POLI
ESCOLA SUPERIOR
TECNOLOGIA
GESTÃO
TÉCNICO GUARDA

SUBJECT DESCRIPTION

MODELO

PED.013.03

Course	Computer Science						
Subject	**Advanced Programming**						
Academic year	2023/2024	*Curricular year*	2nd	*Study period*	2nd semester		
Type of subject	Compulsory	*Student workload (H)*	Total: 140	Contact: 60	*ECTS*	5	
Professor(s)	Prof. Noel Lopes, PhD						

☒ *Area/Group Coordinator* ☐ *Head of Department*	*(select)*	Prof. José Fonseca, PhD

PLANNED SUBJECT DESCRIPTION

1. LEARNING OBJECTIVES

- *Develop mobile device applications.*
- *Create effective and appropriate interfaces for mobile devices.*
- *Using mobile devices to store data permanently.*

2. PROGRAMME

1. *Introduction to Kotlin programming*
2. *Introduction to mobile device programming*
3. *The Android platform*
4. *Activities and Intents*
5. *Designing specific interfaces for mobile devices (compose framework)*
6. *Internationalization*
7. *Store data in a Database (SQLite)*
8. *Content Providers*
9. *Android automation testing*
10. *Version control systems*

3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

The first topic introduces the Kotlin language, which is currently the language of choice for developing Android applications (for Mobile devices). Topics 2 and 3 explain the main differences (including the advantages and disadvantages) between traditional and mobile device applications, identifying the opportunities of the latter with emphasis on the Android platform. Topics 4 and 5 demonstrate how to build applications in Android using effective and appropriate interfaces. Topic 6 deals explains how to internationalize Android apps. Topics 7 and 8, demonstrate how to store permanently data in the devices, allowing for the creation of more general mobile device applications. Topic 9 covers the use of automatic tests for Android applications. Finally, topic 10 focus the use of modern version control.

4. MAIN BIBLIOGRAPHY

Noel Lopes, Lecture notes

Barry Burd, "Android Application Development All-In-One for Dummies", ISBN: 978-1118027707, 2011

5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

Lecture, interactive lesson, Project

Continuous evaluation

The evaluation consists of individual works (30%) and a test (70%).

Evaluation by exam

The evaluation will be based on a test (100%). However, students who have regularly presented their work during classes can opt for the continuous evaluation assessment method.

6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

Topics 2 and 3 feature theoretical introductory aspects related with the development of mobile device applications. Hence, the teacher will use lectures to minister these topics. On the other hand, the remainder topics have a practical nature, focusing the development of interactive mobile device applications. Hence, the teacher will in most cases use interactive lessons to demonstrate the underlying concepts. Naturally, these will be complemented with lectures where appropriated, especially to convey theoretical concepts. Students will development of a project (to reinforce learning).

7. ATTENDANCE

N/A.

8. CONTACTS AND OFFICE HOURS

Noel Lopes (noel@ipg.pt), office 27, Office hours: Monday 10:00 – 12:00; Friday 8:30 – 11:30

DATE

19 de fevereiro de 2024

SIGNATURES

Professor

(signature)

Area/Group Coordinator

(signature)