Brain machine interfaces

Academic Year: (2022 / 2023) **Review date: 15-02-2022**

Department assigned to the subject: Department of Bioengineering and Aerospace Engineering

Coordinating teacher: VAQUERO LOPEZ, JUAN JOSE

Type: Electives ECTS Credits : 3.0

Year : 4 Semester : 2

DESCRIPTION OF CONTENTS: PROGRAMME

1 Neurophysiology
2 Brain signals: recording and Imaging
3 Internal and external brain stimulation
4 Neural Signal processing
5 Machine learning for brain signals
6 Main types of Brain Machine Interfaces
7 Clinical and practical applications of Brain Machine Interfaces
8 Ethics of Brain Machine Interfaces

LEARNING ACTIVITIES AND METHODOLOGY

THEORETICAL PRACTICAL CLASSES.
Knowledge and concepts students must acquire. Receive course notes and will have basic reference texts. Students partake in exercises to resolve practical problems.

TUTORING SESSIONS.
Individualized attendance (individual tutoring) or in-group (group tutoring) for students with a teacher. Subjects with 6 credits have 4 hours of tutoring/ 100% on- site attendance.

STUDENT INDIVIDUAL WORK OR GROUP WORK.
Subjects with 6 credits have 98 hours/0% on-site.

WORKSHOPS AND LABORATORY SESSIONS.
Subjects with 3 credits have 4 hours with 100% on-site instruction. Subjects with 6 credits have 8 hours/100% on-site instruction.

ASSESSMENT SYSTEM

FINAL EXAM.
Global assessment of knowledge, skills and capacities acquired throughout the course. The percentage of the evaluation varies for each subject between 60% and 0%.

CONTINUOUS EVALUATION.
Assesses papers, projects, class presentations, debates, exercises, internships and workshops throughout the course. The percentage of the evaluation varies for each subject between 40% and 100% of the final grade.

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