

30231 - Automatic Learning

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	439 - Bachelor's Degree in Informatics Engineering
ECTS	6.0
Year	3
Semester	Indeterminate
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The learning process is based on the teachers' lectures, and the students' work during the practical sessions. In both cases, previous personal work is essential. Before each lecture, students should study and understand previous lectures. Before each practical session, students should analyse the assignment, perform some preliminary work, and identify the parts that require further clarifications from the teacher. At the end of each practical sessions, students should present the results obtained.

5.2. Learning tasks

The average students' work required for this course is 150 hours:

- Lectures (type T1) (30 hours).
- Practical sessions (type T3) (30 hours).
- Personal work (type T7) (80 hours).
- Examinations (type T8) (10 hours).

5.3. Syllabus

1. Supervised Learning. Regression
2. Regularization and model selection
3. Logistic regression
4. Generative models. Naive Bayes
5. Anomaly Detection
6. Non supervised learning. PCA
7. Clustering
8. Recommender systems
9. Non parametric methods. Gaussian processes
10. Big Data

5.4. Course planning and calendar

5.5. Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

- [BB] 2. Duda, Richard O.. Pattern classification / Richard O. Duda, Peter E. Hart, David G. Stork . - 2nd ed. New York [etc.] : John Wiley and Sons, cop. 2001
- [BB] Kevin P. Murphy, Machine Learning: A Probabilistic Perspective, MIT Press, 2012
- [BB] Murphy, Kevin P.. Machine learning : a probabilistic perspective / Kevin P. Murphy . Cambridge [etc.] : The MIT Press, cop. 2012
- [BC] Alpaydin, Ethem. Introduction to machine learning / Ethem Alpaydin . 3rd ed. Cambridge [etc.] : MIT Press, cop. 2014
- [BC] Bishop, Christopher M.. Pattern recognition and machine learning / Christopher M. Bishop . [1st ed., 13th print.] New York : Springer, 2009

Listado de URL

- Transparencias y apuntes de la asignatura, enunciados de problemas, casos de estudio y Guiones de prácticas[<http://add.unizar.es>]