

Academic Year: ( 2023 / 2024 )

Review date: 28-04-2023

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

<b>% end-of-term-examination:</b>	0
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	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/>