# ACADEMIC PROGRAM

## WEB DEVELOPMENT I, CLIENT

## B.F.A. IN COMPUTER SCIENCE

***MODALITY: ON CAMPUS***

***ACADEMIC YEAR: 2022-2023***

| Name of the course: | Web Development I, Client |
|---|---|
| Degree : | Computer Science |
| Location: | Centro Universitario de Tecnología y Arte Digital |
| Area: | Web Development |
| Year: | 3º |
| Teaching period: | 1 |
| Type: | OB |
| ECTS credits: | 6 |
| Teaching modality: | On campus |
| Language: | English |
| Lecturer / Email | - |
| Web page: | http://www.u-tad.com/ |

## SUBJECT DESCRIPTION

### Area description

This subject provides the knowledge and skills necessary for a software engineer to develop a web project in its server and client components and its potential export as native or hybrid applications.

### Subject description

In this subject we will start from the concepts learned in the Fundamentals of Web Development subject, focusing on more advanced technologies on the web client side, starting with JQuery and AJAX, fundamental technologies in the development of the modern web, until we reach React.

## COMPETENCIES AND LEARNING OUTCOMES

### Competencies

BASIC AND GENERAL COMPETENCIES

CG1 - Ability to understand, schedule and solve problems trough software development

CG2 - To develop software that are environmental friendly, engaged with society and natural resources and law and ethics compliant

CG9 - Ability to learn, modify and develop new software solutions

CG10 - Use of creative techniques to carry out computer projects

BC1: Students should demonstrate knowledge in an area of study that builds upon the foundation of general secondary education and goest beyond at a level that, while supported by advanced textbooks, also encompasses certain aspects derived from the cutting edge of their field of study.

BC2: Students should be able to apply their knowledge to their work or vocation in a professional manner, and they should possess the competencies typically demonstrated through the development and defence of arguments as well as problem-solving within their field of study.

BC3: Students must possess the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that involve reflection on socially, scientifically, or ethically significant issues.

BC4: Students should be capable of conveying information, ideas, problems, and solutions to both specialized and non-specialized audiences.

BC5: Students should have developed the learning skills necessary to pursue further studies with a high degree of autonomy.

SPECIFIC COMPETENCIES

CE5 - Ability to design and deploy client-side and server-side web applications with scalable standard technologies

CE6 - Knowledge of the use of asynchronous clientserver communication mechanisms and packaging of these web applications for mobile platforms for the development of dynamic web applications

CE10 - Ability to work with a release manager and generate application documentation automatically

**Learning outcomes**

Upon completion of the degree, the graduate will be able to:

- To understand the full stack idea

- To be able to develop front end apps in the browser using Javascript and frameworks

- To understand the HTTP protocols family

- To know and apply web services

- To develops back end applications with NodeJs and Python

- To know the development environment of mobile Android apps

- To develop a simple mobile app with Java/Kotiln.

## CONTENTS

Javascript

AJAX/JQuery

CSS libraries and Javascript abstraction

Frontend technologies

## SUBJECT SYLLABUS

● Review of web development fundamentals

o Introduction to web architecture and requests

o Introduction to markup languages, HTML and CSS

● JavaScript

o Introduction to JavaScript

o Requests: AJAX and JSON

or JQuery

● Design and layout with Bootstrap

● Advanced frameworks: React

o Basic concepts: Components and life cycle: Props, State, …

or JavaScript XML (JSX)

o Basic structure of a React application

o Practical developments in React

## TRAINING ACTIVITIES AND TEACHING METHODOLOGIES

### TRAINING ACTIVITIES

| LEARNING ACTIVITIES | Total hours | Hours of presence |
|---|---|---|
| *Theoretical / Expository classes* | 22,00 | 22,00 |
| *Practical classes* | 31,60 | 31,60 |
| *Tutorials* | 4,00 | 2,00 |
| *Independent study and autonomous work of the student* | 48,00 | 0,00 |
| *Elaboration of work (group or individual)* | 37,60 | 0,00 |
| *Evaluation Activities* | 6,80 | 6,80 |
| *TOTAL* | 150 | 62,4 |

