Course Unit	Programming Languages IV			Field of study	Computer Science		
Bachelor in	Informatics and Communications			School	School of Public Management, Communication and Tourism		
Academic Year	2021/2022	Year of study	2	Level	1-2	ECTS credits	6.0
Type	Semestral	Semester	2	Code	9188-320-2203-00-21		

Workload (hours)	162	Contact hours	T	-	TP	30	PL	30	TC	-	S	-	E	-	OT	20	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)	Carlos Filipe Campos Rompante da Cunha

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Develop skills in developing applications for mobile environments;
2. Discuss the relevance of the development of mobile extensions of information systems;
3. Identify the requirements and properties of mobile aplications;
4. Development of appropriate interfaces for mobile devices where the applications developed will be used;
5. Integrate mobile applications into existing information systems.
6. Understand and evaluate the capabilities of a mobile device;
7. Develop test and debug mobile applications;
8. Developing applications for mobile devices of interest to the business or the masses.

Prerequisites

Before the course unit the learner is expected to be able to:
Solid knowledge of object-oriented programming.

Course contents

The curriculum unit addresses all major aspects of developing applications for mobile devices. focusing on the development of Android software, using JAVA. Are analyzed every aspect of the implementation of mobile solutions. It is also discussed the development of solutions that rely on communication protocols, such as Bluetooth or Web Services.

Course contents (extended version)

1. Introduction to the concept of mobile application, analysis and understanding of mobile devices;
2. Development of interfaces.
3. Environment for development (Android Studio);
4. Creation of a development project;
5. Development of applications for Android.
   - Understanding Activities, Intents and Fragments; concepts;
   - Interfaces development;
   - Data persistence and networking (SOAP, REST).
   - Sensory data treatment

Recommended reading

1. SHESI, J. (2012). Android Application Development for Java Programmers. (1ª Edição). Editora Cengage Learning PTR. ISBN: 978-1133593546
2. QUEIRÓS, R. (2016). Android - Desenvolvimento de Aplicações Com Android Studio. Editora FCA. ISBN: 978-972-722-819-5
3. QUEIRÓS, R. (2014). Desenvolvimento De Aplicações Profissionais Em Android. Editora FCA. ISBN: 978-972-722-796-9

Teaching and learning methods

Theoretical-practical classes where they raise questions and to discuss and present solutions, and lessons organized into work, during class and during the space of study together, which aims to consolidate the theoretical concepts discussed.

Assessment methods

1. Continued Evaluation - (Regular, Student Worker) (Final)
   - Final Written Exam - 50%
   - Practical Work - 50%
2. Resource and Special Evaluations - (Regular, Student Worker) (Supplementary, Special)
   - Final Written Exam - 50%
   - Practical Work - 50%

Language of instruction

Portuguese, with additional English support for foreign students.

Electronic validation

Carlos Filipe Campos Rompante da Cunha	Vítor José Domingues Mendonça	Elisabete da Anunciacao Paulo Morais	Luisa Margarida Barata Lopes
30-03-2022	30-03-2022	06-04-2022	08-04-2022

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