62234 - Machine learning for Big Data

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	534 - Master's in IT Engineering
ECTS	3.0
Course	2
Period	First semester
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The methodology used in this course is based on the following:

The learning activities are based on:

1. **Lectures.**
2. **Talks from experts.**
3. **Lab sessions** .
4. **Tutoría** .
5. **Evaluation** . Oral presentation of a practical assignment.

The student work is based on:

1. **Practical sessions.**
2. **Personal study.**
3. **Work on the practical assigment.**

5.2.Learning activities
Student work

The course has 3 ECTS credits, that is equivalent to approximately 75 hours of student work (35 of lectures and practical sessions and 40 hours of personal work).

5.3.Program
1. Introduction.
2. Deep Neural Networks.
3. Training of Deep Neural Networks. Backpropagation.
4. Deep Convolutional Networks.
5. Practical aspects of deep neural networks (Numerical gradient, overfitting, regularization, activation functions, stochastic gradient descent).
6. Application cases: Natural Language Processing and Visual Classification.
7. Hardware and software tools for deep learning.
8. Sequential Learning.
9. Approximate Nearest Neighbour.

5.4.Planning and scheduling
The organization of the course sessions in the Rio Ebro Campus is
- Lectures.
- Practical sessions.

The schedule of the lectures and practical sessions will be announced in the EINA web and the course web.

The course assignments will be evaluated at the dates announced by the University.

5.5.Bibliography and recomended resources