Augmented Reality

Academic Year: (2019 / 2020)   Review date: 08-05-2020

Department assigned to the subject: Telematic Engineering Department

Coordinating teacher: IBAÑEZ ESPIGA, MARIA BLANCA

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 2

OBJECTIVES

BASIC COMPETENCES
CB6   Possess and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context
CB7   That students know how to apply the knowledge acquired and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study
CB8   That students are able to integrate knowledge and face the complexity of making judgments based on information that, being incomplete or limited, includes reflections on social and ethical responsibilities linked to the application of their knowledge and judgments
CB9   That students know how to communicate their conclusions and the knowledge and ultimate reasons that sustain them to specialized and non-specialized audiences in a clear and unambiguous way

GENERAL COMPETENCES
CG6   Capacity to adapt to changes in requirements associated with new products, new specifications and environments.
CG7   Be able to generate new ideas (creativity) and to anticipate change.

SPECIFIC COMPETENCES
CE8   Ability to apply augmented reality technology, in the context of Connected Industry 4.0.

LEARNING RESULTS
Manage augmented reality technology for the design and implementation of distributed applications in the context of Industry 4.0 by collecting information from different data sources.

DESCRIPTION OF CONTENTS: PROGRAMME

- Basic fundamentals of Augmented Reality.
- Techniques to superimpose digital information on the real environment.
- Techniques to interact with the real and digital environment.
- Data management in augmented reality environments

LEARNING ACTIVITIES AND METHODOLOGY

AF1   Lectures (2 hours).
AF3   Theoretical and practical classes (18 hours).
AF5   Tutorials (2 hours).
AF6   Group work (25 hours).
AF7   Individual work of the student (25 hours)
AF8   Midterm and final exams (6 hours).

TEACHING METHODOLOGIES
MD1   Teacher¿s lecture with 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 teacher of the subject: articles, reports, manuals and / or academic articles, either for further discussion in class, or to expand and consolidate the knowledge of the subject.
MD3   Resolution of practical cases, problems, etc. raised by the teacher individually or in groups.
MD4   Exhibition and discussion in class of topics related to the content of the subject, as well as case studies.

MD5   Writing reports and memorandum individually or within a workgroup.

ASSESSMENT SYSTEM

Continuous evaluation (SE2):
-Midterm I: 20%
-Midterm II: 20%
-Final work (in group): 20%

Final exam (SE3): 40%

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

BASIC BIBLIOGRAPHY

 - Craig, A. B Understanding augmented reality: Concepts and applications., Newnes, 2013

 - Linowes, J., & Babilinski, K. Augmented Reality for Developers: Build Practical Augmented Reality Applications with Unity, ARCore, ARKit, and Vuforia, Packt Publishing Ltd., 2017