



COURSE: Computing Systems		
DEGREE: Grado en Ingeniería en Tecnologías Industriales	YEAR: 3	TERM: 2

La asignatura tiene 29 sesiones que se distribuyen a lo largo de 14 semanas. Los laboratorios pueden situarse en cualquiera de ellas. Semanalmente el alumnos tendrá dos sesiones, excepto en un caso que serán tres

WEEKLY PLANNING									
WEEK	SESSION	DESCRIPTION	GROUPS (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	Indicate YES/NO If the session needs 2 teachers	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS			DESCRIPTION	CLASS HOURS	HOMEWOR HOURS (Max. 7h week)
1	1	Course introduction. Introduction to the development of computer systems.	X					1,6	6,5
1	2	Requirements engineering	X				Review of concepts and recommended readings	1,6	
2	3	Unified Modeling Language (UML). Object-oriented analysis.	X				Review of concepts and recommended readings	1,6	6,5
2	4	Structural modeling of computer systems. Class Diagrams and Use Case Diagrams.	X				Review of concepts and recommended readings	1,6	
3	5	Dynamical modeling of computer systems.	X				Review of concepts and recommended	1,6	6,5

		Interaction Diagrams, Activity Diagrams, and State Diagrams					readings		
3	6	Object-oriented Design. From design class diagrams to implementation. Patterns.	X				Review of concepts and recommended readings	1,6	
4	7	Introduction to Data Base. Data relational model. Query Languages SQL	X				Review of concepts and recommended readings	1,6	
4	8	Introduction to real time computer systems. Real time tasks. Example of real time systems	X				Review of concepts and recommended readings	1,6	6,5
5	9	Introduction to the object-oriented programming. C++ language					Problems resolution in pseudo code	1,6	
5	10	Introduction to the software development environments. Qt Creator		x	Computer Lab	YES	Use of software development environments	1,6	6,5
6	11	C++ syntax, functions overload. Operators new y delete	x				Problems resolution in pseudo code	1,6	
6	12	Introduction to the C++ programming		x	Computer Lab	YES	Problems resolution	1,6	6,5
7	13	Basic concepts of class, object and methods. Creation and destruction of objects.	x				Problems resolution in pseudo code	1,6	
7	14	Programming using classes and objects.		x	Computer Lab	YES	Problems resolution	1,6	6,5
8	15	Inheritance definition. Simple and multiple inheritances. Virtual Classes	x				Problems resolution in pseudo code	1,6	
8	16	Programming with class hierarchy.		x	Computer Lab	YES	Problems resolution	1,6	6,5
9	17	Polymorphism. Virtual Functions	x				Problems resolution in pseudo code	1,6	6,5

		Abstract Classes							
9	18	Programming with abstract classes and polymorphism		x	Computer Lab	YES	Problems resolution	1,6	
10	19	Template concept. Functions template. Classes' template.	x				Problems resolution in pseudo code	1,6	
10	20	Programming using class and functions templates		x	Computer Lab	YES	Problems resolution	1,6	6,5
11	21	Input and output handling in C++. Formatted input and output. Input and output operators overloading. Files.	x				Problems resolution in pseudo code	1,6	
11	22	File Access programming.		x	Computer Lab	YES	Problems resolution	1,6	6,5
12	23	Exceptions handling. Errors and exceptions in C++. Sentences throw and try	x				Problems resolution in pseudo code	1,6	
12	24	File maintenance programming		x	Computer Lab	YES	Problems resolution	1,6	6,5
13	25	Error and exception handling programs.		x				1,6	
13	26	Input and output ports access		x				1,6	6,5
14	27	Relational Data Base access		x				1,6	
14	28	Real time programming		x				1,6	6,5
	29	General programing revision		x				1,6	
Subtotal 1								48,33	91

Total 1 (Hours of class plus student homework hours between weeks 1-14)

139,33

15		Tutorials, handing in, etc							
16		Assessment							
17								3	
18									8

	Subtotal 2	3	8
Total 2 (<i>Hours of class plus student homework hours between weeks 15-18</i>)		11	
TOTAL (<i>Total 1 + Total 2. Maximum 180 hours</i>)		150,33	