

Internet Applications Programming

Code: 104530
ECTS Credits: 6

Degree	Type	Year	Semester
2503743 Management of Smart and Sustainable Cities	OB	1	2

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Prerequisites

For a good understanding of the subject, it is necessary to have consolidated the fundamentals of programming languages seen in "computer science".

Objectives and Contextualisation

In this subject we will learn to program web applications through the HTML, CSS and JavaScript languages.

Competences

- Critically analyse work carried out and demonstrate a desire to improve.
- Measure the technological infrastructure necessary to respond to the needs of cities, understanding the interactions between technological, social and operational aspects of cities.
- Prevent and solve problems, adapt to unforeseen situations and take decisions.
- Solve urban management problems using knowledge, methodology and procedures for the design and implementation of computer applications for different types of environment (web, mobile, cloud) and different paradigms.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.

Learning Outcomes

1. Critically analyse work carried out and demonstrate a desire to improve.
2. Design new algorithmic solutions based on the idea of ??recursion or specific algorithm-design techniques.
3. Develop computer applications in web environments in accordance with their structure, the interrelation of server components and those steps consistent with information management.
4. Prevent and solve problems, adapt to unforeseen situations and take decisions.

5. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
6. Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
7. Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.

Content

In this subject we will see the following:

1. Introduction to Internet and Web servers.
2. HTML language
3. CSS style sheets
4. Introduction to JavaScript: syntax, variables, types, operators.
5. Control structures: iterative and alternative scheme.
6. Functions: Declaration, parameters, predefined functions.
7. Object-oriented programming.
8. Browser Objects (DOM)
9. Forms and events
10. Introduction to jQuery.

Methodology

The teaching methodology of the subject focuses on autonomous learning. To achieve this goal, the subject will be structured in practical exercises and programming problems in the computer room. This approach requires active involvement of students. Teamwork and collaborative exchange will be encouraged. However, the final learning process must be individual, highlighted by the autonomous activity of each student, who will have to complement and enrich the work initiated in the course's directed sessions. The supervised activity, around regular tutorials and sporadic questions carried out during the course, is also an essential tool in the achievement of the competences provided by the subject.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Practical classes	24	0.96	1, 3, 2, 4, 7, 6, 5
Theory class	26	1.04	3, 2, 7, 6, 5
Type: Supervised			
Tutorials	10	0.4	1, 3, 2, 4, 7, 6, 5
Type: Autonomous			
Preparation of the project defense	10	0.4	1, 7, 6, 5
Problem based work	15	0.6	1, 3, 2, 4, 7, 6, 5
Reading and study	45	1.8	1, 3, 2, 4, 7, 6, 5

Assessment

a) Processes and scheduled evaluation activities

The calendar of assessment activities will be given on the first day of the subject and will be made public through of the Virtual Campus and the web of the School of Engineering, in the section of examinations.

The final quali of the subject will be obtained based on the valuations of the different evidences, taking into account that each one of the parts has a different specific weight:

- PART 1: 30% Exam1 and 30% Exam2
- PART 2: 40% Project

The grade of the subject will be calculated from the weighted sum of PART1 and PART2, as long as PART1 has a grade equal to or greater than 5. Exam1 and Exam2 must be passed separately.

b) Retake process

Retake process will only be made of PART1.

Keep in mind that PART 2 is non-recoverable. Therefore, a mark lower than 5 implies not being able to pass the subject.

c) Special grades

A student who performs at least one of the components of the continuous evaluation can no longer be considered as NOT Evaluable.

If a student does not reach the minimum grade of 5 in any of the two parts (PART1 and / or PART2) and for this reason does not pass the subject, the final grade will be a maximum of 4.5, that is, equal to the value of the weighted average if it is less than 4.5 or 4.5 if it is higher.

In order to pass the course with honors, the final grade must be equal or higher to 9 points. Because the number of students with this distinction can not exceed 5% of the number of students enrolled in the course, it is given to whoever has the highest final marks. In case of a tie, it will be taken into account the resolutions of the partial tests.

d) Procedure for the review of qualifications

For the assessment activity, a place, date and time of review will be indicated in which the student will be able to review the activity with the teacher.

e) Evaluation of repeating students

No note is saved from one course to the next. Repeating students follow the same assessment standards as any other student.

f) Consequences of irregularities committed by students

Notwithstanding other disciplinary measures deemed appropriate, and in accordance with the academic regulations in force, assessment activities will receive a 0 score whenever a student commits academic irregularities that may alter such assessment (copying, plagiarism, cheating, letting someone copy, etc.) The assessment activities qualified in this way and by this procedure will not be recoverable. If you need to pass any of these assessment activities to pass the subject, this subject will be failed directly, without opportunity to recover it in the same course.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam1	30%	2	0.08	1, 3, 2, 4, 7, 6, 5
Exam2	30%	2	0.08	1, 3, 2, 4, 7, 6, 5
Proyecto	40%	1	0.04	1, 3, 2, 4, 7, 6, 5

Bibliography

Start Programming Using HTML, CSS, and JavaScript, Fajfar, Iztok, Chapman and Hall/CRC. 2016

JavaScript : the definitive guide, Flanagan, David Sebastopol, O'Reilly, cop. 2011
6th ed.