

Course Unit	Mobile Systems		Field of study	Computer Science	
Master in	Informatics		School	School of Technology and Management	
Academic Year	2023/2024	Year of study	1	Level	2-1
Type	Semestral	Semester	2	ECTS credits	6.0
Code	5060-710-1204-00-23				
Workload (hours)	162	Contact hours	T -	TP 60	PL -
			TC -	S -	E -
			OT -	O -	

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Leandro Ismael Pereira Alexandre, Paulo Alexandre Vara Alves

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Know the process of interface development
2. Develop applications for mobile devices
3. Development of mobile applications based on REST API backend

Prerequisites

Before the course unit the learner is expected to be able to:
Develop software applications

Course contents

Project development methodologies. Design of mobile interfaces. Android development. SQLite data bases. Backend REST API.

Course contents (extended version)

1. Software project development methodologies
 - Project based learning
 - Collaborative software development
 - Agile software development
 - Requirements engineering
 - Software Modelation using UML
2. Mobile interfaces design
 - Design patterns
 - Wire frames and Mockups
 - Storyboards and prototypes
 - Interface design using an UI colaborative tool
3. Mobile Applications
 - Evolution of Mobile Applications
 - Development technologies
 - Frameworks and Toolkits
 - Interfaces development
 - Access to databases and communication with the interface
 - Development of native applications for Android
 - SQLite databases
4. Mobile applications development with REST API
 - Backend REST API access
 - Authentication
 - Databind
 - Sensors
 - Publish to App store

Recommended reading

1. Reto Meier, Professional Android, Wrox, 4th Edition, ISBN: 1118949528, 2016
2. Neil Smyth, Android Studio 3. 3 Development Essentials - Android 9 Edition: Developing Android 9 Apps Using Android Studio 3. 3, Java and Android Jetpack, 2019

Teaching and learning methods

Presentation and discussion of the main curricular contents using the pedagogical methodology based on projects. In this type of methodology of teaching and learning, the learning process is based on the development of prototypes during the semester, culminating in a final project that encompasses all the concepts studied.

Assessment methods

- Unique alternative - (Regular, Student Worker) (Final, Supplementary, Special)
- Practical Work - 30% (Practical work carried out during classes)
- Projects - 70% (Project)

Language of instruction

English

Electronic validation

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11-03-2024	14-03-2024	15-03-2024	16-03-2024