

DIGITAL REPRESENTATIONS OF MUSIC

COURSE OUTLINE

1. GENERAL			
SCHOOL	School of Music and Optoacoustic Technologies		
ACADEMIC UNIT	Department of Music Technology and Acoustics		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0807.6.001.1	SEMESTER	2nd
COURSE TITLE	Digital Representations of Music		
INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	WEEKLY TEACHING HOURS	CREDITS	
	0	6	
Total	0	6	
COURSE TYPE general background, special background, specialised general knowledge, skills development	Scientific area		
PREREQUISITE COURSES	None		
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English		
OFFERED TO ERASMUS STUDENTS	Yes (in English)		
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/SMOT165/		
2. LEARNING OUTCOMES			
Learning outcomes			
The aim of the course is to provide the necessary knowledge for understanding the particularities involved in the management, storage, and processing of semantic information in music. Upon successful completion of the course, students will be able to: • Understand the use of such data and its application in systems for the recognition, classification, and retrieval of digital files • Produce and process alternative forms of description of musical information based on standards such as MIDI or MusicXML • Produce musical annotations by encoding temporally evolving musical information into a digital audio signal • Explore and enrich large sets of musical data (music datasets, music corpora)			
General Competences			
The course aims to help students acquire the following general competencies: • Searching for, analyzing, and synthesizing data and information, using the necessary technologies • Adapting to new situations • Working autonomously • Working in teams • Working in an interdisciplinary environment • Promoting free, creative, and inductive thinking			
3. SYLLABUS			

The subject of the course "Digital Representations of Music" concerns any type of descriptive information that can be associated with music. Such information includes, for example, metadata describing a musical work as a whole, as well as the description of its content in terms of notes, rhythmic values, and musical instruments. The syllabus presents technologies related to issues such as:

- Music metadata
- Music notation file formats (score formats)
- Score rendering tools
- Software tools and programming libraries for the composition and processing of symbolic music notation (music APIs)

As indicative examples, the course presents standards such as: ID3, MIDI, MusicXML, MEI, Kern and Humdrum, Music21, and MusicBrainz. Emphasis is placed on the encoding of control commands for digital musical instruments and files using the MIDI protocol.

The practical exercises include reading, creating, and editing MIDI files with the Mido package (MIDI Objects for Python).

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face-to-face												
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	Programming in Python, Use of open-source software, Laboratory Education. Use of a learning management system (e-class).												
TEACHING METHODS The manner and methods of teaching are described in detail.	<table> <tr> <th>Activity</th><th>Semester workload</th></tr> <tr> <td>Lectures</td><td>26</td></tr> <tr> <td>Practice Exercises</td><td>26</td></tr> <tr> <td>Study and literature review</td><td>48</td></tr> <tr> <td>Εξέτασεις - Πρόοδοι</td><td>50</td></tr> <tr> <td>Course total</td><td>150</td></tr> </table>	Activity	Semester workload	Lectures	26	Practice Exercises	26	Study and literature review	48	Εξέτασεις - Πρόοδοι	50	Course total	150
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Course total	150												
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	Written final examination, involving problem-solving and short-answer questions (60%). 2-3 progress examinations during the semester, held in a computer lab (40%).												

5. ATTACHED BIBLIOGRAPHY

1. Ε. Νίκα-Σαμψών, Εισαγωγή στην μουσικολογία και τις μουσικές επιστήμες, University Studio Press, 2019. [2]
 - Χ. Αλεξανδράκη και Χ. Χουσίδης, Πρωτόκολλα Μουσικής Επικοινωνίας, Διδακτικές Σημειώσεις, Εγχειρίδιο Διδάσκοντος, 2011
- Γενικά δεν υπάρχει ελληνικό συγγραμμά που να καλύπτει την ύλη του μαθήματος. Χρησιμοποιούνται οι σημειώσεις διδάσκοντος καθώς και διάφορες διαδικτυακές πηγές που αναφέρονται στη διδασκόμενη ύλη. Σημειώσεις διδάσκοντος.
1. Αλεξανδράκη (2011), Πρωτόκολλα Μουσικής Επικοινωνίας
 2. Αλεξανδράκη (2024), Δημιουργία, επεξεργασία κι απόδοση ψηφιακών αναπαραστάσεων της μουσικής με προγραμματιστικά εργαλεία της Python

