



DATABASE DESIGN

34014 - DATABASE DESIGN (2024-25)

General

Code: 34014

Lecturer responsible:

LLORET PASTOR, ELENA

Credits ECTS:

6,00

Theoretical credits:

1,20

Practical credits:

1,20

Distance-base hours:

3,60

Departments involved

- **Dept:** LANGUAGES AND COMPUTING SYSTEMS

Area: LANGUAGES AND COMPUTING SYSTEMS

Theoretical credits: 1,2

Practical credits: 1,2

This Dept. is responsible for the course.

This Dept. is responsible for the final mark record.

Study programmes where this course is taught

- [DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION](#)
Course type: COMPULSORY (Year: 2)
- [DEGREE IN COMPUTER ENGINEERING](#)
Course type: COMPULSORY (Year: 2)

Competencies and objectives

Course context for academic year 2024-25

Database design subject gives a more detailed insight into concepts previously presented in Fundamentals of database subject and, also, considering every stage in the database design process. Performing this process in the right manner is crucial for ensuring that the resulting database effective and efficiently agrees with the user requirements and expectations. This course is the foundation of other subjects related to the design and management of systems that deal with huge amount of data and how they are integrated in the business process.

Course content (verified by ANECA in official undergraduate and Master's degrees) for academic year {0}

Specific Competences (CE)

- **CE12** : Coneixement i aplicació de les característiques, funcionalitats i estructura de les bases de dades, que permeten el seu adequat ús, i el disseny i l'anàlisi i implementació d'aplicacions basades en ells.
- **CE13** : Coneixement i aplicació de les eines necessàries per a l'emmagatzematge, processament i accés als sistemes d'informació, incloent-hi els basats en web.

Exclusive skill taught in this course

No data

Learning outcomes (Training objectives)

No data

Specific objectives stated by the academic staff for academic year 2024-25

Specific competences (CE)

CE12: Understand and apply the characteristics, functionalities and structure of databases to allow their correct use and design, analyze and implement applications based on the same

CE13: Understand and apply the tools needed for the storage, processing and access to Information Systems, including web-based systems

Learning goals

-Acquire basic knowledge and techniques to be able to learn and develop new methods and technologies, as well as skills to face up with novel situations

-Ability for solving problems with own initiative, informed decision making, autonomy and creativity

-Communicate knowledge, capabilities and skills related to Computer Engineer profession

Subject objectives/competences

-Design a database: conceptual design by using the EER model, logical design by using the Relational model, and Physical design by using the Oracle DBMS.

-Know issues related to management and security of databases

Content and bibliography

Content for academic year 2024-25

Database design subject gives a more detailed insight into concepts previously presented in Fundamentals of database subject and, also, considering every stage in the database design process. Performing this process in the right manner is crucial for ensuring that the resulting database effectively and efficiently agrees with the user requirements and expectations. This course is the foundation of other subjects related to the design and management of systems that deal with huge amount of data and how they are integrated in the business process.

Theoretical and practical contents:

1. Overview on using a method for database design.
2. Database design method: conceptual design, logical design, and physical design.
3. Data models for conceptual and logical design.
4. Comparison on different data models.
5. Moving into a specific DBMS: defining business rules and designing the physical representation.
6. Physical design.
7. Secure database design.
8. Introduction to NoSQL
9. SQL statements to create, query, and manage a database

Related links

http://en.wikipedia.org/wiki/Entity-relationship_model

Modelo Entidad-Relación

https://docs.oracle.com/cd/E11882_01/server.112/e41084.pdf

SQL

http://es.wikipedia.org/wiki/Modelo_relacional

Modelo Relacional

Sistemas de bases de datos : un enfoque práctico para diseño, implementación y gestión

Author(s): Connolly, Thomas M.; Begg, Carolyn E.

Issue: Madrid : Addison Wesley, 2005;

ISBN: 84-7829-075-3

Category: Sin especificar

Introducción a los sistemas de bases de datos

Author(s): Date, C. J.

