

Code: 27207

Main Scientific Area: Computer Graphics and Multimedia

Lecturer: Alexandre Resende Clément

Language of Instruction: Portuguese

Regime: S2

Contact Hours: 30h Total Workload: 138h

ECTS: 5,0

Objectives

The fields of sound and music for video games have evolved technically and assumed an increasingly important role in the industry in recent years, with particular emphasis on the areas of adaptive/interactive content and augmented and virtual reality.

Video game professionals can benefit from the knowledge of the history, techniques, and audio technologies, both from the perspective of their application and use in their projects and from the perspective of better communicating with professionals responsible for these areas in the future.

The objective of this CU is to transmit knowledge about the processes of creation and manipulation of sound content, as well as its implementation in the context of video game development through the learning and practice of associated work methodologies.

Learning Outcomes

At the end of the course unit, the student should:

1. Know the history of the use of sound and music in video games
2. Understand the main functions performed by sound in audiovisual media
3. Acquire and master the concepts and lexicon associated with the various processes of sound design and audio treatment
4. Be able to create audio content for a multimedia project (i.e. video, videogame, visual installation)
5. Know and be able to carry out audio processing and manipulation techniques, sound synthesis, and spatialization
6. Be able to integrate and implement the developed sound content in a video game in order to respond to the needs and particular context of the project
7. Being able to communicate properly with a sound designer or music composer responsible for creating sound content in order to enhance and facilitate the implementation of this aspect of video game development

Course Contents

History of sound in video games;
Sound fundamentals and sound design;
Sound design tools and methods;
Signal processing;
Sound synthesis;
Sound spatialization;

Interactive music;
Middlewares in-game sound;
Sound in Unity Engine;

Recommended Bibliography

Martin Russ. 2003. Sound Synthesis and Sampling. Elsevier Science Inc., USA.

Karen Collins. 2008. Game Sound: An Introduction to the History, Theory, and Practice of Video Game Music and Sound Design. The MIT Press.

Andy Farnell. 2010. Designing Sound. The MIT Press.

Learning and Teaching Methods

Through exposure to the various theoretical contents, the student will become aware of the various technologies and methodologies, as well as the contexts of their genesis and practical application.

The various moments of practical realization (works) guarantee the correct assimilation and understanding of the application of these methodologies and technologies in a concrete context.

Assessment Methods

Class participation: 10%

Practical work done: 60%

Sound design document: 30%