

## Course guide

### 320166 - PDMA - Programming of Mobiles Android

**Last modified:** 02/04/2024

**Unit in charge:** Terrassa School of Industrial, Aerospace and Audiovisual Engineering  
**Teaching unit:** 723 - CS - Department of Computer Science.

**Degree:** BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN TEXTILE TECHNOLOGY AND DESIGN ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).

**Academic year:** 2024    **ECTS Credits:** 6.0    **Languages:** Catalan

#### LECTURER

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**Coordinating lecturer:** Marco Gomez, Jordi

**Others:** Fernandez Duran, Pablo

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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**Specific:**

1. AUD \_COMMON: Ability to use information and communication applications (office and databases, advanced calculation, project management, visualisation, etc.) to support the development and exploitation of networks, services and telecommunications and electronics applications.
2. AUD\_COMMON: Knowledge and application of the basic concepts underpinning the languages used to describe hardware.

**Transversal:**

3. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
4. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
5. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

#### TEACHING METHODOLOGY

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## LEARNING OBJECTIVES OF THE SUBJECT

The main goal of this course is:

- Introduce the students to Flutter App Development

To achieve this goal, a project will be carried out in group that will consist of programming an application to solve a medium-sized problem. In the development of the application the students will have to apply all the knowledge corresponding to the contents of the subject.

## STUDY LOAD

Type	Hours	Percentage
Hours small group	60,0	40.00
Self study	90,0	60.00

**Total learning time:** 150 h

## CONTENTS

### (ENG) TOPIC 1: Dart

#### Description:

- 1.1. Dart I: Types.
- 1.2. Dart II: Functions and Control Structures.
- 1.3. Dart III: Classes. JSON files.
- 1.4. Dart IV: Inheritance.
- 1.5. Use of simple widgets.

**Full-or-part-time:** 20h

Laboratory classes: 8h

Self study : 12h

### (ENG) TOPIC 2: Basic Flutter

#### Description:

- 2.1. First Flutter App.
- 2.2. Basic widgets: Text, Container, Row, Column.
- 2.3. StatelessWidget and StatefulWidget. Buttons.
- 2.4. Forms.

**Full-or-part-time:** 20h

Laboratory classes: 8h

Self study : 12h

### (ENG) TOPIC 3: Flutter Advanced

#### Description:

- 3.1. Routes (screens). Passing parameters.
- 3.2. Lists (ListView) and grids (GridView).
- 3.3. The model of an app.
- 3.4. Data communication with Provider.

**Full-or-part-time:** 20h

Laboratory classes: 8h

Self study : 12h



#### (ENG) TOPIC 4: Complete Apps

**Description:**

- 4.1. File Persistence.
- 4.2. Firebase: Auth, Storage and Cloud Firestore.
- 4.3. Cloud Firestore: collections and documents.
- 4.4. Todo List a Firestore.

**Full-or-part-time:** 24h

Laboratory classes: 10h

Self study : 14h

## ACTIVITIES

#### (ENG) Continuous Evaluation Group Project

**Description:**

Carrying out a project consisting of developing an application to solve a medium-sized problem that includes all the specific objectives of the course. Carryng out in group, both inside and outside the laboratory classroom. Correction by the teaching staff.

**Full-or-part-time:** 66h

Self study: 40h

Laboratory classes: 26h

## GRADING SYSTEM

## BIBLIOGRAPHY

**Basic:**

- Documentació Oficial de Dart [on line]. [Consultation: 12/04/2022]. Available on: <https://dart.dev/guides>.- Documentació Oficial de Flutter [on line]. [Consultation: 12/04/2022]. Available on: <https://flutter.dev/docs>.

## RESOURCES

**Audiovisual material:**

- Vídeos sobre Flutter <https://www.youtube.com/playlist?list=PL-DwF6obA18K9Vb7TP0dd-ISTET9JkMnF>. Vídeos sobre Flutter