise.*

Project *development is consistent with the objectives since it covers the development of an interactive multimedia project, through all development stages from its planning to its distribution (O3), requiring the practical application of all concepts covered throughout the semester to a realistic and new situation. The realization of this project allows students to develop their skills of coordination and teamwork.*

In the *Tutorial* *sessions is supervised and controlled the independent work of the student. The presentation of the work is performed by students in the classroom and allows students to see their work validated by the teacher, as well as clarify all his doubts.*

7. ATTENDANCE

Tutorial works must be submitted on the date defined in the schedule of discipline, available to students in the eLearning platform. Students with "student worker" status can present their works at a date to match with the teacher.

8. CONTACTS AND OFFICE HOURS

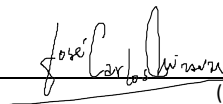*José Carlos Miranda | jcmira@ipg.pt | gabinete 39 (ESTG)*

Atendimento: Tuesday (10:00-11:00) | Wednesday (10:00-11:00 | 14:00-15:00)

DATE

27 de setembro de 2023

SIGNATURES

Professor

(signature)

Area/Group Coordinator

(signature)