

## **DATABASE PROGRAMMING**

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Code: 12412

Main Scientific Area: Computer Science

Lecturer: Joaquim José de Almeida Soares Gonçalves

Language of Instruction: Portuguese

Regime: S2

Contact Hours: 60h Total Workload: 100h

ECTS: 6,0

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### **Objectives**

Present some logical mechanisms and objects of SQL and show the PL / SQL or PLPG language and the set of analytic functions that it has.

Show query optimization techniques and rules for transactions and control of competition.

Oracle's Data Mining models and show strategies.

Refer NoSql databases and BigData examples

### **Learning Outcomes**

Programming in a PL / SQL database language.

Use of procedures, functions and other language components.

### **Course Contents**

1. Logical objects

Dual Table Clusters Indexes Triggers Procedures Functions Packages

2. Introduction to PL / SQL

Operators Syntax

3. Analytical functions PL / SQL

4. Storage, Processing, and Query's Optimization

5. Transactions and Concurrency Control

6. Other Database Concepts

BigData and NoSql databases Distributed database

### **Recommended Bibliography**

Database Concepts (7th Edition), David M. Kroenke, David J. Auer, Pearson Education Limited, 2015.

Oracle PL/SQL Programming: Covers Versions Through Oracle Database 12c (6th Edition), Steven Feuerstein with Bill

PribylO' Reilly, 2014.

### **Learning and Teaching Methods**

The syllabus were defined in order to learn the PL / SQL language in an optimized use of database resources involving concurrency and distribution issues.

### **Assessment Methods**

A written test and the presentation of a work with equivalent weight in the final classification.

The work has a minimum classification of 10 values.