

# Máster Universitario en Aprendizaje Profundo para Inteligencia Artificial de Audio y Visual / Master in Deep Learning for Audio and Visual Artificial

## Program Academic Structure::

| Subject type             | ECTS |
|--------------------------|------|
| Mandatory                | 48   |
| Final dissertation (TFM) | 12   |
| Total                    | 60   |

| CÓDIGO | ASIGNATURA   | SEMESTRE | CARÁCTER  | ECTS |
|--------|--|----------|-----------|------|
| 33412  | Deep Learning fundamentals and basic tools   | 1        | Mandatory | 8    |
| 33413  | Review of Established Signal Processing Techniques   | 1        | Mandatory | 4    |
|        | Deep Learning for Audio Signal Processing: Architectures and Applications                  | 1        | Mandatory | 6    |
|        | Deep Learning for Visual and Multimodal Processing: Models and Socio-environmental Impacts | 1        | Mandatory | 6    |
|        | Deep Learning for Image and Video Processing: Learning Strategies and Applications         | 1        | Mandatory | 6    |
| 33417  | Biometrics & Applied Intelligence  | 2        | Mandatory | 6    |
| 33418  | High Performance Computing for Deep learning   | 2        | Mandatory | 6    |
| 33419  | Research methodologies and seminars  | 2        | Mandatory | 6    |
| 33420  | Master thesis  | 2        | Mandatory | 12   |

## Programs and Academic structure of the subjects

### Information

[\(Plan de estudios publicado en BOE\)](#)

Given the international orientation of the proposed master, the admission profile has been defined in terms of the required knowledge, rather than specifying the degree titles that allow access to the master. Thus, the admission profile to the Master's Degree in Deep Learning for Audio and Video Signal Processing will correspond to the following candidates:

1. Engineers or candidates who hold a bachelor's degree in Engineering Areas related to ICT (Information and Communication Technologies), provided their degree contains at least the following contents:
  - a. 24 ECTS of mathematical fundamentals in calculus (12 ECTS), linear algebra (6 ECTS), probability and statistics (6 ECTS).
  - b. 12 ECTS of programming in some high-level language.
  - c. 6 ECTS in signal processing.
  - d. 6 ECTS in machine learning.
2. Graduates who hold an official degree equivalent to any of the above, either issued by a Spanish university or belonging to another member state of the European Higher Education Area, or so declared in accordance with the previous regulations of university studies in Spain. These graduates are required to demonstrate a level of training equivalent to the requirements defined in the first case.
3. Applicants who hold degrees obtained in educational systems outside the European Education Area. These applicants are required to demonstrate a level of training equivalent to the requirements defined in the first case.

According to the academic profile of students being accepted to the Master, it will be considered whether they should complete an intensive leveling program scheduled at the beginning of the academic year in September. The program includes a leveling module in Fundamentals of Signal Processing of 1 ECTS, aimed at students whose previous training in the area is less than 12 ECTS. This module will be offered as a training supplement because it is not expressly a subject of the academic programme.

Since the official language for all courses is English, knowledge of the English language at the minimum level of the B2 certificate will be required for acceptance into the Master's programme. In case of not being English native speakers, this level of language must be accredited by a certificate or by an interview with the Master's Academic Committee.