

Centre	University College of Engineering of Vitoria-Gasteiz
Name of subject	26020 - Databases
Qualification	Degree in Computer Management and Information Systems Engineering
Type	Compulsory
Credits	6 ECTS
Year	2
Term(s)	2nd
Department	Computer Languages and Systems
Language	Spanish

Outcomes / Objectives

The subject Databases (DB) is the first subject to be taught in the degree programme within the study line of the same name. The following basic concepts are encompassed in the subject DB: basic terminology associated with DB; global architecture and specific modules of a Database Management System (DBMS); relational model taking into account its principles, the SQL language to generate definitions, queries and updates and embedded SQL programming; the notion of transaction and its desirable properties (ACID principle); basic aspects of concurrency control.

Syllabus

Introduction to the concept of Databases. Database (DB) related terminology: DB, DBMS, DBS, catalogue, actors, data models, etc. Describes the advantages of using DBS over files.

-Introduction: Architecture of a Database System. Presents the 3-level architecture and modules of a DB Management System.

-Relational Model

-SQL language: Presents the syntax of the Database Definition, Query and Manipulation Language (SQL).

-DB access through applications

-Transactions. Definition and usage. Concurrency control in database access. Presents the notion of transaction and the properties imposed by the ACID principle. Explains the basic concepts of concurrency control in database systems: reservation protocol, transaction isolation levels.

Methodology

Teaching Method

Face-to-Face Teaching Hours

Lectures	Seminars	Classroom practice	Lab. practice	Computer sessions	Clinical practice	Workshops	Industrial workshops	Field practice
40			20					

Student Hours of Non Face-To-Face Activities

Lectures	Seminars	Classroom practice	Lab. practice	Computer sessions	Clinical practice	Workshops	Industrial workshops	Field practice
50			40					

Assessment System

General criteria

Written essay exam

Written multiple-choice test

Practical activities (exercises, case studies or problems)

Individual assignments

Clarification regarding assessment

Students have two ways of passing this subject: final or overall assessment, where 100% of the grade will be obtained either in a final exam or through continuous assessment.

Continuous assessment, which students can opt for, is only offered to students for whom a continuous follow-up of the subject can be performed within the established framework of dedication and attendance to face-to-face activities.

Pre-registration for continuous assessment will be done on the scheduled dates and following the lecturer's evaluation of partial performance.

The following will be taken into consideration in the continuous assessment option:

- Tests associated with continuous follow-up (partial exams).
- Assessment of written assignments (collected by the lecturer from time to time on non-specified dates).
- Assessment of laboratory practice.

Bibliography

Basic Bibliography

Fundamentos de Sistemas de Bases de Datos. R.A. Elmasri y S. B. Navathe. Addison-Wesley Iberoamericana, 2007.

In-depth Bibliography

Fundamentos de Bases de Datos. H. Korth, A. Silberschatz y S. Sudarshan. Mc.Graw-Hill, 2002.

Sistemas de Bases de Datos. Un enfoque práctico para Diseño, Implementación y Gestión. T. Connolly y C. Begg. Addison Wesley, 2005.

Introducción a los Sistemas de Bases de Datos. C.J. Date. Prentice-Hall, 2001.

Guía Lan Times de SQL. J. Groff y P. Weinberg. Osborne McGraw-Hill, 1998.

Introducción a los Sistemas de Bases de Datos. J. Ullman eta J. Widom. 1999, Prentice Hall

Data Base Principles Programming Performance. P. O'Neil. 1994, Morgan Kaufmann.

SQL y Java: guía para SQLJ, JDBC y tecnologías relacionadas. J. Melton eta A. Eisenberg. 2002, Ra-Ma.

Java programming with Oracle SQLJ. J. Price. 2001, O'Reilly.

Websites

- MySQL web: <http://www.mysql.org>
- Supplementary SQLJ documentation: <http://www.redbooks.ibm.com/redbooks/pdfs/sg246435.pdf>
- MySQL guide: <http://dev.mysql.com/doc/refman/5.0/es/index.html>
- Supplementary documentation on transactions:
<http://ftp.ku.ac.th/pub/mirror/mysql/books/mysqlpress/mysql-tutorial/ch10.html>