Universidad Zaragoza

68956 - Rehabilitation Technology

Syllabus Information

Academic Year: 2021/22
Subject: 68956 - Rehabilitation Technology
Faculty / School: 326 - Escuela Universitaria Politécnica de Teruel
Degree: 614 - Master's in Innovation and Entrepreneurship in Health and Wellbeing Technologies
ECTS: 3.0
Year: 1
Semester: Second semester
Subject Type: Optional
Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The learning process that has been designed for this subject is based on the following:

? The learning of new concepts and methodologies thanks to the virtual and master classes, where the correct participation of the students will be emphasized.

? Autonomous study of the student reflected in the resolution and subsequent participation in the classes.

? Design and subsequent generation of technological devices focused on the health field, led by teachers.

Since the focus of this subject is based on both theoretical and practical concepts, the learning process will require the student to regularly attend virtual and master classes, as well as tutorials, in order to achieve the corresponding knowledge.

4.2. Learning tasks

The activities are sub-classified into face-to-face and non-face-to-face classes. The classroom teaching and learning activities consist of:

? In person classes. Study and description of a real project previously validated in patients, showing the design, creation, action protocol, and results obtained.

? Teaching jobs. Activities generated in specific classrooms (computer lab) with hardware / software material that meets the real needs of clinical specialists

? Tutorials. Follow-up of the works focused on the final generation of a global project by the teachers, in order to analyze the student's progress and guide him correctly.

Non-contact teaching and learning activities consist of:

Project. Analysis, design and subsequent creation of a technological factory, for subsequent delivery and presentation.

Study of the subject program based on the virtual and master classes. This section includes all the aspects not covered in the face-to-face activities such as: 1) study of the final examination; 2) reading articles and additional recommended bibliography; and 3) creation of problems that serve to achieve the project to present.

Student work

The course consists of 3 ECTS credits corresponding to 75 estimated hours of student work distributed as follows:

In person activities: 50 h (Solving problems and cases, laboratory practices, and teaching assignments)

Resolution of problems and cases: 18h

Laboratory sessions: 15h

Teaching work: 17h

Theory study: 5 pm

Virtually personalized tutoring teacher-student: 6 h

Assessment tests: 1.5h

4.3. Syllabus

The course program includes the following blocks and subjects:

Block 1:

? Fundamentals of Virtual Rehabilitation and generation of virtual / augmented environments.

? Classification of hardware devices in Virtual Rehabilitation

? Software tools in Virtual Rehabilitation

Block 2:

? Analysis and generation of a technological system in Virtual Rehabilitation.

? Generation of an action protocol.

? Analysis of results.

Block 3:

? Classification of virtual reality systems: non-immersive, semi-immersive and immersive systems.

? Virtual reality applied to cognitive rehabilitation. Methodology to be used in the design of interventions in the rehabilitation process.

Block 4:

? Introduction to meta-analysis techniques.

4.4. Course planning and calendar

The schedules to solve problems and cases, laboratory sessions and teaching assignments will show on the website of the center and the subject.

The delivery dates of all assignments, practices, and exams will announce in advance.

4.5. Bibliography and recommended resources

The bibliography recommended by the teaching staff will be available in the library of the University of Zaragoza
http://psfunizar10.unizar.es/br13/eBuscar.php?tipo=a

Type BB. Mario Gutierrez, F Vexo, and Daniel Thalmann. 2008. *Stepping into Virtual Reality* (1st. ed.). Springer-Verlag TELOS, Santa Clara, CA, USA.