### Teaching methodologies

Expository method or master lesson

Case learning

Learning based on problem solving

Cooperative or collaborative learning

inquiry learning

Flipped classroom methodology

Gamification

Just in time Teaching (JITT) or classroom on time

Expository method or master lesson

Case method

Learning based on problem solving

Cooperative or collaborative learning

inquiry learning

Flipped classroom methodology

Gamification

## TEMPORAL DEVELOPMENT

DIDACTIC UNITS / TOPICS TIME PERIOD

Fundamentals Weeks 1 and 2

Javascript Weeks 3-7

Bootstrap Weeks 8 and 9

React Weeks 10-15

## EVALUATION SYSTEM

| ASSESSMENT SYSTEM | MINIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%) | MAXIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%) |
|---|---|---|
| *Assessment of participation in class, exercises or projects of the course* | 10 | 30 |
| *Assessment of assignments, projects, reports, memos* | 30 | 60 |

| | | |
|---|---|---|
| *Objective test* | 30 | 60 |

## GRADING CRITERIA

| ASSESSMENT SYSTEM | ORDINARY EVALUATION | EXTRAORDINARY EVALUATION |
|---|---|---|
| *Assessment of participation in class, exercises or projects of the course* | 10 | 10 |
| *Assessment of assignments, projects, reports, memos* | 40 | 30 |
| *Objective test* | 50 | 60 |

**General comments on the evaluations/assessments**

● In the ordinary call the grade will be calculated as follows:

NOTE1 = SE1*10% + SE2*40% + SE3*50%

● Grade ≥ 5 in each of the parts (SE2 projects/ averages of the SE3 exams). A student suspended in projects must take the Extraordinary exam. If the student does not pass with a GRADE1 higher than 5, she will have the opportunity to take the ordinary exam and replace her worst result in one of the partial exams with said grade. If the student does not obtain approval in the ordinary call, the student must re-sit the failed parts, maintaining the same evaluation criteria for the extraordinary call.

● Final numerical grade from 0 to 10, it will be an essential requirement to achieve a minimum grade of 5 points in order to obtain a pass.

● Out of date and form work will not be accepted without justified cause and if it is accepted it will be with a considerable reduction in the grade. Each delivery is understood as an exam and will have the right to review.

● The extraordinary exam is an exam, there is no possibility of resubmission of the project. Only for suspended students, the extraordinary exam will count as 60% of the final grade and the ordinary grade (participation 10% and projects 30%) will count as 40% of the final grade.

## LIST OF REFERENCES (BOOKS, PUBLICATIONS, WEBSITES):

Basic:

Robin Nixon. Learning PHP, MySQL JavaScript with jQuery, CSS HTML5. 4th edition. O'Reilly 2015.

Recommended:

Craig Walls. Spring in Action. 4th edition. Manning 2014.

Nicholas S. Williams. Java for Web Applications. Wrox Professional 2014.

Aravind Shenoy, Ulrich Sossou. Learning Bootstrap. Packt 2014.

Casimir Saternos. Client-Server Web Apps with JavaScript and Java. O'Reilly 2014.

Sujoy Acharya. Mastering Unit Testing Using Mockito and JUnit. Packt 2014.

Satya Avasarala. Selenium WebDriver. Practical Guide. Packt 2014.

Brad Dayley. Node.js, MongoDB and AngularJS Web Development. Addison-Wesley 2014.

## REQUIRED MATERIALS, SOFTWARE AND TOOLS

**Type of classroom**
Theory classroom

Board and projection system

**Materials:**
Personal Computer

**Software:**
Navegador Google Chrome.

IDE para desarrollo web (Visual Studio Code).