Multimedia

Academic Year: (2020 / 2021) **Review date: 06-07-2020**

Department assigned to the subject: Computer Science and Engineering Department, Signal and Communications Theory

Coordinating teacher: GONZALEZ CARRASCO, ISRAEL

Type: Compulsory ECTS Credits : 6.0

Year : 4 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Linear Algebra, Computer Architecture

OBJECTIVES

1. Theoretical knowledge on the development of multimedia systems (PO a) (CECRI1, CEIC1)
2. Capacity to define usability and utility requirements, designing multimedia presentations and systems for everyone according to a set of specifications (PO a, e) (CECRI1)
3. Capacity to design, implement and evaluate multimedia presentations and systems, applying both usability and accessibility guidelines as well as respecting standards and laws (PO a, c, e) (CECRI1)
4. Capacity to problem-solving and decision-making with initiative, autonomy, and creativity (PO c) (CECRI1, CEIC1)
5. Teamwork, taking different roles and proving its leadership (PO d) (CECRI1)
6. Capacity to communicate knowledge, skills, and capabilities (PO g) (CECRI1, CEIC1)

* ABET Program Outcomes
a. An ability to apply knowledge of mathematics, science and engineering.
c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
d. An ability to function on multidisciplinary teams.
e. An ability to identify, formulate, and solve engineering problems.
g. An ability to communicate effectively.

* ACREDITA+ Competences
CECRI1. Ability to design, develop, select, and evaluate computer-based systems and applications, guaranteeing their reliability, security and quality within existing ethical, legislative and normative constraints.
CEIC1. Ability to design and build digital system, including computers, computer-based systems, and communication systems.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to Multimedia
2. Digitalization
3. Codification of multimedia content (audio, voice, image, video)
3.1. Audio codification
3.2. Video codification
5. Text coding (Natural Language Processing)
6. Multimedia Information Recovery Systems. Generic architecture of an RI system
7. Indexing, Storage and Consultation of multimedia contents

LEARNING ACTIVITIES AND METHODOLOGY

- Theoretical lectures: 3.0 ECTS (PO a) (CECRI1, CEIC1)
Lectures in which theoretical concepts on multimedia contents will be presented.
- Practical lectures: 1.0 ECTS (PO a, c) (CECRI1, CEIC1)
Problem-based learning. Programming different codecs with the purpose of understanding those technical principles that underlie the development of multimedia systems. Use of different multimedia content analysis methods
- Design project: 1.5 ECTS (PO a, c, d, e, g) (CECRI1)

Project-based learning. Designing, editing, and programming a multimedia presentation within a work group. As a result, student may submit a dissertation and make a presentation.
- Individual study: 0.5 ECTS (PO a, c, e, g) (CECRI1, CEIC1)

ASSESSMENT SYSTEM

- Design project: 100% (PO a, c, d, e, g) (CEIC1 y CECRI1).

The design project is divided into two parts:
Design Project Block 1 (50%): Codification (10%) + Project (40%)
Design Project Block 2 (50%): Defense (10%) + Project (40%)

% end-of-term-examination:	0
% of continuous assessment (assigments, laboratory, practicals…):	100

BASIC BIBLIOGRAPHY

- J. Krasner Motion Graphic Design: Applied History and Aesthetics, Focal Press.
- N. Champan; J. Chapman Digital Multimedia, John Willey.
- V. Costello Multimedia Foundations. Core Concepts for Digital Design, Focal Press.