UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Umanistiche
ACADEMIC YEAR	2023/2024
BACHELOR'S DEGREE (BSC)	DISCIPLINE DELLE ARTI, DELLA MUSICA E DELLO SPETTACOLO
SUBJECT	HUMANISTIC COMPUTER SCIENCE
TYPE OF EDUCATIONAL ACTIVITY	C
AMBIT	10645-Attività formative affini o integrative
CODE	22717
SCIENTIFIC SECTOR(S)	ING-INF/05
HEAD PROFESSOR(S)	MAZZOLA GIUSEPPE Ricercatore a tempo determinato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	9
INDIVIDUAL STUDY (Hrs)	180
COURSE ACTIVITY (Hrs)	45
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	2
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**MAZZOLA GIUSEPPE** Wednesday 10:00 13:00 Ex Dipartimento di Ingegneria Informatica, edificio 6, terzo piano

DOCENTE: Prof. GIUSEPPE MAZZOLA

PREREQUISITES	Basic computer skills.
LEARNING OUTCOMES	KNOWLEDGE AND UNDERSTANDING The student will acquire knowledge and methodologies to define, address, and solve problems related to the production and enjoyment of digital audio content. The student will be able to select and evaluate algorithms and fundamental data structures. The course includes class lectures and exercises, analysis, and discussion of simple applications and case studies. For the verification of this objective, the final test consists of an interview on the course topics and the presentation of an essay. ABILITY TO APPLY KNOWLEDGE AND UNDERSTANDING The student will be able to apply the acquired knowledge to the use of methods and techniques for the representation and use of digital audio. He/she will also learn how to relate the market realities concerning devices, processes, and applications of the sector. The course includes theoretical and computer exercises (individual and in a group) and the preparation of an essay. For the verification of this objective, the test consists of the discussion of an essay. AUTONOMY OF JUDGEMENT Through the methodological approach acquired during the course, the student will gain the ability to use and integrate the learned tools in different application areas. He/she will be able to face new problems and propose solutions even in the presence of limited and incomplete data, integrating the knowledge acquired during the course, and will be able to analyze the merits and defects of the proposed solutions. The course includes class lectures, theoretical and computer exercises (individual and group), the preparation of an essay. For the verification of this objective, the exam includes an interview on the topics of the lectures and the discussion of an essay. COMMUNICATION SKILLS The student will be able to work in a group to communicate with competence and language properties problems of digital audio processing, structuring, and management, even in specialized contexts. He/she will be able to interact with designers and technicians for the realization of systems for the production and use of digital audio. The course includes individual and group lectures and exercises. The exam consists of the final interview on the lecture topics; the discussion of an essay. LEARNING ABILITY The student will be able to face the problems related to the production and enjoyment of digital audio content. The course includes individual and group exercises. For the verification of this objective, the test consists of the discussion of an essay.
ASSESSMENT METHODS	The assessment of learning (final exam) is divided into two phases: 1) Development of a term paper and presentation of the same. 2) Oral exam The thesis is developed autonomously by the student and consists in the development of an application project for the management of digital video and audio information and for their presentation. It aims to ascertain the possession of the skills and ability to apply knowledge and understanding of the methods and systems studied during the course. The oral test consists of an interview on the topics of the program of the subject. The result of the learning assessment is a grade out of thirty. EVALUATION The result of the test will be considered: EXCELLENT (30-30 honors) if the student shows excellent knowledge of the topics, excellent language skills, good analytical skills and ability to apply knowledge to solve the problems presented; VERY GOOD (26-29) if the student will show a good command of the subject, full ownership of the language and ability to apply the knowledge to solve the problems presented; GOOD (24-25) if the student demonstrates a basic knowledge of the main topics, good command of the language, limited ability to autonomously apply the knowledge to solve the problems presented; MORE THAN SUFFICIENT (20-23) if the student will demonstrate not having full command of the main topics but a good understanding of the same, satisfactory ownership of the language, but lack of ability to independently apply the acquired knowledge; SUFFICIENT (18-19) if the student will show minimum basic knowledge of the main teaching topics and language techniques, minimum ability to apply the acquired knowledge; INSUFFICIENT if the student will not have an acceptable knowledge of the contents of the topics covered during the course. The evaluation methods will be the same for both attending and non-attending students.
EDUCATIONAL OBJECTIVES	The course aims to provide the main notions regarding the methodologies of representation and processing of multimedia content, such as sounds, images and videos. The main opensource software to support the professions of the arts, music and entertainment will be analyzed. The course will be articulated alternating as much as po ssible moments of exercises to lectures. The exercises will be aimed at putting into practice what has been discussed at

	the theoretical level and will be a basis for the realization of a final work that will assess the skills acquired.
TEACHING METHODS	Class lectures. Computer exercises. Development of simple application projects. The program will be the same for attending and non-attending students.
SUGGESTED BIBLIOGRAPHY	M. De Santo, F. Colace, P. Napoletano: "Informatica per le arti visive, la musica e lo spettacolo", McGraw-Hill, 2012. Altro materiale didattico reso disponibile dal docente sul sito del corso.

SYLLABUS

Hrs	Frontal teaching
3	Digital representation of information
5	Digital Representation of Images. Image formation and processing
5	Digital Video Representation. Video editing techniques.
5	Digital representation of sounds. Representation formats. Physical and psychophysical characteristics of sound.
3	Digital Audio Processing. Midi and sound synthesis

Hrs	Practice
6	Exercises with the GIMP software
6	Exercises with Digital Video Editing software
9	Exercises with the Audacity software
3	Tools for Digital Audio Processing. MIDI and sound synthesis.