

Music Informatics

Code: 100669
ECTS Credits: 6

2025/2026

Degree	Type	Year
Musicology	OT	3
Musicology	OT	4

Contact

Name: Jordi Roquer Gonzalez

Email: jordi.roquer@uab.cat

Teachers

Carles Badal Perez-Alarcon

Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

Basic knowledge, acquired from completing "Musical language I" and "Musical language II", is required. A good level of English is advisable.

Objectives and Contextualisation

The primary objective of this course is to familiarise students with various technological applications related to musicology, both from the perspective of the digital humanities (digital archiving, databases, data analysis and visualisation) and from the field of music creation and production (DAWs, virtual instruments, plugins, and an introduction to studio recording).

By the end of the course, students should be able to:

- Demonstrate a general understanding of the potential applications of technologies related to data analysis and visualisation.
- Use basic vocabulary in the field of digital humanities and data management.
- Demonstrate a general understanding of the potential applications of technologies related to music creation.
- Operate fluently in a DAW environment with MIDI and audio capabilities.

- Approach the arrangement and production of musically complex pieces.
- Use practical vocabulary to better understand and describe any sonic phenomenon.
- Possess a solid theoretical foundation in both the history of modern music production and its procedural and analytical tools.

Competences

Musicology

- Apply technological and informatic media (internet, data bases, specific editing software and sound processing, etc.) to the discipline of musicology.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.

Learning Outcomes

1. Apply basic technological concepts linked to music.
2. Be familiar with all the computer tools specific to musicology and know how to apply them correctly in projects.
3. Carrying out a planning for the development of a subject-related work.
4. Develop habits for transfer to the ambit of musical dissemination and information the musical training acquired.
5. Interpret the rules localized information on the websites of regulatory bodies on the Internet.
6. Solve problems of a methodological nature in the area of musicology.
7. Solving problems autonomously.
8. Use computer applications to edit scores.
9. Use sound sequencers and editors at user level.

Content

THEORETICAL:

History of the Digital Humanities: where we are and where we come from.

Basic concepts in Digital Humanities and data environments.

Data formats: file types and database management.

History of recording: key formats and technologies.

History of music production (1950-2020).

Theoretical foundations and basic principles of sound.

Basic aspects of mixing and signal routing.

Equalisation.

Compression.

Basic principles of the MIDI protocol and digital audio.

Introduction to music production in a DAW environment.

Introduction to sampling and sample libraries.

Introduction to synthesis and electronic audio generation.

Analytical study of various audio production tools with corrective and/or creative capabilities.

PRACTICAL:

Gathering and downloading data online.

Designing and creating a custom database.

Creating a data visualisation from a text.

Creating a data visualisation from a dataset.

Aural recognition of the studied effects and creative processes.

MIDI recording of a harmonic backing.

Hands-on activities related to different methods of sound synthesis.

Remixing a professional multitrack file.

Mixing an orchestral arrangement from a MIDI file.

Composition, production and mixing of a musical background for a video game sequence in a DAW environment.

Composition, production and mixing of music for an advertisement in a DAW environment.

FINAL PROJECT:

Composition, arrangement, recording, editing and mixing of an original track in the recording studio.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Practical sessions	25	1	1, 3, 2, 7, 8, 9
Teacher lectures	20	0.8	4, 3, 5, 2, 6
Type: Supervised			
Supervision	7	0.28	3
Type: Autonomous			
Information search	15	0.6	3

The course combines theoretical and practical sessions. Historical, theoretical and applied concepts are explained in the theoretical sessions. In the practical sessions, the students will train using the basic functionalities of the software used for the course. For the practical sessions, the student will have a guiding document to go step by step throughout each practice. The final project will be based on a study recording and the delivery of a final report.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Continuous evaluation	30%	3.5	0.14	1, 3, 5, 2, 7, 8, 9
Final project	30%	28	1.12	1, 4, 3, 2, 7, 6, 8, 9
Theory exam	40%	1.5	0.06	1, 7, 6, 8, 9

Throughout the course, two partial exams will be conducted via the Nearpod platform, accounting for 40% of the final grade.

Assessment will be completed with two additional activities: one assignment related to the field of Digital Humanities (20%) and a music production project (40%). This project will be divided into two components: 20% for the final product and 20% for a written report that must link the product to the theoretical content covered in the course.