Issue: México : Pearson Educación, 2001;

ISBN: 968-444-419-2

Category: Sin especificar

Fundamentos de sistemas de bases de datos

Author(s): Elmasri, Ramez ; Navathe, Shamkant B.

Issue: Madrid : Pearson Addison-Wesley, 2007;

ISBN: 978-84-7829-085-7

Category: Sin especificar

Diseño y administración de bases de datos

Author(s): Hansen, Gary W. ; Hansen, James V.

Issue: Madrid : Prentice Hall, 1997;

ISBN: 84-8322-002-4

Category: Sin especificar

Database systems : a practical approach to design, implementation, and management

Author(s): Connolly, Thomas M. ; Begg Carolyn E.

Issue: London : Addison-Wesley, 2010;

ISBN: 978-0-321-52306-8

Category: Básico

An introduction to database systems

Author(s): Date, C.J.

Issue: Boston : Addison Wesley, 2004;

ISBN: 0-321-18956-6

Category: Básico

Assessment

Assessment procedures and criteria 2024-25

ORDINARY CALL:

The evaluation of this subject comprises the following tests:

Practice exam 1 (15%): exam in which exercises will be proposed to assess the subject that has been explained in the practice sessions.

Intermediate theory exam (15%): exam where the theoretical contents seen up to the moment of this exam are evaluated.

Practice exam 2 (35%): exam in which students must solve exercises related to the subject explained in the practice sessions.

Final theory exam (35%): it is the final exam of the course, aimed at evaluating the theoretical content of the subject. It will consist of both solving design problems and exercises and short questions about the theoretical part.

Each exam is graded from 0 to 10, and the final grade for the course (also graded from 0 to 10) is obtained as follows:

Final grade DBD = $0.15 * (\text{Note of the practice exam 1}) + 0.15 * (\text{Note of the intermediate theory exam}) + 0.35 * (\text{Note of the practice exam 2}) + 0.35 * (\text{Note of the final theory exam})$

It is necessary to obtain at least a 5 as a global grade to pass the course, provided that the following requirements are met:

1. Get at least a 4 out of 10 in the final theory exam.
2. Obtain at least a 4 out of 10 in the global practice mark obtained by adding, with its corresponding weight, the marks of the practice test 1 & 2.

In case of the requirements are not met, the grade for the course will be failed, with a maximum grade of 4.5 points.

EXTRAORDINARY CALLS:

For the extraordinary calls, two exams will be carried out on the official exam date scheduled for these calls:

Theoretical exam (50%). In this exam, several questions and exercises will be proposed in which all the theoretical content of the course will be assessed.

Practice exam (50%). In this exam, several exercises will be proposed in which all the lab content of the course will be assessed.

Each exam will be scored from 0 to 10. At least a grade of 5 is necessary to be obtained as a global grade to pass the course, provided that at least a grade of 4 is independently obtained in each of the exams. The attendance and answer of one of these exams implies that the obtained grade will replace the grade obtained in the ordinary call, even if this grade is lower than the one obtained in the ordinary call.

For all calls and exams, the detection of copy or plagiarism, or any attempt of it, will suppose the qualification of "0" in the corresponding exam. In addition, the Director of the Department, as well as the Director of Center will be informed about this issue so that appropriate measures can be applied. The repetition of this behavior will lead to the notification to the corresponding vice-rectorate of the mistakes made so that they study the case and sanction according to the legislation (Regulation of academic discipline of the Official Centers of Higher Education and Technical Education under the Ministry of National Education BOE 12/10/1954).

