Description of Course Unit

Master in Electrical and Computers Engineering
Information Systems and Databases
Instance: 2011/2012
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[Institutional page]

General Information

Course Unit: Information Systems and Databases
Code: EEC0044
Programmes: MIEEC, 4º, 31 students
Academic Year: 2011/2012
Semester: 1S **ECTS**: 6
Hours/Weeks: 2T, 2x2P
Teachers: João Correia Lopes

Teaching Language

Portuguese

Objectives, Skills and Learning Outcomes

Goals

This course aims to endow students with skills to design and develop Web-accessible Information Systems supported by Databases.

Learning Outcomes

Students, who successfully complete this course, should be able to:

1. Identify the requirements of an information system;
2. Design an entity relationship diagram of a database;
3. Convert an entity relationship diagram into the relational model;
4. Use relational algebra to formulate questions to a relational database;
5. Create and explore a database using the DBMS PostgreSQL;
6. Formulate SQL queries;
7. Design an user interface using XHTML;
8. Use PHP, a scripting language, and PHP libraries to develop an user interface;
9. Define presentation styles using CSS.

Program

- Extended Entity Relationship Model
- Relational Model
- Relational Algebra
- SQL
- PostgreSQL
- Advanced topics: triggers, indexes and transactions;
- Web Information Systems
- Client-side languages: HTML, CSS
- Server-side languages. PHP

Main Bibliography

- Raghu Ramakrishnan, J. Gehrke, Database Management Systems, McGRAW-Hill International Editions, 3rd Edition, 2002, ISBN=0-07-246563-8. Biblioteca

Complementary Bibliography

- Jeffrey D. Ullman, Jennifer Widom, A First Course in Database Systems, Prentice-Hall, 2nd Edition, 2001, ISBN=0-13-035300-0. Biblioteca
- Abraham Silberschatz, Henry Korth, S. Sudarshan, Database System Concepts, McGRAW-Hill Higher Education, 6th Edition, 2010, ISBN=0-07-352332-1. Biblioteca

Teaching Procedures

In theoretical classes the topics of the course will be presented and discussed.

In practical classes there will be assignments about the Entity-Relationship and Relational models and a project using PHP and PostgreSQL will be developed.

Software

- PostgreSQL, PHP

Keywords

Physical sciences > Computer science > Informatics

Evaluation Type

Distributed evaluation with final exam

Registered evaluation and occupation components

Description	Type	Time (Hours)	Date of conclusion
Attendance (estimated)	Lectures	56	
Requirements report	Project Work	25	2011-11-04
Architecture report	Project Work	25	2011-11-18
Product and presentation	Project Work	35	2011-12-16
Examn	Test/Examination	21	
	Total:	162	

Admission to Exams

Distributed evaluation will be based on:

- A laboratory group assignment (2 students)

The Final Exam will contain questions about:

- Entity-relationship modelling
- Conversion into the Relation model
- Relational algebra
- SQL
- Advanced database topics

Minimum required to pass this course: 40% in each practical assignment and in the final exam.

Final grade

The final grade is the result of:

- Requirements report (2,5 points)
- Architecture report (2,5 points)
- Information System Implementation (5 points)
- Final exam (10 points)

Special Assignments

There are no special works or tests.

Improvement of Final/Distributed Classification

Students can improve their distributed evaluation grade in the course's next edition.

Special evaluation (TE, DA, ...)

All students have the same evaluation.

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