



Course Syllabus

Course Code	Course Title	ECTS Credits
MUTX-201	Fundamentals of Computer Music 1	6
Prerequisites	Department	Semester
MUTX-140	Music & Dance	Fall/Spring
Type of Course	Field	Language of Instruction
Thematic Area	Music Technology	English
Level of Course	Lecturer(s)	Year of Study
1 st Cycle	Dr. Haris Sophocleous	3 rd – 4 th
Mode of Delivery	Work Placement	Corequisites
Face-to-face	N/A	N/A

Course Objectives:

The main objectives of the course are to:

- Demonstrate a modular approach of thinking to understand the nature of digital sound in computer music.
- Identify the existing conceptions of sound in electronic music.
- Apply computer music software to facilitate creation of exercises in sound from 'low-level' approaches as building blocks to larger musical structures.
- Use the computer to explore their creativity in designing sound compositions from the ground up to a fully fledged compositional project.

Learning Outcomes:

After completion of the course students are expected to be able to:

- Demonstrate basic understanding of the fundamentals of computer music creation.
- Organize sound using standard computer music techniques in a variety of computer music software.
- Demonstrate a basic ability to abstract computer music principles and techniques from their form of representation in each software.
- Evaluate through compositional work the understanding of idiomatic approaches to sound creation.

Course Content:

- Brief historical overview and techniques used in the Electronic Studios of the 50s, 60s and 70s (WDR, GRM).
- Synthesis 101: Oscillator, simple additive synthesis based on mathematical formulas, FM, AM, RM synthesis, delay and reverb.
- Subtractive synthesis.
- Fast Fourier Transform: Analysis and re-synthesis of audio samples into usable soundscapes. Timbral manipulation.
- ‘Musique concrete’: theory and formulation of a basic composition based on the integration of common techniques of that era.
- ‘Elektronische Musik’: theory and formulation of a basic composition based on the integration of common techniques of that era.
- Design basic sound modules for various performances/installations/compositions.

Learning Activities and Teaching Methods:

Lectures; laboratory activities; group work; projects; class participation

Assessment Methods:

Attendance; Practical Project No.1; Practical Project No.2; Practical Project No.3

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
<i>Creating Sounds from Scratch</i>	Andrea Pejrolo and Scott B. Metcalfe	Oxford University Press	2017	9780199921874
<i>The Past and Promise of Electronic Music</i>	Simon Emmerson	Macmillan Press	1986	978-0333397602
<i>Introduction to Computer Music</i>	Nick Collins	Wiley	2010	978-0470714553

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
<i>Electronic and Computer Music</i>	Peter Manning	Oxford University Press	1993	0-19-816328-2