

Course Unit	3D Animation		Field of study	Visual Arts/Computer Science	
Bachelor in	Game Design		School	School of Public Management, Communication and Tourism	
Academic Year	2023/2024	Year of study	2	Level	1-2
Type	Semestral	Semester	2	ECTS credits	6.0
Code	8309-801-2201-00-23				
Workload (hours)	162	Contact hours	T -	TP 15	PL 45
			TC -	S -	E -
			OT -	O -	

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 Junior Correia Tavares

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Acquire knowledge of 3D animation software (Blender);
2. Develop creative capacities for the integration of previous modeling (Design & Production of 3D Assets, Environments & Level Design and Character Creation & Development) in 3D animations;
3. Understanding the fundamental concepts of 3D animation.
4. Understanding the building mechanisms of a character Rig.
5. Understanding the placement and the importance of animation In a Game Production.
6. Acquire knowledge of the methods and techniques used by the game industry.

Prerequisites

Before the course unit the learner is expected to be able to:

1. Use basic tools in 3D software (Blender).
2. Understand the basic concepts of traditional animation.

Course contents

Basic golden rules of animation developed in the beginning of the twentieth century with traditional animation. Blender's 3D animation techniques. Understanding the value and status of 3D Animation in the gaming industry. Animation Practice.

Course contents (extended version)

1. Introduction to 3D animation for video games
 - Difference between other types of animation and 3D animation for games
 - History of 3D animation in games
 - Importance of modeling in 3d animation for games
 - Difference between creativity, technique and expression in 3d animation
2. Simple and advanced techniques of 3D animation in Blender:
 - Understanding keyframe animation
 - Relationship between objects and hierarchies
 - Simple object animations(move, rotate, scale, visibility)
 - Animating with a character Rigs.
 - Construct rigs using constraints, drivers, FK, IK, and Rigify
 - Expressions animation using shape keys
 - Blocking Workflow: planning, blocking, blocking plus and polishing

Recommended reading

1. Parent, R. (2012). Computer animation algorithms and techniques. San Francisco, Calif: Morgan Kaufmann. [ISBN: 0124158420]
2. Webster, C. (2012). Action Analysis for Animators. Ed. Focal Press. ISBN 9780415115971
3. Hess, R. (2013). Blender production : creating short animations from start to finish. Burlington, MA: Focal Press. [ISBN: 0240821459]
4. Marx, C. (2013). Writing for animation , comics, and games. Focal Press. [ISBN: 9780240805825]
5. Williams, R. (2009). The animator's survival kit. New York: Faber and Faber. [ISBN: 0865478978]

Teaching and learning methods

Content exposition, in structured knowledge construction; Interrogative method, asking the students systematically in order to develop critical capacity; Demonstrative method with practical application by students; Active method, solving exercises in order to allow greater consolidation of knowledge.

Assessment methods

1. FINAL EVALUATION - (Regular, Student Worker) (Final)
 - Practical Work - 20% (Animating a bouncing ball and of an object with drivers and constraints)
 - Practical Work - 20% (Producing and animating a rig (armature))
 - Projects - 5% (Project from Interdisciplinary Week.)
 - Projects - 35% (Animação de caminhadas e expressões faciais. Project Planning)
 - Projects - 20% (Capstone Project)
2. APPEAL AND SPECIAL PERIODS - (Regular, Student Worker) (Supplementary, Special)
 - Projects - 100% (Production of a project, according to a statement provided at the time of the exam.)

Language of instruction

1. Portuguese
2. Portuguese, with additional English support for foreign students.

Electronic validation			
Rogério Junior Correia Tavares	Barbara Costa Vilas Boas Barroso	Carlos Sousa Casimiro da Costa	Luisa Margarida Barata Lopes
16-05-2024	20-05-2024	20-05-2024	21-05-2024

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