Universidad Zaragoza

62228 - Computer Graphics and immersive multimedia environments

Información del Plan Docente

Academic Year	2018/19
Subject	62228 - Computer Graphics and immersive multimedia environments
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	534 - Master's in IT Engineering
ECTS	6.0
Year	1
Semester	Second semester
Subject Type	Compulsory
Module	---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

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

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as

- The learning of concepts and techniques through theoretical classes, in which the participation of students will be encouraged.
- The study of the course contents by the students, and participation in class when solving the proposed problems.
- The preparation of practical assignments by the students, guided by the professors, that favor the assimilation of theoretical knowledge.

Please note that the course has both a theoretical and a practical orientation. Thus, the learning process emphasizes both student attendance to class and the elaboration of the practical assignments, as well as personal study.

4.2.Learning tasks

The course (150 hours) includes the following learning tasks:

- Classroom activities (50 hours). Seminars, problem solving, laboratory, visits, etc.
- Practice and research assignments (65 hours).
- Tutorials (5 hours).
- Autonomous work and study (25 hours).
- Assessment (5 hours).

4.3.Syllabus

The course will address the following topics:

Section 1:

- Fundamentals of Computer Graphics and synthetic image generation
- High quality Computer Graphics
- Real time Computer Graphics

Section 2:

- Light transport
- Global illumination
- Participating media

Section 3:

- Multiview geometry modeling for computer vision
- Structure from Motion (SfM)
- Visual SLAM (Simultaneous Localization and Mapping)

Section 4:

- Virtual reality
- Human-computer interaction
- Populated environments

4.4.Course planning and calendar

Classroom sessions (lectures, problem-solving, lab sessions) will take place in Campus Río Ebro.

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the Center website.

4.5.Bibliography and recommended resources