POLITÉCNICO DE SANTARÉM

Programming for Mobile Devices

Code: ERAGT069 Acronym: PFMD
Scientific Area: Information Technologies

Occurrence: 2024/25 - 2S

Teaching Area: *Informática*

Courses

Acronym	Nº de Estudantes	Plano de Estudos	Academic Year	Credits	Horas Contacto	Total Hours
ERSGT	3	Curso Erasmus	1º	6		

Hours Actually Taught

ERA-1-D

Theoretical and Practical: 72,00

Teaching - Weekly Hours

Theoretical and Practical: 0,00

Type	Teacher	Classes	Hours
Theoretical and Practical	Totals	1	0,00
	Mário Alexandre Martins Duarte - ESGT		0,00

Teaching - Responsabilities

Teacher	Responsabilidade
Mário Alexandre Martins Duarte - ESGT	Responsável

Learning outcomes and their compatibility with the teaching method (knowledge, skills and competencies to be developed by students)

Once approval in the subject is obtained, the student should be able to:

Characterize the main platforms and tools for the development, publishing, and distribution of mobile apps;
Install and use a development environment suitable for a platform;
Explore the fundamentals of the chosen platform, regarding architecture, user interface, overall user experience, data access, and publishing on market(s);
Develop integrated solutions using the studied technologies.

Syllabus

A. Ecosystems and Platforms for Mobile Apps

Perspectives (provider, developer, and user)

B. Choosing an "ecosystem"/"platform"

Introduction to the platform
Development environments
Installing a development environment

C. Fundamental Aspects of Apps on the Platform

Architecture
Manifest(s)
Resources
Programming

D. Interface Aspects

Layout components
Layouts
Organization and communication between activities

E. Guidelines

User interfaces
User interaction

F. Functional Aspects

User preferences
Data, files, folders, data persistence
Permissions
Design, considering best practices for performance and security

G. Introduction to Development, Based on Established Patterns

Models
Views
Controllers
Specificities of the development process on the platform

Demonstration of the syllabus coherence with the curricular unit¿s learning objectives

The topics allow the student to follow a path that starts by listing the most established platforms for mobile apps, taking into account the perspectives of the provider, user, and developer.

Once a platform is chosen, an integrated environment for mobile app development is also selected, including support for accelerated device emulation.

Before and during the development of practical solutions, architectural, design, interface, and user interaction aspects, as well as the functionality of the apps and their publication in specific regulated markets, are discussed.

The practical development will enable the student to gain the skills necessary to create solutions on the chosen platform, using the selected technologies.

Teaching and learning methodologies specific to the curricular unit articulated with the pedagogical model

Methodology:

Presentation of fundamental concepts.
Discovery-based learning (observing digital content, researching concepts, etc.).
Analysis of examples and case studies.
Practical development of solutions.

Assessment

Assessment Instruments:

T1, T2: individual tests;
P1: project.

Final grade = 30% * T1 + 30% * T2 + 40% * P1

Approval conditions: T1 >= 8.0, T2 >= 8.0, P1 >= 10.0, and attendance >= 75%.

Exams. Do not include an oral exam.
Grades above 16: The assignment of a grade above 16 may be subject to defense in an oral exam. The student may waive this defense, in which case a grade of 16 will be awarded.

Demonstration of the coherence of teaching and evaluation methodologies between the learning objectives of the curricular unit

The presentation moments introduce and frame the structural concepts. The presentations, examples, and case studies introduce, illustrate, and concretize the concepts, promoting gradual consolidation of learning and encouraging active participation from the students.

The practical development exposes students to real cases, requiring creative and robust solutions, and should translate into the ability to create mobile apps.

Bibliography (Mandatory resources)

Android Developers - Training. (2021). from https://developer.android.com/training/index.html

Bill Phillips, C. S., Brian Hardy. (2017). Android Programming: The Big Nerd Ranch Guide (3rd edition (30 January 2017) ed.): Big Nerd Ranch Guides.

Joseph Annuzzi Jr., L. D., Shane Conder. (2015). Introduction to Android Application Development: Addison Wesley.

Murphy, M. (2021). The Busy Coder's Guide to Android Development: https://commonsware.com/Android/.

Nanda, S., at al, Demystifying UI/UX, A client's guide on understanding User Interfaces and User Experience, Presear Softwares PVT LTD (2022).