Course Unit	3D Design			Field of study	Visual Arts		
Bachelor in	Game Design			School	School of Public Management, Communication and Tourism		
Academic Year	2022/2023	Year of study	1	Level	1-1	ECTS credits	6.0
Type	Semestral	Semester	2	Code	8309-414-1202-00-22		

Workload (hours)	162	Contact hours	T	TP	PL	TC	S	E	OT	O
			-	30	30	-	-	-	-	-

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s): Rogerio Paulo Azevedo Moreira Silva Gomes

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Understand the history of equipment / object design and produce in response to this;
2. Understand and employ a design methodology;
3. Know the basics of two-dimensional / three-dimensional objects representation;
4. Demonstrate skills in manipulating 3D software and modeling 3D objects (object building)

Prerequisites

Before the course unit the learner is expected to be able to:
Not applicable.

Course contents

Introduction to the theory and history of equipment design; Introduction to techniques of equipment design representation; Introduction to 3D modelling software Blender.

Course contents (extended version)

1. Introduction to the theory and history of equipment design;
2. Introduction to the representation techniques in equipment design;
3. Design methodology:
   - Divergent thinking and convergent thinking
   - Stages (Analysis, Development, Prototyping, Implementation)
4. Representation of spatial elements:
   - Technical and expressive skills
   - Representation methods (two-dimensional; three-dimensional)
5. Model representation of an object for a digital game environment - mockup
6. Introduction to 3D Blender modeling software
7. Digital representation of an object for a digital game environment:
   - Modeling
   - Materials and lighting
   - Textures

Recommended reading

1. Allan, B. (2020) Blender 2. 9: The Beginner's Guide. Independently Published, 2020 [ISBN: 9798676661700]
2. Torrent, R. (2009). Histora Del Diseño Industrial. Cátedra S. A. [ISBN: 8437622670]
3. Munari, B. (1981). Das Coisas Nascem Coisas. Edições 70. [ISBN: 9789724413631]
4. Simon D. (2010). Cosmic Motors. Spaceships, cars & pilots of another galaxy. Titan. [ISBN: 1848566891]
5. Zubek, R. (2020) Elements of Game Design. MIT Press. [ISBN: 0262043912]

Teaching and learning methods

Contact hours: In theoretical sessions, use of the lecture and interrogative methods. In practical sessions, use of demonstrative and active methods resorting to experimentation with different media and materials and conducting exercises of object modeling in Blender; Non-contact hours: Completion of exercises and development of a design project.

Assessment methods

1. DISTRIBUTED EVALUATION - (Regular, Student Worker) (Final, Supplementary, Special)
   - Practical Work - 20% (Poster of data analysis and its oral defense.)
   - Practical Work - 10% (Graphical representation of the object in development.)
   - Practical Work - 10% (Three dimensional physical representation of the object in development: scale model.)
   - Practical Work - 25% (Poster of object development and its oral defense (with sketchbook and descriptive document).)
   - Development Topics - 10% (Project developed as part of the Interdisciplinary Week)
   - Projects - 25% (Project 25% (Integrated project between curricular units of the semester))
2. students in mobility - DISTRIBUTED EVALUATION - (Regular, Student Worker) (Final, Supplementary)
   - Practical Work - 20% (Poster of data analysis and its oral defense.)
   - Practical Work - 10% (Graphical representation of the object in development.)
   - Practical Work - 10% (Three dimensional physical representation of the object in development: scale model.)
   - Practical Work - 50% (Poster of object development and its oral defense (with sketchbook and descriptive document).)
   - Projects - 10% (Poster of object development and its oral defense (with sketchbook and descriptive document).)

Language of instruction

Portuguese, with additional English support for foreign students.

Electronic validation

Rogerio Paulo Azevedo Moreira Silva Gomes	Barbara Costa Vilas Boas Barroso	Carlos Sousa Casimiro da Costa	Luisa Margarida Barata Lopes
23-02-2023	02-03-2023	03-03-2023	13-03-2023