

Internet Application Programming

Code: 106937
ECTS Credits: 6

2025/2026

Degree	Type	Year
Management of Smart and Sustainable Cities	OB	2

Contact

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Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

You must have taken "Informàtica" and "Programació" subjects in the first year.

Objectives and Contextualisation

In this subject we will learn to program web applications with JavaScript and using HTML for the program structure and CSS for the presentation.

The objectives of the subject are:

- Understand the differences between HTML, CSS and JavaScript and know how to make web pages that use these three technologies correctly.
- Understand the complexity of creating web applications, as well as the parts that make up any web development.
- Master the basics of application programming.
- Know how to interpret and decompose a computer problem to be able to program a solution.
- Know how to create small web applications that interact with the user through forms.

Learning Outcomes

1. CM05 (Competence) Relate computer knowledge and skills with those provided by other technicians in interdisciplinary teams.
2. KM09 (Knowledge) Understand the functioning and correct management of databases.
3. SM08 (Skill) Use algorithm and programme analysis techniques to design new algorithmic solutions based on the idea of recursion or specific algorithm design techniques.
4. SM09 (Skill)

Content

In this subject we will see the following:

1. Introduction to Internet and Web servers.
2. Introduction to JavaScript: syntax, variables, types, operators.
3. Control structures: iterative and alternative scheme.
4. Structured data types: arrays and objects.
5. Functions: Declaration, parameters, predefined functions.
6. HTML language
7. CSS style sheets, responsive web design.
8. Browser Objects (DOM)
9. Forms and events
10. Introduction to JavaScript libraries
11. Web hosting
12. Introduction to content managers

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Practical classes	24	0.96	CM05, KM09, SM08, CM05
Theory class	26	1.04	CM05, KM09, SM08, CM05
Type: Supervised			
Tutorials	10	0.4	CM05, KM09, SM08, CM05
Type: Autonomous			
Preparation of the project defense	10	0.4	CM05, KM09, SM08, CM05
Problem based work	45	1.8	CM05, KM09, SM08, CM05
Reading and study	20	0.8	CM05, KM09, SM08, CM05
Written reports	10	0.4	CM05, KM09, SM08, CM05

The most effective way to learn programming is through hands-on practice and completing numerous exercises. Consequently, this subject demands active engagement from students. Each week, students will participate in practical sessions that require advance preparation. While teamwork and collaborative exchange are encouraged, the ultimate learning process remains individual, emphasizing independent student activity. This individual effort complements and enriches the work initiated during guided course sessions. Supervised activities, including regulated tutorials and occasional consultations throughout the course, are also crucial for developing the necessary skills.

All relevant materials, such as statements, theory class slides, exercise lists, and other subject-related information, will be accessible via the Virtual Campus classroom. Additionally, this platform will serve as a hub for subject-related announcements.

Model 2 - Restricted Use of AI:

"For this course, the use of Artificial Intelligence (AI) technologies is permitted exclusively for support tasks, such as bibliographic or information search, text correction or translations, and in activities and practical work, but NOT in assessments.

The student must clearly identify which parts have been generated using this technology, specify the tools used, and include a critical reflection on how these have influenced the process and the final result of the activity.

Lack of transparency in the use of AI in this evaluable activity will be considered a breach of academic honesty and may lead to a partial or total penalty in the activity's grade, or more severe sanctions in serious cases."

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam1	25%	2	0.08	CM05
Exam2	25%	2	0.08	KM09, SM08, SM09
Problems	10%	0.5	0.02	CM05, KM09, SM08, SM09
Project	40%	0.5	0.02	CM05, KM09, SM08, SM09

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 grade 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: 25% Exam1, 25% Exam2 and 10% Problems
- PART 2: 40% Project

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

The Problems grade includes attendance and participation in problem classes and the delivery of the proposed exercises.

In order to pass PART 1, you must score at least a 4 on Exam 2. If this is not the case, the final grade for PART 1 will be the grade for Exam 2.

b) Retake process

There will be a re-evaluation test that will include all the topics covered in the course. This test will allow you to retake the two exams in PART 1.

There is no recovery from PART 2.

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. It will also be possible to request the revision of the exam by sending an e-mail to the person in charge of the subject sent within the first week after the publication of the notes.

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.

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Bibliography

JavaScript: Master the World's Most-Used Programming Language

[JavaScript: Master the World's Most-Used Programming Language - Universitat Autònoma de Barcelona \(uab.cat\)](https://www.uab.cat/estudis/estudis-superiors/estudis-superiors-en-lin%C3%A7%C3%A7/estudis-superiors-en-lin%C3%A7%C3%A7-de-lic%C3%A8ncies-empresarial/estudis-superiors-en-lin%C3%A7%C3%A7-de-lic%C3%A8ncies-empresarial-de-criptografia-i-sistemes-de-seguretat/JavaScript-Master-the-World-s-Most-Used-Programming-Language)

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.

Guía de JavaScript del Centro de Desarrollo Mozilla (MDN)

<https://developer.mozilla.org/es/docs/Web/JavaScript/Guide>

Referencia de JavaScript del Centro de Desarrollo Mozilla (MDN)

<https://developer.mozilla.org/es/docs/Web/JavaScript/Referencia>

Primeros pasos en la web (MDN) https://developer.mozilla.org/es/docs/Learn/Getting_started_with_the_web

Referencia de HTML (MDN) <https://developer.mozilla.org/es/docs/Web/HTML/Referencia>

Referencia de CSS (MDN) https://developer.mozilla.org/es/docs/Web/CSS/Referencia_CSS

Software

- Visual Studio Code o Cursor
- Github
- Browser

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	611	Catalan	first semester	afternoon
(PAUL) Classroom practices	612	Catalan	first semester	afternoon
(TE) Theory	61	Catalan	first semester	afternoon