# ACADEMIC PROGRAM

## MOBILE APPS DEVELOPMENT

## B.F.A. IN COMPUTER SCIENCE

*MODALITY: ON CAMPUS*

*ACADEMIC YEAR: 2022-2023*

| Name of the course: | Mobile Apps Development | 2 |
|---|---|---|
| Degree : | Computer Science | |
| Location: | Centro Universitario de Tecnología y Arte Digital | |
| Area: | Web Development | |
| Year: | 3º | |
| Teaching period: | 2 | |
| Type: | OB | |
| ECTS credits: | 3 | |
| Teaching modality: | On campus | |
| Language: | English | |
| Lecturer / Email | - | |
| Web page: | http://www.u-tad.com/ | |

## SUBJECT DESCRIPTION

### Area description

This subject provides the knowledge and skills necessary for a software engineer to develop a web project in its server and client components and its potential export as native or hybrid applications.

### Subject description

In this subject we will study the development of applications for smartphones. The subject will focus, specifically, on development for the Android operating system.

Aspects will be covered such as the creation and programming of the user interface, access to data using databases and the use of the different capabilities of a smartphone, such as the camera and GPS.

You will also learn to use the development environment that Google provides us. This IDE will facilitate the programming, interface design and debugging tasks of our applications.

## COMPETENCIES AND LEARNING OUTCOMES

### Competencies
BASIC AND GENERAL COMPETENCIES

CG1 - Ability to understand, schedule and solve problems trough software development

CG2 - To develop software that are environmental friendly, engaged with society and natural resources and law and ethics compliant

CG9 - Ability to learn, modify and develop new software solutions

CG10 - Use of creative techniques to carry out computer projects

BC1: Students should demonstrate knowledge in an area of study that builds upon the foundation of general secondary education and goest beyond at a level that, while supported by advanced textbooks, also encompasses certain aspects derived from the cutting edge of their field of study.

BC2: Students should be able to apply their knowledge to their work or vocation in a professional manner, and they should possess the competencies typically demonstrated through the development and defence of arguments as well as problem-solving within their field of study.

BC3: Students must possess the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that involve reflection on socially, scientifically, or ethically significant issues.

BC4: Students should be capable of conveying information, ideas, problems, and solutions to both specialized and non-specialized audiences.

BC5: Students should have developed the learning skills necessary to pursue further studies with a high degree of autonomy.

SPECIFIC COMPETENCIES

CE5 - Ability to design and deploy client-side and server-side web applications with scalable standard technologies

CE6 - Knowledge of the use of asynchronous clientserver communication mechanisms and packaging of these web applications for mobile platforms for the development of dynamic web applications

CE10 - Ability to work with a release manager and generate application documentation automatically

**Learning outcomes**
Upon completion of the degree, the graduate will be able to:

- To understand the full stack idea

- To be able to develop front end apps in the browser using Javascript and frameworks

- To understand the HTTP protocols family

- To know and apply web services

- To develops back end applications with NodeJs and Python

- To know the development environment of mobile Android apps

- To develop a simple mobile app with Java/Kotiln.

# CONTENTS
Responsive web design

Mobile apps packaging

## SUBJECT SYLLABUS

Topic 1. Kotlin basics

Topic 2. UI: Part II. Views

Topic 3. UI: Part II. Lists

Topic 4. Communication between activities

Topic 5. UI: Fragments

Topic 6. Databases, HTTP connections

Topic 7. Dart.

Topic 8. Flutter: components

Topic 9. States and communications

Topic 10. Routes and lists

## TRAINING ACTIVITIES AND TEACHING METHODOLOGIES

### TRAINING ACTIVITIES

| LEARNING ACTIVITIES | Total hours | Hours of presence |
|---|---|---|
| *Theoretical / Expository classes* | 11,00 | 11,00 |
| *Practical classes* | 15,80 | 15,80 |
| *Tutorials* | 2,00 | 1,00 |
| *Independent study and autonomous work of the student* | 24,00 | 0,00 |
| *Elaboration of work (group or individual)* | 18,80 | 0,00 |
| *Evaluation Activities* | 3,40 | 3,40 |
| *TOTAL* | 75 | 31,2 |

### Teaching methodologies

Expository method or master lesson

Case learning

Learning based on problem solving

Cooperative or collaborative learning

inquiry learning

Flipped classroom methodology

Gamification

Just in time Teaching (JITT) or classroom on time

Expository method or master lesson

Case method

Learning based on problem solving

Cooperative or collaborative learning

inquiry learning

Flipped classroom methodology

Gamification

## TEMPORAL DEVELOPMENT

DIDACTIC UNITS / TOPICS TIME PERIOD

Topic 1 Week 1

Topic 2 Week 2

Topic 3 Week 3

Topic 3 Week 4

Topic 4 Week 5

Topic 5 Week 6

Topic 6 Week 7

Topic 6 Week 8

Topic 7 Week 9

Topic 8 Week 10

Topic 9 Week 11

Topic 9 Week 12

Topic 10 Week 13

Topic 10 Week 14

## EVALUATION SYSTEM

| ASSESSMENT SYSTEM | MINIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%) | MAXIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%) |
|---|---|---|
| *Assessment of participation in class, exercises or projects of the course* | 10 | 30 |
| *Assessment of assignments, projects, reports, memos* | 30 | 60 |
| *Objective test* | 30 | 60 |

## GRADING CRITERIA

| ASSESSMENT SYSTEM | ORDINARY EVALUATION | EXTRAORDINARY EVALUATION |
|---|---|---|
| *Assessment of participation in class, exercises or projects of the course* | 20 | 20 |
| *Assessment of assignments, projects, reports, memos* | 40 | 40 |
| *Objective test* | 40 | 40 |

**General comments on the evaluations/assessments**

• The final project presentation will be made on the date scheduled for the exam and will consist of presenting the work developed in 10 minutes, as well as a multiple choice test which will consist of 20 simple selection questions.

• The final practice must be delivered on Blackboard and, together with the presentation, will account for 40% of the final grade.

• The multiple choice test will be carried out through Blackboard and will account for 40% of the final grade.

• The remaining 20% of the grade will be evaluated based on the attitude shown by the student during the course.

• In the extraordinary call, all the work done during the course must be submitted, the presentation must be made, and a new multiple choice test must be carried out.

## LIST OF REFERENCES (BOOKS, PUBLICATIONS, WEBSITES):

Basic Bibliography:

https://developer.android.com/

# REQUIRED MATERIALS, SOFTWARE AND TOOLS

**Type of classroom**
Theory classroom

Board and projection system

**Materials:**
Personal Computer

**Software:**
Android Studio

Plugin Flutter/Dart