

| | | | |
|------------------|---------------------|----------------|--|
| Course Unit | Motion Capture | Field of study | Audio-visual |
| Bachelor in | Game Design | School | School of Public Management, Communication and Tourism |
| Academic Year | 2023/2024 | Year of study | 2 |
| Type | Semestral | Semester | 1 |
| Workload (hours) | 54 | Contact hours | T - TP 10 PL 10 TC - S - E - OT - O - |
| Level | 1-2 | ECTS credits | 2.0 |
| Code | 8309-801-2102-00-23 | | |

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) Barbara Costa Vilas Boas Barroso, Joao Victor Boechat Gomide

Learning outcomes and competences

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

1. Understand the workflow for motion capture;
2. Use technical equipment for motion capture;
3. Use motion capture software;
4. Know and efficiently use motion capture libraries.

Prerequisites

Before the course unit the learner is expected to be able to:
Demonstrate basic knowledge of 3D modelling.

Course contents

Theory and history of Motion Capture. Mathematical and physical elements. The motion capture session. Free libraries. Application. Project development.

Course contents (extended version)

1. Theory and history of Motion Capture:
 - types of techniques;
 - materials.
2. Mathematical and physical elements for the preparation of motion capture.
3. The motion capture session:
 - placement of sensors;
 - calibration;
 - positioning and direction of actors;
 - capture.
4. Free motion capture libraries.
5. Application of motion capture in 3D animation.
6. Projects development.

Recommended reading

1. Cooper, J. (2019). Game Anim: Video Game Animation Explained. 1st Ed. Boca Raton, FL: CRC Press. [ISBN 978-1138094871]
2. Gomide, J. V. B. (2014). Imagem Digital Aplicada. Uma Abordagem para Estudantes e Profissionais. Elsevier. [ISBN-13: 9788535274608]
3. Tobon, R. (2010). The Mocap Book: A practical guide to the art of motion capture. [s/l]: Foris Force. [ISBN: 9780615293066]

Teaching and learning methods

Classes exploring the syllabus through exercises, based on a brief introduction to the concepts and always accompanied by micro-exposition. Initially, the exercises are small-scale, measuring learning progress and allowing phased feedback. These are followed by the project between the semester's curricular units, incorporating self- and hetero-evaluation processes.

Assessment methods

- FINAL EVALUATION (Internal & Mobility) - (Regular, Student Worker) (Final, Supplementary, Special)
 - Practical Work - 20% (Activity 1)
 - Practical Work - 20% (Activity 2)
 - Projects - 10% (Activity 3)
 - Projects - 40% (Activity 4 - within the scope of the Capstone project between Curricular Units of the semester.)
 - Development Topics - 10% (Work developed within the scope of Interdisciplinary Week.)

Language of instruction

1. Portuguese
2. English

Electronic validation

| | | | |
|--|------------------------------------|--------------------------------|------------------------------|
| Barbara Costa Vilas Boas Barroso, Joao Victor Boechat Gomide | Ines Monteiro Barbedo de Magalhaes | Carlos Sousa Casimiro da Costa | Luisa Margarida Barata Lopes |
| 05-02-2024 | 27-02-2024 | 27-02-2024 | 27-02-2024 |