CLOUD COMPUTING SYSTEMS

Master in Engenharia Informática

Code: 28500

Main Scientific Area: Computer Architecture, Distributed Systems and Cybersecurity

Lecturer: Miguel José Magalhães Lopes

Language of Instruction: Portuguese

Regime: S1

Contact Hours: 30h Total Workload: 138h

ECTS: 6,0

Objectives

Students should acquire the following knowledge:

concept of cloud computing;
main platforms available to develop applications in the cloud.

development of a cloud base application

Learning Outcomes

Students should have the following competencies:

installation and configuration of an IAAS and PAAS solution;
define an application architecture to be applied in a cloud computing environment;
development of applications for cloud platforms using Hadoop and Spark.

Course Contents

Cloud Computing Concept of Architecture and Types of Service: IaaS PaaS SaaS
Virtualization Solutions
Storage and distributed processing solutions for large-scale: nosql databases,
Container and container orchestration

Recommended Bibliography

Cloud Computing: Concepts, Technology Architecture, Thomas Erl, Ricardo Puttini, Zaigham Mahmood, Prentice-Hall, 2013
Principles of Concurrent and Distributed Programming: Algorithms and Models, M. Ben-Ari, Prentice-Hall, 2006.

Learning and Teaching Methods

The development of applications capable of taking advantage of existing processors with multiple cores requires knowledge of concurrent programming techniques, which is the main topic addressed in this course. In addition,

communication between distributed applications requires other techniques that in turn are also part of the program, specifically in distributed programming.

Assessment Methods

The students final grade will be calculated using two methods:

Theoretical written tests (with a weight of 25% of the final grade), without consultations, to be done at the 7th of December;
Practical work(with a weight of 75% of the final grade), in groups of students, to be done at the the 30th of November;Practical work can be submitted during examinations but has a penalty of 3 (out of 20).
To be approved, the student must obtain a grade of at least 7 (out of 20) in the written test.