



DEGREE CURRICULUM  
**COMPUTER SCIENCE**

Coordination: Josep Lluís Llérida

Academic year 2015-16

## Subject's general information

<b>Subject name</b>	Computer Science
<b>Code</b>	101409
<b>Semester</b>	1r Q
<b>Typology</b>	Continuous assesment
<b>ECTS credits</b>	6
<b>Theoretical credits</b>	2.7
<b>Practical credits</b>	3.3
<b>Coordination</b>	Josep Lluís Lérida
<b>Office and hour of attention</b>	jlerida@diei.udl.cat, despatx 3.17 - Escola Politècnica Superior asaiz@diei.udl.cat despatx 1.06 - Escola Politècnica Superior
<b>Department</b>	Computer Science and Industrial Engineering
<b>Teaching load distribution between lectures and independent student work</b>	(40%) 60 h presencials (60%) 90 h treball autònom
<b>Modality</b>	Presencial
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.
<b>Language</b>	Català
<b>Degree</b>	Degree in Architectural Technology
<b>Office and hour of attention</b>	jlerida@diei.udl.cat, despatx 3.17 - Escola Politècnica Superior asaiz@diei.udl.cat despatx 1.06 - Escola Politècnica Superior
<b>E-mail addresses</b>	jlerida@diei.udl.cat asaiz@diei.udl.cat

## Subject's extra information

This course is essentially practical based on solving exercises recommended and required. The individual work is essential for obtaining the competences and acquiring the skills to properly use the tools taught during the course. You can find collections of these materials in Campus Virtual: <http://cv.udl.cat>

1. Introduction to the Computer Science applied to Architecture
2. Introduction to Database Management
3. Collection of exercises and bibliography

The use of Virtual Campus is essential to access the resources of the subject, the scheduling and notifications generated during the course.

## Learning objectives

The practical nature of the subject makes it very useful in many areas and professional fields. The aim is to provide students with knowledge of the area those that are useful and applicable to their qualification profile.

The main objectives of the course are:

1. Identify the basic components of the current computer and its main features.
2. Identify the software tools to develop their professional work.
3. Identify tools and procedures to keep information secure in their workplace.
4. Identify the advantages and disadvantages in using free/proprietary software and learn to choose the most appropriate depending on the SW characteristics, user requirements and cost.
5. Clearly identify the necessary tools to meet the ICT requirements arising from their profession.
6. Use advanced document editing techniques: Styles, numbering schemes, cross-references and tables of contents.
7. Use advanced data processing techniques: Performing statistical calculations, dynamic filtering tools and graphical representation of information.
8. Acquiring skills in using a drawing tool for drawing 2D shapes.
9. Solve two-dimensional shapes and represent bodies in space from a data set provided.
10. Acquire skills in the use of a database management system.
11. Design and develop a database according to the requirements of an organization and considering storage issues.
12. Query a database and display the information based on established requirements.
13. Develop properly and efficient quality technical documents.
14. Successfully integrate information from different applications.
15. Acquire the habit of working in an orderly, organized and precise.
16. Express information in an orderly and accurate way.

## Competences

### University of Lleida strategic competences

- **UdL3.** Mastering ICT's.

### Degree-transversal competences

- **EPS5.** Capacity of abstraction and of critical, logical and mathematical thinking.

## Subject contents

### 1. Advanced Editing for the development of technical documentation

- Advanced reporting
- Advanced use of spreadsheets
- Information Integration
- Use and exploitation of collaborative work environments

### 2. Database Management and information processing

- Database Management Systems. Concepts and components.
- Structure of a Relational DBMS. Basic concepts.
- Interrogation of a Database
- Creating Reports

### 3. Computer-Aided design

- Working environment
- Data entry. Coordinates system
- Basic Drawing commands

- Drawing aid tools and Function Keys
- Editing commands
- Visualization control
- Layers and object properties
- Creating and editing blocks
- Creating and editing dimensions.

