

Program	61IW – Bachelor of Science in Software Engineering 61CI – Bachelor of Science in Computer Engineering 61SI – Bachelor of Science in Information Systems 61TI – Bachelor of Science in Information Society Technologies
----------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Course number and name	
Number	615000967, 615001047, 615000971, 615001049, 615000966, 615001044
Name	Web Development
Semester	S7 (September-January)

Credits and contact hours	
ECTS Credits	6
Contact hours	60

Coordinator's name	Alonso, Santiago (santiago.alonso@upm.es)
---------------------------	-------------------------------------------

Specific course information	
Description of course content	
<p>The subject has a marked technological nature, dealing with the design, creation and testing of a complete web system seen from a functional point of view (not graphic or aesthetic design), in such a way that the student who passes it will be able to face, on the one hand, the development necessary to solve the back-end part and, on the other, the front-end or client part.</p> <p>To do this, some of the techniques and tools currently recommended in these environments will be used, starting with the appropriate versions of ECMAScript or TypeScript and establishing the MEAN development stack with NodeJs for the server part and its programming through Express. Finally, Angular will be seen as a suitable framework for the development of client applications in these environments.</p>	
List of topics to be covered	
<ol style="list-style-type: none"> 1. Basic concepts in web development 2. ECMAScript v6 <ol style="list-style-type: none"> a. Characteristics and syntax of the language b. Language objects c. Classes and objects d. The language in the browser: <ol style="list-style-type: none"> i. Browser objects ii. AJAX 3. NodeJs <ol style="list-style-type: none"> a. Basics of HTTP and REST APIs b. General characteristics c. Native and external modules d. Routing: Express 	

<ul style="list-style-type: none"> e. Testing <p>4. Angular</p> <ul style="list-style-type: none"> a. General characteristics b. TypeScript c. Components and directives d. Data-binding e. Navigation and routes f. Services g. Asynchronous requests

Prerequisites or co-requisites

Those attending the course should have a good base of software design and programming, as well as knowledge about relational databases (design and use with SQL).

They should also have a certain knowledge about HTML and CSS though if they do not, they may learn them on their own with the support of the teacher, using tutorships.

As a subject that belongs to the four bachelors indicated before, this subject is positioned at the seventh semester, which means that the attendant has all the background from previous courses.

Course category in the program

R (required)

E (elective)

(elective courses may not be offered every year)

Specific goals for the course

Specific outcomes of instruction

- Be able to generate graphical user interfaces for Web applications with current development environments.
- Be able to build solutions based on Web applications with quality service architectures.
- Be able to successfully apply techniques to find new alternatives and ideas, dividing the problem, relating concepts and establishing analogies
- Be able to identify, understand and apply the syntax and semantics of languages for the development of Web applications.
- Be able to build solutions based on Web applications with current development environments

Further reading and supplementary materials

- “JavaScript : the definitive guide”, Flanagan, David, O'Reilly 2011
- “JavaScript patterns”, Stefanov, Stoyan, O'Reilly 2010
- “JavaScript cookbook”, Powers, Shelley O'Reilly 2010
- <http://www.w3.org>
- <https://www.typescriptlang.org/>
- <https://angular.io/>
- <https://nodejs.org/es/>

Teaching methodology

<input checked="" type="checkbox"/> lectures	<input type="checkbox"/> problem solving sessions	<input type="checkbox"/> collaborative actions	<input checked="" type="checkbox"/> laboratory sessions
----------------------------------------------	---------------------------------------------------	------------------------------------------------	---------------------------------------------------------



Other:	
---------------	--