

MULTIMEDIA TECHNOLOGY

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	0807.1.005.0	SEMESTER	1st
COURSE TITLE	Multimedia Technology		
INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	WEEKLY TEACHING HOURS	CREDITS	
	4	6	
Total	4	6	
COURSE TYPE general background, special background, specialised general knowledge, skills development	Compulsory / Background		
PREREQUISITE COURSES	None		
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English		
OFFERED TO ERASMUS STUDENTS	Yes (in English)		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES	
Learning outcomes	
Upon successful completion of the course, students will be able to: • Understand in depth the nature of digital signals containing multimedia content. • Know the basic data compression techniques. • Evaluate the quality characteristics of multimedia content. • Produce and process multimedia content. • Develop interactive software applications using a scripting language. • Create hypertext pages and embed multimedia content and interactive elements.	
General Competences	
The course aims to enable students to acquire the following general competences: • Search, analysis, and synthesis of data and information, using the necessary technologies. • Adaptation to new situations. • Autonomous work. • Team work. • Promotion of free, creative, and inductive thinking.	

3. SYLLABUS

A general introduction to the technologies of encoding, processing, and representation of multimedia content. More specifically, the course content includes:

- **Multimedia Content & Applications:** Types of multimedia content and general applications.
- **Digitization & Quality:** General information digitization techniques and quality characteristics.
- **Compression Principles:** General principles of compression (lossy or lossless, perceptual or statistical encoding).
- **Text:** Encodings, representations and annotations (e.g., XML), word processing and spreadsheets, hypertext and hypermedia.
- **Audio:** Capture, synthesis, encoding, compression, processing, and related software.
- **Image:** Capture, synthesis, encoding, compression, processing, and related software.
- **Video:** Capture, synthesis, encoding, compression, processing, and related software.
- **Animation:** Capture, synthesis, encoding, compression, processing, and related software.
- **Interactive Media:** Interactive multimedia and applications based on scripting languages.
- **Web Technologies:** Web-based multimedia applications and internet services.

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	Use of open-source software, ICT (Information and Communication Technologies) in teaching, and in 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>Independent Study</td><td>48</td></tr> <tr> <td>Projects</td><td>45</td></tr> <tr> <td>Exams</td><td>5</td></tr> <tr> <td>Course total</td><td>150</td></tr> </table>	Activity	Semester workload	Lectures	26	Practice exercises	26	Independent Study	48	Projects	45	Exams	5	Course total	150
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Course total	150														
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	Final written examination, consisting of problem-solving and short-answer questions (70%). Weekly assignments, consisting of individual learning exercises (30%).														

5. ATTACHED BIBLIOGRAPHY

Z. Li, M. Drew, J. Liu, Fundamentals of Multimedia, Springer, 2014.
V. Costello, Multimedia Foundations, Focal Press, 2012.