## Development plan

Dates (Weeks)	Description	Face-to-Face Activity	FH (2) (Hours)	Autonomous Activity	AH (3) (Hours)
Week 1	Welcome day				
Week 2	Course Presentation (GG)	Exhibition events and methodology	1	Teaching Plan Review	2
	T1. Technical Report Writing	Lecture and participatory classes	2	Study	2
	PR1. Reporting	Participatory classes and classroom practices	1	Exercises and Study	2
Week 3	No Lecture			Exercises resolution and study	4
Week 4	T1. Spreadsheets Elaboration	Lecture and participatory classes	2	Study	2
	PR2. Spreadsheets Elaboration	Case Study and Resolution	2	Case Studies resolution	2
Week 5	No Lecture			Exercises resolution and study	2
Week 6	T2. RDBMS Concepts (GG)	Lecture and participatory classes	2	Study	2
	PR2. Spreadsheets Elaboration	Case Study and Resolution	2	Case Studies and Resolution	2
Week 7	T2. Relational Model	Lecture and participatory classes	2	Exercises and Study	2
	DB Design Activity	Troubleshooting and classroom practices	2	Exercises resolution and study	4
Week 8	T2. Case of Study	Problem Based Learning	2	Exercises and Study	4
	DB Queries Activity	Troubleshooting and classroom practices	2	Exercises resolution and study	4
Week 9	PA1. Evaluation Test - 1	Written exam	2	Resolution and Exam Review	4
Week 10	<b>T2. Valuable Case of Study (CP1)</b>	<b>Problem Based Learning</b>	<b>2</b>	Exercises and Study	4
	PR3. DB Design	Problem Based Learning	2	Exercises resolution and study	4
Week 11	T3. CAD I.	Participatory classes and classroom practices	2	Study	4
	PR4. DB Interrogation	Problem Based Learning	2	Exercises resolution and study	4
Week 12	T3. CAD I.	Participatory classes and classroom practices	2	Study	4
	PR5. CAD I.	Problem Based Learning	2	Exercises and Study	4
Week 13	T3. CAD II.	Participatory classes and classroom practices	2	Study	4
	PR6. CAD II.	Problem Based Learning	2	Exercises and Study	4
Week 14	T3. CAD III.	Participatory classes and classroom practices	2	Study	4
	PR7. CAD III.	Problem Based Learning	2	Exercises and Study	4
Week 15	Solving Cases of Study	Discussion and Doubts	2	Study	4
	<b>PR8. Valuable CAD Practice</b>	<b>Problem Based Learning</b>	<b>2</b>		
Week 16	PA2. Evaluation Test - 2	Written exam	2	Resolution and Exam Review	4
Week 17					
Week 18	Qualifications and Tutoring session				
Week 19	Recovery Test	Individual written exam	2	Resolution and Exam Review	

## Evaluation

Objectives	Assesment Activities	%	Dates	O/V (1)	I/G (2)	Remarks
Unit 1	Assesment Test 1	25	Week 9	O	I	
Unit 2	CP1. Classroom Exercise (BD)	10	Week 10	O	I	
Unit 3	PR8. Classroom Practice (CAD)	35	Week 13	O	I	
Units 2 i 3	Assesment Test 2	30	Weeks 16 o 17	O	I	
Units 1, 2, 3	Recovery assesment	90	Week 19	V	I	Recoveries Week

(1) Mandatory / Voluntary

(2) Individual / Group

**Final Marks:**

In the weeks 9th and 16th / 17th will be performed the evaluation tests: PA1 and PA2. Each of these tests has a weight of 20% and 40% respectively of the final mark.

The final grade is calculated by the sum of the results of the assessment test (PA1 + PA2) plus the classroom practices during the course (CP1 + PR8): **Final Mark = Test + Classroom Practices.**

(\*) On the 19th week the grade of the course can be recovered by a final exam (90%). This test can also be done by all those students having passed the ongoing assessment and want to modify their grade, assuming that the obtained score in the recovery test is the only score that will be considered for the calculation of the final mark.

## Bibliography

**Main Bibliography**

- Prieto A., Lloris P., Torres J.C. Introducción a la Informática. 4a Edición. McGraw-Hill. ISBN8448146247
- Tickoo S. (2000). AutoCAD básico. Paraninfo. ISBN 8428326673
- Luque I., Gómez M.A. (1997). Diseño y uso de Bases de datos relacionales. Ra-ma. ISBN 847897279X

**Extended Bibliography**

- Groff J.R., Winberg P.N. (2003). SQL. Manual de referencia. Mc GrawHill. ISBN 8448139305
- Wilson J.E. (2002). Modelado 3D con AutoCAD. Anaya. ISBN 8441514054