Universidad Zaragoza

**Academic Year/course: 2024/25**

# 31022 - Multimedia processing and interactivity

## Syllabus Information

**Academic year:** 2024/25
**Subject:** 31022 - Multimedia processing and interactivity
**Faculty / School:** 110 - Escuela de Ingeniería y Arquitectura
**Degree:** 656 - Degree in Telecommunications Technology Engineering
**ECTS:** 6.0
**Year:** 4
**Semester:** First semester
**Subject type:** Optional
**Module:**

## 1. General information

The purpose of the subject is to provide future professionals in the field of telecommunications with the most basic knowledge and methodologies for working with multimedia and interactive systems . Due to its advanced and applied nature, deals with specific aspects, technologies and problems associated with multimedia and interactive systems, with emphasis on those of special practical relevance today.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (https://www.un.org/sustainabledevelopment/es/), to the extent that multimedia engineering and interactivity is a discipline that makes it possible to process most of the information available today and thus analyze the degree of achievement of all the SDGs targets.

## 2. Learning results

- Get to know the theoretical and practical resources to be able to fully address the development of an interactive multimedia application.
- Know the techniques, tools and methodologies that the market demands in the field of design and programming, aimed at the distribution of multimedia content
- Understand the functionality of interactive systems.
- Be able of creating, encoding, managing, processing and distributing different multimedia content, considering, on the one hand, criteria of usability and accessibility of audiovisual, broadcast and interactive services, and on the other hand, the specific characteristics of each service.
- Have the capacity for continuous learning with the objective of assimilating the evolutionary nature of this type of new the evolutionary nature of this type of new technologies.

## 3. Syllabus

1.- Multimedia Information Processing
    Image Processing
    Audio Processing
    Natural Language Processing
2.- Multimedia systems
    Definition and structure
    Analysis, design and features
    Systems
    Introduction to multimedia programming
3.- Interactivity
    Interaction Design
    Interfaces and interaction

## 4. Academic activities

- Participatory lectures 40 hours

  The contents of the subject will be presented, with a practical orientation towards multimedia systems.
- Problem solving and case studies: 10 hours

Practical problems of audiovisual design and installations will be solved.

- Laboratory practices: 10 hours

  Simulation tools will be used to practice multimedia systems and interactivity.

- Teaching assignments: 24 hours

  The design and programming of an interactive multimedia system will be carried out

- Study and personal work: 60 hours
- Assessment tests. 6 hours

## 5. Assessment system

Written tests (40%). Composed of open-ended questions and multiple-choice questions. Minimum grade of 4.

Supervised practical work (40%). The student's analytical and critical capacity will be valued fundamentally in the resolution of medium-sized problems using the necessary calculation and simulation tools, answering the questions posed, and presenting, transmitting and interpreting the results obtained. Student initiatives to address original solutions will be particularly positively valued.

Practices (20%). The assessment of the practice will be done through the requested documentation and the observation of performance and attitude in the sessions.

If the student has not passed any of these activities during the semester, they will have the opportunity to pass the subject by means of a global test in the two official exam calls.

## 6. Sustainable Development Goals

4 - Quality Education
8 - Decent Work and Economic Growth
9 - Industry, Innovation and Infrastructure