

Academic Year: (2023 / 2024)

Review date: 28/04/2023 08:46:35

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: ZARRAONANDIA AYO, TELMO AGUSTIN

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

DESCRIPTION OF CONTENTS: PROGRAMME

1.-Current trends in human computer interaction

- 1.1.- Pervasive computing
- 1.2.- Tangible and embodied interaction
- 1.3.- Artificial intelligence for interaction
- 1.4.- VR, AR and MR
- 1.5.- Collaborative systems

2.- Interaction in immersive systems

- 2.1.- Augmented, virtual and mixed reality
- 2.2.- IoT and IoP
- 2.4.- Context-aware systems
- 2.5.- Interaction styles and ecologies

3.- Interaction Design and User Experience

- 3.1.- Design principles
- 3.2.- UX and gamification
- 3.3.- Interaction design tools and techniques
- 3.4.- Design for all
- 3.5.- Experience prototyping

LEARNING ACTIVITIES AND METHODOLOGY

LEARNING ACTIVITIES

- AF1 - Theoretical class [13,33 hours with 100% attendance, 0,44 ECTS]
- AF2 - Practical classes [25 hours with 100% attendance, 0,83 ECTS]
- AF3 - Theoretical practical classes [10 hours with 100% attendance, 0,33 ECTS]
- AF5 - Tutorials [6 hours with 100% attendance, 0,2 ECTS]
- AF6 - Group work [75 hours with 0% attendance, 2,5 ECTS]
- AF7 - Individual student work [50 hours with 0% face-to-face, 1,7 ECTS]

METHODOLOGY

MD1 - Lectures with the support of computer and audiovisual media, in which the main concepts of the subject are developed and the bibliography is provided to complement the students' learning.

MD2 - Critical reading of texts recommended by the professor of the subject: press articles, reports, manuals and / or academic articles, either for later discussion in class, or to expand and consolidate the knowledge of the subject.

MD3 - Resolution of practical cases, problems, etc. individually or in groups

MD4 - Presentation and in-class discussion, under the moderation of the professor, on topics related to the content of the subject, as well as practical cases

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ASSESSMENT SYSTEM

| | |
|---|-----|
| % end-of-term-examination/test: | 0 |
| % of continuous assessment (assignments, laboratory, practicals...): | 100 |
| SE1 Participation in class - 10% | |
| SE2 Individual or group assignments carried out during the course - 90% | |
| + Individual assignments - 40% | |
| - Implementation of an AR system with WebXR and Web technology - 30% | |
| - Analysis and discussion of immersive applications or systems - 10% | |
| + Group project - 50% | |
| - Design and implementation of a VR system with Unity - 40% | |

BASIC BIBLIOGRAPHY

- Erin Pangilinan editor. Steve Lukas editor. Vasanth Mohan editor. Creating augmented and virtual realities : theory and practice for next-generation spatial computing, O'Reilly Media, 2019
- William R. Sherman Alan B Craig Understanding virtual reality interface, application, and design, Morgan Kaufmann, 2019

BASIC ELECTRONIC RESOURCES

- Unity . Plataforma de aprendizaje oficial de Unity: <https://learn.unity.com/>
- W3C Immersive Web Working Group . Immersive Web: <https://immersiveweb.dev/>