Description	Criteria	Type	Weighting system
Practice exam 1	This is an exam, in which exercises will be proposed to assess the subject that has been explained in the practice sessions. Recoverable activity.	ACTIVITIES OF EVALUATION DURING THE SEMESTER	15
Practice exam 2	This is an exam, in which exercises will be proposed to assess the subject that has been explained in the practice sessions. Recoverable activity.	ACTIVITIES OF EVALUATION DURING THE SEMESTER	35
Intermediate theoretical exam	This is a written exam where the theoretical contents seen until the moment of this exam are evaluated. Recoverable activity.	ACTIVITIES OF EVALUATION DURING THE SEMESTER	15
Final theoretical exam	This is the final exam of the course, aimed at evaluating all the theoretical contents of the course. It will consist of the resolution of design problems, as well as exercises and/or short questions of the contents taught within the course. Recoverable activity.	FINAL TEST	35

Official exam dates for academic year 2024-25

Exam session	Date	Time	Group - Classroom(s) allocated	Comments
(C1) Pruebas extraordinarias de finalización de estudios	03/10/2024			
(C2) Periodo ordinario para asignaturas de primer semestre	17/01/2025			Teoría
	17/01/2025			Examen de prácticas.. Examen de prácticas
(C4) Pruebas extraordinarias para asignaturas de grado y máster	01/07/2025			Teoría
	01/07/2025			Prácticas

Academic staff



LLORET PASTOR, ELENA
Lecturer responsible

THEORY CLASS: Groups: 1 , 2 , 3 , 4 , 40
COMPUTER PRACTICALS: Groups: 02 , 03



AGUILAR ANTON, ANTONIA

THEORY CLASS: Groups: 3
COMPUTER PRACTICALS: Groups: 04



ALBERT LASO, JOAN

COMPUTER PRACTICALS: Groups: 02 , 07



DIAZ TORNERO, MATIAS

COMPUTER PRACTICALS: Groups: 01 , 402



ESCOBAR ESTEBAN, MARIA PILAR

THEORY CLASS: Groups: 4



GOMEZ BALLESTER, EVA MARIA PALOMA

THEORY CLASS: Groups: 40
COMPUTER PRACTICALS: Groups: 401



GRANDE RUIZ, EDUARDO

THEORY CLASS: Groups: 2
COMPUTER PRACTICALS: Groups: 03



MARTINEZ GALLEGO, JOSE

COMPUTER PRACTICALS: Groups: 10



MATE MORGA, ALEJANDRO

COMPUTER PRACTICALS: Groups: 09



MOREDA POZO, MARIA PALOMA

THEORY CLASS: Groups: 1



VALDES MUÑOZ, MARIA ANGELES

COMPUTER PRACTICALS: Groups: 06 , 08



ZAMORA SANCHEZ, JOSE LUIS

COMPUTER PRACTICALS: Groups: 05

Groups

THEORY CLASS

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	
Gr. TMP-I2AD (THEORY CLASS) : GRUPO PROVISIONAL PARA FINALIZAR MATRÍCULA	1S	All day	Spanish	0	<ul style="list-style-type: none"> Allowed DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION
Gr. 1 (THEORY CLASS) : 1	1S	Morning	Spanish	126	<ul style="list-style-type: none"> Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 2 (THEORY CLASS) : 2 (ARA)	1S	Morning	English	37	<ul style="list-style-type: none"> Allowed DEGREE IN COMPUTER ENGINEERING Allowed INTERNATIONAL MOBILITY PROGRAMME
Gr. 3 (THEORY CLASS) : 3 VAL	1S	Afternoon	Valencian	27	<ul style="list-style-type: none"> Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 4 (THEORY CLASS) : 4	1S	Afternoon	Spanish	108	<ul style="list-style-type: none"> Allowed DEGREE IN COMPUTER ENGINEERING Allowed VISITING STUDENT NO EEES
Gr. 40 (THEORY CLASS) : 40 I2ADE	1S	Morning	Spanish	47	<ul style="list-style-type: none"> Allowed INTERNATIONAL MOBILITY PROGRAMME Allowed VISITING STUDENT EEES Allowed DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION Allowed VISITING STUDENT NO EEES


