

Course Unit	Audio Laboratory	Field of study	Audiovisuals and Media Production
Bachelor in	Multimedia	School	School of Public Management, Communication and Tourism
Academic Year	2023/2024	Year of study	2
Type	Semestral	Semester	1
Level	1-2	ECTS credits	6.0
Code	9213-656-2203-00-23		
Workload (hours)	162	Contact hours	T - TP 60 PL - 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) Joao Pedro Dias Babo de Carvalho, Stefan Sfichi

Learning outcomes and competences

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

1. Understand differences between digital and analogical sound;
2. Understand the difference between sound insulation and room absorption of sound and design acoustic panels;
3. Recognize and create different sound formats;
4. Understand physical sound principles and the human auditory system;
5. Recognize and apply the different techniques of stereo sound recording and the different microphone polar patterns and construction types;
6. Apply knowledge of audio editing and mixing and tools like: compressors, equalizers and time effects like reverberation and delay;
7. Understand and classify different basic typologies of musical evolution;
8. Analyse themes, compositional structures, models and techniques present in sound with different formats and functions;

Prerequisites

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

Course contents

The program will comprehend: physical dimensions of sound, sound propagation; human auditory system, voice and speaking techniques; instrument and room acoustics, musical terminology and conventions, musical styles and periods; sound treatment and digital audio operations; sound for audiovisual and multimedia, sound post-production audio editing and mixing; sound recording stereo techniques; audio mixing tools.

Course contents (extended version)

1. Technology, formats and functions of sound.
2. Introduction to the physical dimensions of sound:
 - Sound propagation;
 - Architectural acoustics;
 - Instrument acoustics.
3. Introduction to sound perception:
 - Human hearing;
 - Human voice.
4. Introduction to the cultural dimensions of sound:
 - Brief overview of western music styles and periods;
 - Terminology and conventions.
5. Sound in different media: audiovisual, multimedia, radio.
6. The 3 work stages:
 - Pre-production;
 - Recording / using data;
 - Post-production.
7. Sound treatment:
 - Evolution of sound recording;
 - Microphones and placement;
 - Recorders and their operation.
8. Sound in audiovisual and multimedia:
 - Overview of sound in cinema;
 - Foley vs. Sound libraries;
 - Sound design.

Recommended reading

1. Fonseca, N. (2012). Introdução à Engenharia do Som. Lisboa: FCA. ISBN: 9727227280
2. Rose, J. (2008). Audio Postproduction for Film and Video. Burlington, MA & Oxford: Focal Press. ISBN: 0240809718
3. Ribeiro, Nuno Magalhães. (2012) Multimédia e Tecnologias Interativas ISBN: 978-972-722-744-0
4. Buhler, James. (2018) Theories of the Soundtrack. Oxford University Press. ISBN: 9780199371105
5. Farnell, Andy (2010) Designing Sound: The MIT Press. ISBN-10 : 0262014416

Teaching and learning methods

Contact Hours: * Content exposition, with the aid of different sound products. * Questioning, in order to develop critical ability. * Demonstrative method, with the aid of technical equipment and sound design software. * Active method, when the student solves exercises. Non-contact Hours: * Active method, when the student does the proposed assignments.

Assessment methods

1. FINAL EVALUATION - (Regular) (Final, Supplementary, Special)
 - Final Written Exam - 40% (Written test solved in the classroom in the end of the semester)
 - Practical Work - 60% (Group of 2 assignments solved outside of class. Each assignment is worth 30% of the final grade.)
2. FINAL EVALUATION FOR STUDENT WORKERS - (Student Worker) (Final, Supplementary, Special)
 - Intermediate Written Test - 40% (Written test solved in the classroom in the end of the semester)
 - Practical Work - 60% (Group of 2 assignments solved outside of class. Each assignment is worth 30% of the final grade.)

Language of instruction

1. Portuguese
2. English

Electronic validation

Joao Pedro Dias Babo de Carvalho, Stefan Sfichi	Ana Lucia Jesus Pinto	Barbara Costa Vilas Boas Barroso	Luisa Margarida Barata Lopes
15-10-2023	15-10-2023	13-11-2023	12-12-2023