# UAB
## Universitat Autònoma de Barcelona

## Mobile Applications Programming

Code: 104554
ECTS Credits: 6

**2024/2025**

| Degree | Type | Year |
|---|---|---|
| 2500001 Management of Smart and Sustainable Cities | OT | 3 |

## Contact

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## Teaching groups languages

You can view this information at the end of this document.

## Prerequisites

There are no prerequisites. However, for a good understanding of the subject, knowledge of programming fundamentals and databases is recommended.

## Objectives and Contextualisation

We will learn the fundamentals of mobile programming and the tools used for application development. A class project will be carried out where we will develop our own application from MVP (Minimum Viable Product) planning to functional prototype design. Additionally, we will work on practical projects to address specific needs, studying the impact and roles of applications in the use of new technologies such as databases or artificial intelligence.

- Fundamentals of professional tools in application development.
- Demonstrate ability to learn interfaces/tools in the cloud.
- Ability to identify and implement digital solutions in businesses.
- Develop and validate with proper software architecture.
- Demonstrate motivation for quality in objectives and work development.
- Propose, analyze, validate, and maintain IT solutions within a business organization context.
- Enable students to communicate information, ideas, problems, and solutions to both specialized and non-specialized audiences.
- Find algorithmic solutions and use appropriate programming tools to implement them within an organizational environment.

## Competences

- Conceive, design and manage the implementation of smart applications for geospatial information for urban and regional management.
- Critically analyse work carried out and demonstrate a desire to improve.
- Generate innovative and competitive proposals in professional activity.
- Prevent and solve problems, adapt to unforeseen situations and take decisions.

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- 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.
- Work cooperatively in complex and uncertain environments and with limited resources in a multidisciplinary context, assuming and respecting the role of the different members of the group.

## Learning Outcomes

1. Critically analyse work carried out and demonstrate a desire to improve.
2. Develop computer applications that process and extract information from geospatial data.
3. Develop mobile applications using mobile-phone resources and manage these through the most significant modules in development environments.
4. Generate innovative and competitive proposals in professional activity.
5. Prevent and solve problems, adapt to unforeseen situations and take decisions.
6. 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.
7. Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
8. Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
9. Work cooperatively in complex and uncertain environments and with limited resources in a multidisciplinary context, assuming and respecting the role of the different members of the group.

## Content

1. Programming fundamentals: HTML, CSS, and JavaScript

2. Work methodologies and design tools: GitHub and Figma

3. Use of software with frameworks: React (Meta) or Angular (Google)

4. Development of the prototype: technical and non-technical

5. Integration of data into the database for application functionality

6. Documentation and correct compilation of the final application

## Activities and Methodology

| Title | Hours | ECTS | Learning Outcomes |
|---|---|---|---|
| Type: Directed | | | |
| In-class: Developing mobile applications | 26 | 1.04 | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| Type: Autonomous | | | |

| Developing mobile applications | 104 | 4.16 | 1, 2, 3, 4, 5, 6, 7, 8, 9 |

The teaching methodology of the subject focuses on project-based learning. To achieve this goal, the subject will be structured in theory classes and supervised projects aimed at consolidating the contents of the subject. This approach requires a special involvement of students both in the development of face-to-face sessions and in the course's directed activites. 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 consultations carried out during the course, is also an indispensable tool in acquiring the knowledge that the subject provides.

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.

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## Assessment

## Continous Assessment Activities

| Title | Weighting | Hours | ECTS | Learning Outcomes |
| --- | --- | --- | --- | --- |
| Develop computer applications | 100 | 20 | 0.8 | 1, 2, 3, 4, 5, 6, 7, 8, 9 |

The final qualification 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:

25% (project1) + 25% (project2) + 25% (project3) + 25% (project4)

The grade of the subject will be calculated from this weighted sum.

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

There is no single assessment procedure.

Calendar of evaluation activities

The dates of the evaluation activities (midterm exams, exercises, assignments ...) will be announced well in advance during the semester.

The date of the final exam is scheduled in the assessment calendar of the Faculty.

*"The dates of evaluation activities cannot be modified, unless there is an exceptional and duly justified reason why an evaluation activity cannot be carried out. In this case, the degree coordinator will contact both the teaching staff and the affected student, and a new date will be scheduled within the same academic period to make up for the missed evaluation activity."* Section 1 of Article 115. Calendar of evaluation activities (Academic Regulations UAB). Students, who in accordance with the previous paragraph need to change an evaluation activity date must process the request by filling out an Application for exams' reschedule at

https://eformularis.uab.cat/group/deganat_feie/application-for-exams-reschedule Grade revision process

After all grading activities have ended students will be informed of the date and way in which the course grades will be published. Students will be also be informed of the procedure, place, date and time of grade revision following University regulations.

Retake Process

*"To be eligible to participate in the retake process, it is required for students to have been previously been evaluated for at least two thirds of the total evaluation activities of the subject."* Section 3 of Article 112 ter. The recovery (UAB Academic Regulations). Additionally, it is required that the student to have achieved an average grade of the subject between 3.5 and 4.9.

The date of the retake exam is posted in the calendar of evaluation activities of the Faculty. Students taking this exam and passing will get a grade of 5 for the subject. For the students that do not pass the retake, the grade will remain unchanged, and hence, will fail the course.

Irregularities in evaluation activities

Despite other disciplinary measures deemed appropriate, and in accordance with current academic regulations, *"whenever a student makes any irregularity that could lead to a significant variation in the grade of an evaluation activity, it will be graded with a 0, regardless of the disciplinary process that can be instructed. In case of occurrence of various irregularities in the evaluation of the same subject, the final grade of this subject will be 0".* **Section 10 of Article 116. Results of the evaluation. (UAB Academic Regulations).**

## Bibliography

[HTML Tutorial (w3schools.com) Copyright 1999-2024 by Refsnes Data](#)

[CSS Tutorial (w3schools.com) Copyright 1999-2024 by Refsnes Data](#)

[Developer tools by MDN contributors.](#)

https://react.dev/learn

## Software

S'utilitzaran els següents programes en les pràctiques de l'assignatura: Nodejs, VisualCode, GitHub, Figma, SQL

## Language list

| Name | Group | Language | Semester | Turn |
|------|-------|----------|----------|------|
| (PAUL) Classroom practices | 1 | Catalan | second semester | morning-mixed |
| (PLAB) Practical laboratories | 1 | Catalan | second semester | morning-mixed |
| (TE) Theory | 61 | Catalan/Spanish | second semester | afternoon |