SYLLABUS
COURSE DESCRIPTION

COURSE TITLE	**Multimedia Systems**
COURSE CODE	76230
SCIENTIFIC SECTOR	INF/01
DEGREE	Bachelor in Computer Science
SEMESTER	1st
YEAR	3rd
CREDITS	6

TOTAL LECTURING HOURS	40
TOTAL LAB HOURS	20
ATTENDANCE	Attendance is not compulsory, non-attending students can independently access the course material. Exam modalities are the same as attending students.
PREREQUISITES	-
COURSE PAGE	https://ole.unibz.it/

SPECIFIC EDUCATIONAL OBJECTIVES	• Type of course: caratterizzanti • Scientific area: discipline informatiche The course provides the basic notions related to the technologies for the acquisition, processing, archiving and transmission of multimedia signals and their use in complex multimedia systems.

LECTURER	**Andrea Rosani**
SCIENTIFIC SECTOR OF THE LECTURER	ING-INF/03
TEACHING LANGUAGE	English
OFFICE HOURS	Friday 16:00-17:00. Set an appointment at most the previous day by email: andrea.rosani@unibz.it. Office POS 1.04, first floor, Faculty of Computer Science, piazza Domenicani
TEACHING ASSISTANT	Riccardo Billero

OFFICE HOURS	Tuesday 16:00-17:00. Set an appointment at most the previous day by email: riccardo.billero@unibz.it. Office POS 1.04, first floor, Faculty of Computer Science, piazza Domenicani 3
LIST OF TOPICS COVERED	• Introduction to digital media: audio, vector and raster images, video, animation, text • Multimedia signals, sampling and quantizations • Multimedia compression standards: text, image, video, audio • Operating systems issues: synchronization, file systems for continuous media, real-time network protocols • Streaming multimedia data • Multimedia applications design: multimedia authoring systems, languages and standards
TEACHING FORMAT	Frontal lectures and lab.

LEARNING OUTCOMES	**Knowledge and understanding:** • Know the key principles, the structure and the organisation of data processing systems; **Applying knowledge and understanding:** • Be able to apply the own knowledge in different working contexts; • Be able to select and apply innovative technologies and methods that are appropriate for a given context and problem; • Be able to develop programs that interact with modern operating systems. **Making judgements** • Be able to collect and interpret useful data and to judge information systems and their applicability. **Communication skills** • Be able to use modern communication systems, even at a distance. **Learning skills** • Have developed learning capabilities to pursue further studies with a high degree of autonomy. • Be able to follow the fast technological evolution and to learn cutting edge IT technologies and innovative aspects of last generation information systems.

ASSESSMENT	The assessment is based on the lab assessment and the final oral exam. The lab assessment is composed of a project that will be assigned to groups of 2-3 students during the course. It should be submitted by the end of the course. The project motivate the students to practice throughout the semester. The final exam evaluates the students' understanding of the theoretical backgrounds. N.B.: • In case of a positive mark, the lab assessment will count for all 3 regular exam sessions. The evaluation is the same for all members of the same group. • Projects have to be evaluated BEFORE the oral exam, otherwise the exam cannot be registered.

	• For non-attending students a project will be assigned upon request.
ASSESSMENT LANGUAGE	English
EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	For both, attending and non-attending students, the assessment is based on (i) Project work (up to 10 points), and (ii) Oral exam (up to 20 points). The final mark is composed by the sum of the two parts. Relevant for assessment of the project work is the solution of the given task and the ability to explain the adopted strategy to reach the solution. Relevant for the assessment of the final exam: clarity of answers, mastery of language, ability to summarize, evaluate, and establish relationships between topics.

REQUIRED READINGS	Lecture notes will be handed out during the course. Optional reading: Foundamentals of Multimedia by Li, Ze-Nian, Drew, Mark S., Liu, Jiangchuan, Springer International Publishing, ISBN 978-3-319-05290-8, DOI 10.1007/978-3-319-05290-8 Multimedia Communication Technology by Jens Ohm, Springer-Verlag Berlin Heidelberg - DOI 10.1007/978-3-642-18750-6
SUPPLEMENTARY READINGS	-
SOFTWARE USED	Software available to students of the Free University of Bozen-Bolzano.