

EG16. Basics of web programming

Subject Information:

Code	EG.16	Plan	2014	ECTS	5
Type of Subject	Elective course	Year	2014	Semester	2
Knowledge area:	Webdata management and analysis				
Department:	Master in Webdatametrics				
Virtual Platform	Platform:	Studium.usal.es			
	Access URL:	Studium.usal.es			

Data about the instructor-teacher

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Remarks (previous requirements, coordination, other, if any)

Previous requirements:

- Basic computer skills (open, save and edit text files, install software using a wizard).
- Basic Internet usage.

Objectives and competencies of the subject (basics, general, transversal, specifics)

- Specific competence: Design the architecture and content of a Web application, separating the information from its format and using the relevant standards and recommendations in each case.
- Specific competence: Choose and implement the suitable Web client/server technology, according to given requirements.

Programme (Brief Description of modules) and expected learning outcomes

1. Introduction.

- Web user-agents and servers.
- Protocols.
- Languages of the Web.

Expected learning outcomes:

- Basic knowledge about HTTP communications between browsers and web servers.

2. Client-side technologies.

- HTML.
- CSS.
- JavaScript.
- Other: Flash, Java, Silverlight, etc.

Expected learning outcomes:

- Clear notions about the separation between content (HTML), style (CSS) and behaviour (JavaScript) in a web applications.
- Basic HTML documents editing skills.
- Basic CSS style-sheets editing skills.
- Basic JavaScript programming.
- Validation and compliance of standards (W3C).

3. Server-side technologies.

- Web servers: Apache, IIS, Tomcat, Nginx, Lighttpd, etc.
- Web programming language: PHP, ASP.Net, Python, Ruby, etc.
- A brief introduction to PHP programming.
- Asynchronous communications between clients and servers: AJAX.

Expected learning outcomes:

- Basic knowledge about the diversity of web servers and server-side web programming languages.
- Basic PHP programming skills.
- Simple AJAX interactions between client-side and server-side web apps.

Methodology

The teaching strategy used in the course uses a progressive and parallel development of the theoretical contents and the undertaking of personal experimentation activities in and outside the classroom.

All the activities, both in and outside the classroom, will be supported by the use of a learning management system (LMS).

- Resources:

Bibliography:

- Crockford, D. (2008). JavaScript: The Good Parts. Unearthing the Excellence in JavaScript. O'Reilly Media / Yahoo Press, (May 2008).
- Haverbeke, M. (2011). Eloquent JavaScript: A Modern Introduction to Programming. No Starch Press; 1 edition (February 3, 2011).
- Lengstorf, J. (2009). PHP for Absolute Beginners. Apress; 1 edition (October 15, 2009).
- Meyer, E. A. (2006). CSS: The Definitive Guide. O'Reilly Media; Third Edition edition (November 14, 2006).
- Pilgrim, M. (2010). HTML5: Up and Running. O'Reilly Media; 1 edition (August 24, 2010).

Online resources:

1. W3C standards specifications:
 - a. <http://www.w3.org/html/wg/drafts/html/master/>
 - b. <http://www.w3.org/Style/CSS/>
 - c. <http://www.w3.org/standards/webdesign/script>
2. W3C Validators:
 - a. <http://validator.w3.org/>
 - b. <http://jigsaw.w3.org/css-validator/>

Evaluation System:

General Considerations:

The evaluation system of this course is guided by the development of a simple web application. The development of this simple web application is divided in a step-by-step process:

1. A simple and static web page using HTML and CSS.
2. A simple server-side PHP application.
3. User experience enhancements using JavaScript: AJAX and jQuery effects.

Evaluation Criteria:

Each part of the web development project is evaluated in the following way:

1. A simple and static web page using HTML and CSS.
 - a. Content and style must be clearly separated.
 - b. All HTML and CSS documents must be valid (W3C standards compliant).
 - c. Optional: responsive design.
2. A simple server-side PHP application.
 - a. Dynamic queries through parameters.
 - b. Database access.
 - c. Optional: JSON, XML, RDF.
3. User experience enhancements using JavaScript.
 - a. AJAX interactions between client-side and server-side apps.
 - b. jQuery effects.

Recommendation for second and following evaluations:

- Remember the basics: HTML for content, CSS for styles and JavaScript for behaviour.
- W3C validators usually offer good advices.
- Keep your PHP code as simple as possible.
- Use jQuery for your AJAX interactions.

Employment Opportunities (optional)