COMPUTER PRACTICALS

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	
Gr. TMP-I2AD (COMPUTER PRACTICALS) : GRUPO PROVISIONAL PARA FINALIZAR MATRÍCULA	1S	All day	Spanish	0	<ul style="list-style-type: none"> Allowed DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION
Gr. 01 (COMPUTER PRACTICALS) : 1	1S	Morning	Spanish	31	<ul style="list-style-type: none"> Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 02 (COMPUTER PRACTICALS) : 2	1S	Morning	Spanish	34	<ul style="list-style-type: none"> Allowed DEGREE IN COMPUTER ENGINEERING Allowed VISITING STUDENT NO EEES











Group	Semester	Morning or afternoon session	Language	No. of enrolled students	
Gr. 03 (COMPUTER PRACTICALS) : 3 (ARA)	1S	Morning	English	38	<ul style="list-style-type: none"> ■ Allowed INTERNATIONAL MOBILITY PROGRAMME ■ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 04 (COMPUTER PRACTICALS) : 4 VAL	1S	Afternoon	Valencian	25	<ul style="list-style-type: none"> ■ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 05 (COMPUTER PRACTICALS) : 5	1S	Afternoon	Spanish	37	<ul style="list-style-type: none"> ■ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 06 (COMPUTER PRACTICALS) : 6	1S	Afternoon	Spanish	23	<ul style="list-style-type: none"> ■ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 07 (COMPUTER PRACTICALS) : 7	1S	Morning	Spanish	32	<ul style="list-style-type: none"> ■ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 08 (COMPUTER PRACTICALS) : 8	1S	Afternoon	Spanish	29	<ul style="list-style-type: none"> ■ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 09 (COMPUTER PRACTICALS) : 09	1S	Morning	Spanish	33	<ul style="list-style-type: none"> ■ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 10 (COMPUTER PRACTICALS) : 10	1S	Morning	Spanish	17	
Gr. 401 (COMPUTER PRACTICALS) : 401 I2ADE	1S	Morning	Spanish	30	<ul style="list-style-type: none"> ■ Allowed DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION ■ Allowed VISITING STUDENT NO EEES ■ Allowed INTERNATIONAL MOBILITY PROGRAMME ■ Allowed VISITING STUDENT EEES
Gr. 402 (COMPUTER PRACTICALS) : 402 I2ADE	1S	Morning	Spanish	16	<ul style="list-style-type: none"> ■ Allowed DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION ■ Allowed INTERNATIONAL MOBILITY PROGRAMME ■ Allowed VISITING STUDENT NO EEES ■ Allowed VISITING STUDENT EEES

Timetables

THEORY CLASS

Group	Start date	End date	Day	Start time	End time	Lecture room
1	09/09/2024	20/12/2024	MIE	09:00	11:00	A3/0008 
2	09/09/2024	20/12/2024	LUN	09:00	11:00	A3/0011 
3	09/09/2024	20/12/2024	JUE	15:00	17:00	A3/0007 
4	09/09/2024	20/12/2024	MIE	15:00	17:00	A3/0008 
40	09/09/2024	20/12/2024	MIE	13:00	15:00	A2/E01 

COMPUTER PRACTICALS

Group	Start date	End date	Day	Start time	End time	Lecture room
01	09/09/2024	20/12/2024	MIE	11:00	13:00	0039PB010 
02	09/09/2024	20/12/2024	LUN	13:00	15:00	0039PB011 
03	09/09/2024	20/12/2024	LUN	11:00	13:00	0039PB055 
04	09/09/2024	20/12/2024	JUE	17:00	19:00	0039PS051 
05	09/09/2024	20/12/2024	MIE	17:00	19:00	0039PS051 
06	09/09/2024	20/12/2024	LUN	15:00	17:00	0039PB010 
07	09/09/2024	20/12/2024	JUE	09:00	11:00	0039PB011 
08	09/09/2024	20/12/2024	JUE	17:00	19:00	0039PS002 
09	09/09/2024	20/12/2024	VIE	09:00	11:00	0039PS002 
10	09/09/2024	20/12/2024	MIE	19:00	21:00	0016P1007 
401	09/09/2024	20/12/2024	MAR	08:30	10:30	P3/0-INF1 
402	09/09/2024	20/12/2024	VIE	09:30	11:30	0016P2003 