Students who do not pass the course will have the opportunity to take a resit exam covering all course content. The assignments cannot be resubmitted or recovered.

If both compulsory assignments are not submitted, the course will be considered as not assessable.

For this course, the use of Artificial Intelligence (AI) technologies is permitted exclusively for support tasks such as bibliographic or information search, text correction, translation, and other similar uses expressly authorised by the teaching staff. In any written activity, students must clearly identify which parts have been produced using such technologies, specify the tools used, and reflect critically on how they have influenced the process and the final outcome. Lack of transparency in the use of AI in any assessed activity will be considered academic dishonesty and may result in partial or total penalisation of the activity, or more serious consequences if applicable.

This course does not allow for single assessment.

Bibliography

BLANQUEZ, Javier y MORERA, Omar (2002): *Loops, una historia de la música electrónica*. Barcelona: Reservoir Books.

BROMHAM Gary; Moore, Austin (2023). *Distortion in Music Production: The Soul of Sonics*. Routledge.

BURDICK Anne, Johanna Drucker, Peter Lunenfeld, Todd Presner, i Jeffrey Schnapp. *Digital_humanities*. Cambridge, MA: MIT Press, 2012. https://archive.org/details/DigitalHumanities_20170

COX, Christoph & WARNER, Daniel (Eds.). (2004). *Audio culture: Readings in modern music*. Bloomsbury Publishing USA.

CUNNINGHAM, Mark (1996): *Good Vibrations*. Londres: Sanctuary Productions.

HEPWORTH-Sawyer, Russ; HODGSON, Jay; MARRINGTON, Mark (2019). *Producing Music*. Routledge.

FRITH, Simon; ZAGORGKI-THOMAS, Simon (eds.). (2012). *The Art of Record Production: An Introductory Reader for a New Academic Field*. Farnham: Ashgate.

GIBSON, David (2019). *The art of mixing: a visual guide to recording, engineering, and production*. Routledge.

KATZ, Mark. (2004): *Capturing Sound: How Technology Has Changed Music*. Berkeley: University of California Press.

MARTIN, George (1979): *All you need is ears*. New York: St. Martin's Griffin.

_____ (1997): *Summer of love. The making of Sgt. Peppers*. Londres: Macmillan

MILES, Huber David (2007): *The MIDI Manual*. Abingdon: Focal Press.

MOYLAN, William; Burns, Lori; Alleyne, Mike (2022). *Analyzing Recorded Music: Collected Perspectives on Popular Music Tracks*. Routledge

LEVITIN, Daniel (2007). "How recordings are made: analog and digital tape-based recording". In: *Audio Anecdotes III* (pp. 3-14). AK Peters/CRC Press.

_____ (2014): *Modern Recording Techniques*. Abingdon: Focal Press.

RUDOLPH, Thomas E. (1996): *Teaching Music With Technology*. Chicago: GIA Publications.

RUDOLPH, Tom; RICHMOND, Floyd; MASH, David and WILLIAMS, David (2002): *The Technology Strategies for Music Education*. Londres: Hal Leonard Publishing.

SIMONS, Dave (2004). *Studio Stories: How the Great New York Records Were Made: From Miles to Madonna, Sinatra to the Ramones*. Hal Leonard Corporation.

THEBÉRGE, Paul (1997): *Any Sound You Can Imagine: Making Music/Consuming Technology*. Middletown: Wesleyan University Press.

TRYNKA, Paul (Ed)(1996): *Rock hardware: 40 years of rock instrumentation*. London: Balafon Books.

WACHOLTZ, Larry E. (1996): *Star tracks. Principles for success in the music and entertainment business*. Nashville: Thumbs up Publishing.

WARNER, Timothy (2003): *Pop music, tecgnology and creativity*. London: Asgate.

Software

AUDACITY

Free, open-source, cross-platform audio software

<https://www.audacityteam.org>

GEPHI

Free and open-source software for graph and network visualisation

<https://gephi.org/>

REAPER

Digital Audio Workstation (DAW). Cross-platform audio software

<https://www.reaper.fm>

VOYANT

Free and open-source software for text analysis and visualisation

<https://voyant-tools.org/>

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	1	Catalan	first semester	morning-mixed
(TE) Theory	1	Catalan	first semester	morning-mixed