UNIVERSITAT DE BARCELONA

Teaching plan for the course unit

General information

Course unit name: Introduction to Machine Learning

Course unit code: 569389

Academic year: 2020-2021

Coordinator: Maria Salamo Llorente

Department: Department of Mathematics and Computer Science

Credits: 5

Single program: S

More information

Estimated learning time — Total number of hours 125

Face-to-face and/or online activities 60

(Due to COVID-19 restrictions, we expect to have 25%-50% of in-person activities)

Independent learning 65

Teaching blocks

1. Unsupervised Learning

1.1. Introduction to unsupervised learning

1.2. Cluster analysis

1.3. Factor Analysis

1.4. Visualization

2. Supervised learning

2.1. A gentle introduction to supervised learning

2.2. Lazy Learning

2.3. Feature selection

2.4. Model Selection

2.5. Support Vector Machine

2.6. Recommender Systems

Teaching methods and general organization

Teaching will follow a face-to-face (in-person), virtual (online), or mixed model according to the instructions of the competent authorities. In principle, we expect to follow the mixed teaching model for the 2020-2021 academic year.

*** In case of in-person teaching:**

The weekly schedule of in-person activities is distributed in two hours of theory class and one hour of practical sessions.

*** In case of mixed teaching required by the health situation (this is the expected model)**:

If the health situation allows it and the necessary conditions are met, we expect to have between 25% and 50% of in-person activities. This means dedicating about one hour to in-person teaching per week and about two hours of online teaching, which will be synchronous or asynchronous. Moreover, synchronous sessions will be opened to keep the proper subject dynamics and/or the resolution of doubts that may arise (and that complement the raised in in-person activities).

For in-person teaching, priority will be given to resolving practical doubts and carrying out theory exercises. Priority will also be given to carrying out evaluation activities in person.

For virtual teaching, the material will be delivered so that students can consult it asynchronously.

Therefore, a flipped classroom methodology will be followed (as far as possible).

*** In case on-line teaching is required by the health situation:**

The time ranges of mixed teaching are maintained but all teaching will be carried out in an online format.

Official assessment of learning outcomes

Depending on the health situation, evaluable activities can be face-to-face tests, synchronous online tests, or work delivery.

Examination-based assessment

Depending on the health situation, evaluable activities can be face-to-face tests, synchronous online tests, or work delivery.