

Academic Year: (2022 / 2023)

Review date: 19-05-2022

Department assigned to the subject: Telematic Engineering Department

Coordinating teacher: MUÑOZ MERINO, PEDRO JOSE

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

DESCRIPTION OF CONTENTS: PROGRAMME

- 1 - Introduction to learning analytics and educational data mining
 - 1.1 Definitions and purpose
 - 1.2 Educational platforms and services
 - 1.3 Reference architectures and frameworks
 - 1.4 Learning analytics life cycle
- 2 - Collection of educational data
 - 2.1 Types of data
 - 2.2 Storage formats
 - 2.3 Interoperability. CAM, xAPI, IMS Calliper specifications
 - 2.4 Combination of data from different sources in distributed services
- 3 - Detection of student skills
 - 3.1 Item Response Theory
 - 3.2 Bayesian models
 - 3.3 Knowledge spaces
- 4 - Detection of student behaviors
 - 4.1 Preferences
 - 4.2 Help-seeking
 - 4.3 Gaming the system
 - 4.4. Others
- 5 - Visual analytics for the learning process
 - 5.1 Existing tools
 - 5.2 Video and exercise visualizations
 - 5.3 Social interaction visualizations
 - 5.4 Other high-level visualizations
 - 5.5 Analysis and interpretation of visualizations from different situations
 - 5.6 Interventions in the learning process
- 6 - Prediction of learning outcomes
 - 6.1 Prediction of dropout
 - 6.2 Prediction of learning gains
 - 6.3 Prediction of interactions in services

% end-of-term-examination:	60
% of continuous assessment (assignments, laboratory, practicals...):	40