SOUND ENGINEERING II

COURSE OUTLINE

Responsible: Dimosthenis Makris

1. GENERAL			
SCHOOL	School of Music and Optoacoustic Technologies		
ACADEMIC UNIT	Department of Music Technology and Acoustics		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0807.5.005.1	**SEMESTER**	1st
COURSE TITLE	Sound Engineering II		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	5	7
Total	**5**	**7**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Skills Development, Scientific Area
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Winter Semester
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/SMOT258/

2. LEARNING OUTCOMES

Learning outcomes

The aim of the course is to provide students with the theoretical knowledge and practical skills required for advanced sound recording in professional studio and live performance environments. The course focuses on the planning, technical setup, and execution of recording sessions, including equipment selection, microphone placement, signal routing, mixing console operation, monitoring, multitrack recording, and technical troubleshooting.

Students will develop practical experience in recording individual instruments, vocalists, ensembles, and live performances. Particular emphasis will be placed on achieving high-quality sound capture, selecting appropriate recording techniques, maintaining a clean and reliable signal path, and adapting the recording setup to different musical, technical, and acoustic requirements.

As part of the coursework, students will plan and carry out the recording of a musical performance. They will be expected to organise the session, select and position the necessary equipment, configure the recording system, and deliver a technically coherent stereo version of the recorded material for evaluation. Upon successful completion of the course, students will be able to:

- plan and prepare recording sessions in studio and live performance environments;
- select suitable microphones, recording equipment, and technical configurations for different sound sources;
- apply mono, stereo, and multichannel microphone techniques;
- configure and operate analogue or digital mixing consoles for recording purposes;

- establish appropriate signal routing between microphones, preamplifiers, consoles, audio interfaces, monitoring systems, and recording software;
- apply correct gain staging and recording-level practices;
- assess the acoustic and technical requirements of different recording spaces;
- operate multitrack recording systems and organise recorded material effectively;
- identify and resolve common problems related to noise, distortion, phase, connectivity, monitoring, and signal flow;
- evaluate the technical and perceptual quality of a recording and prepare the recorded material for subsequent production stages.

General Competences

The course aims to support the development of the following general competences:

- searching for, analysing, and synthesising data and information through the use of appropriate technologies;
- making informed technical and creative decisions;
- working effectively as part of a team;
- adapting to new situations, working environments, and technical requirements;
- developing independent, creative, and critical thinking.

3. SYLLABUS

- Planning and technical preparation of studio and live recording sessions.
- Signal flow, gain staging, routing, monitoring, and mixing-console operation.
- Microphone selection and placement for voices, instruments, ensembles, and live performances.
- Stereo recording techniques: theoretical principles, comparative analysis, phase relationships, stereo image, and mono compatibility.
- Equalisation and dynamics processing: operating principles and practical guidelines for use during recording.
- Spatial effects: basic principles and appropriate use in recording and monitoring environments.
- Multitrack and multichannel recording, including session organisation, documentation, and preparation of recorded material for stereo or surround reproduction.
- Development of efficient working methods and evaluation of alternative recording approaches.
- Technical planning of sound systems for concerts, including system requirements, signal distribution, stage setup, monitoring, and live multitrack recording.
- Assessment of the acoustic characteristics of studios and performance spaces in relation to microphone placement, recording requirements, and sound-system design.

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	E-class
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** | **Semester workload** **Course total** |

STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	Intermediate (30%) and Final (70%) project.

5. ATTACHED BIBLIOGRAPHY

[1] Davis, G. and Jones, R., *The Sound Reinforcement Handbook*, Yamaha Corporation, 1988. ISBN: 978-0881889000.

[2] Huber, D. M., Caballero, E. and Runstein, R., *Modern Recording Techniques: A Practical Guide to Modern Music Production*, 10th ed., Focal Press, 2024.

[3] Corbett, I., *Mic It! Microphones, Microphone Techniques, and Their Impact on the Final Mix*, 2nd ed., Routledge, 2021.

[4] McCarthy, B., *Sound Systems: Design and Optimization: Modern Techniques and Tools for Sound System Design and Alignment*, 3rd ed., Routledge, 2016.

[5] Course notes prepared by D. Xenikakis and supplementary educational material provided by the instructor.