

Academic Year: ( 2022 / 2023 )

Review date: 20-05-2022

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: TAJADURA JIMENEZ, ANA

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 1

**REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)**

Programming techniques (Year: 2 / Semester: 2)

Information Architecture (Year: 1 / Semester: 1)

**OBJECTIVES**

The objective of this course is for students to learn key programming and web design languages and techniques. At the end of the course students will be able to design and implement interactive digital publications for the World Wide Web.

**DESCRIPTION OF CONTENTS: PROGRAMME**

1. Introduction to Web Programming and Design
  - a. What is the Web? History and Evolution of the WWW
  - b. Content managers vs web programming
  - c. Introduction to design principles. Examples
2. HTML language
  - a. Environment for web development
  - b. Structure and navigation of a website
3. CSS manipulation
  - a. Link external CSS files with HTML documents
  - b. Control of design and text format using CSS
  - c. How to make a "Responsive" Web page?
4. Introduction to JavaScript and Document Object Model
  - a. How to create interactive web pages?
  - b. Syntax and bases of the Javascript language
  - c. Events in Javascript
  - d. Variables and functions in Javascript
  - e. Developer tools - the console
  - f. DOM Manipulation (Document Object Model)
  - g. Introduction to JQuery
  - h. Complex data structures. Storage and Data Management
5. Introduction to the Principles of Web Design, Heuristics and Patterns
  - a. Methodology of User-Centered Design
  - b. How to present the information on a website?
  - c. How to facilitate the navigation of a website?
  - d. Key elements in the design of a website
6. Advanced concepts: introduction to programming on the server

**LEARNING ACTIVITIES AND METHODOLOGY****TRAINING ACTIVITIES:**

**THEORETICAL-PRACTICAL CLASSES.** In them, the knowledge to be acquired by the students will be presented. They will receive the class notes and will have basic reference texts to facilitate the follow-up of the classes and the development of the subsequent work. Exercises and practical problems will be solved by the students and workshops will be held to acquire the necessary skills. There will be 42 hours with 100% attendance.

**TUTORIALS.** Individualized assistance (individual tutorials) or in group (collective tutorials) to the

students by the professor. 28 hours will be dedicated with a 25% of presenciality.

INDIVIDUAL OR GROUP WORK BY THE STUDENT. It will be dedicated 78 hours 0% presenciality.

#### TEACHING METHODOLOGIES:

MASTER CLASSES: 2 ECTS. Class lectures by the professor with the support of computer and audiovisual media, in which the main concepts of the subject are developed and the materials and bibliography are provided to complement the students' learning.

PRACTICAL CLASSES: 1 ECTS Resolution of practical cases, problems, etc. posed by the teacher individually or in groups.

PROGRAMMING EXERCISES: 1.25 ECTS. Initiated during the practical classes and completed outside of them, they aim to complete the development of the specific instrumental competences and to initiate the development of the specific attitudinal competences, as well as the transversal competences problem solving and application of knowledge.

CASE STUDY: 1.25 ECTS. Initiated during the practical classes and finished outside of them, its objective is to complete and integrate the development of all the specific and transversal competences, in the design and implementation of a practical case by means of group work.

TUTORIALS. Individualized assistance (individual tutorials) or group (group tutorials) to students by the professor. teacher.

FINAL EXAM: 0.5 ECTS. It aims to influence and complement the development of specific cognitive and procedural skills. It reflects especially the use of the master classes.

#### ASSESSMENT SYSTEM

CONTINUOUS ASSESSMENT. It will assess the work, presentations, performance in debates, classroom presentations, exercises, practices and work in the workshops throughout the course. The percentage of assessment will be 80% of the final grade.

FINAL EXAM. In which the knowledge, skills and abilities acquired throughout the course will be assessed globally. The percentage of assessment will be 20% of the final grade.

It is mandatory to take the final exam and get a minimum grade of 5 out of 10 on the exam.

<b>% end-of-term-examination:</b>	20
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	80

#### BASIC BIBLIOGRAPHY

- Elizabeth Castro; Bruce Hyslop HTML5 and CSS3: Visual QuickStart Guide, Seventh Edition, PeachPit Press, 2011
- Flanagan, D JavaScript: The Definitive Guide, O'Really Media, 2006
- Lenny Burdette The JavaScript PocketGuide, PeachPit Press, 2010
- Nielsen, J Designing Web Usability, New Riders, 2000
- Van Duyne, D. K., Landay, J. A., & Hong, J. I The design of sites: Patterns for creating winning web sites. , Prentice Hall Professional, 2007

#### ADDITIONAL BIBLIOGRAPHY

- null Eloquent JavaScript, disponible en <http://eloquentjavascript.net> .
- Dix, A., Finlay, J., Abowd, G., Beale, R.. Human-Computer Interaction, Prentice Hall, 3rd Edition, 2004
- Jonathan Chaffer Learning jQuery, Pckt Publishing, 2011
- Preece, J. Interaction Design. Beyond human computer interaction, John Wiley & Sons, 2002
- Shneiderman, B Designing the User Interface, Addison-Wesley, 3rd Edition., 1999
- Steve Suehring JavaScript Step by Step, Microsoft Press, 2008

## BASIC ELECTRONIC RESOURCES

- . ¿HTML Tutorial¿, Tutorial HTML de W3 Schools: <http://www.w3schools.com/html/>
- . ¿CSS Tutorial¿, Tutorial CSS de W3 Schools: <http://www.w3schools.com/css/>
- . ¿JavaScript Tutorial¿, Tutorial JavaScript de W3 Schools: <http://www.w3schools.com/js>
- . ¿jQuery Tutorial¿, Tutorial jQuery de W3 Schools: <http://www.w3schools.com/jquery/default.asp> &nbsp;"