



COURSE NAME: SYSTEM SOFTWARE DEVELOPMENT		
DEGREE: COMPUTER SCIENCE	LEVEL: 4	SEMESTER: 1

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

PLANIFICACIÓN SEMANAL DE LA ASIGNATURA									
WEEK	LECTURE	CONTENT	GROUP (marcar X)		CLASSROOM	Indicar SI/NO es una sesión con 2 profesores	WEEKLY STUDENT WORK		
			GRANDE	PEQUEÑO			DESCRIPTION	HOURS AT CLASS	HOMEWORK HOURS (Max. 7h week)
1	1	Introduction to the system programming	X				Subject introduction, rules and introduction	1,66	
1	2	Introduction to C++. Objects, types and values		X	Computer lab		Introduction to C++. Basic concepts, code organization and functions..	1,66	7
2	3	Classes and inheritance. Operator overloading.	X				Object-orientes programming. Operator overloading	1,66	
2	4	Containers, arrays and free store		X	Computer lab		Data containers and memory management	1,66	7
3	5	Templates	X				Templates, types and instantiation	1,66	
3	6	Metaprogramming		X	Computer lab		Metaprogramming with/without templates	1,66	7
4	7	C++ standard library (STL)	X				Containers and STL algoritms	1,66	7

4	8	Generic programming		X	Computer lab		Generic programming based on STL	1,66	
5	9	C++ concurrency model	X				Memory model and threads	1,66	
5	10	Exercises about STL		X	Computer lab		Practical exercises in C++	1,66	7
6	11	Task-based concurrency	X				Task definition. Concurrency models.	1,66	
6	12	Lab: Introduction for first lab assignment		X	Computer lab		Introduction of the lab assignment	1,66	7
7	13	C++11 and C++14	X				New functionalities of C++	1,66	
7	14	Concurrency exercises		X	Computer lab		Practical exercises in C++	1,66	7
8	15	UNIX. Memory model, control error and debugging	X				Introduction of UNIX. Memory management and debugging techniques	1,66	
8	16	Dynamic and shared memory		X	Computer lab		OS calls to dynamic memory	1,66	7
9	17	Memory mappings	X				Management of inter-process memory sharing	1,66	
9	18	Exercises of memory management		X	Computer lab		Practical exercises	1,66	7
10	19	Input/Output. Scatter-gather	X				Basic I/O model. fcntl and ioctl. Vectorized I/O	1,66	
10	20	Asynchronous I/O and buffering. E		X	Computer lab		I/O buffering.. Non-blocking I/O. Select()	1,66	7
11	21	I/O multiplexing	X				Events. Multiplexing services (poll y epoll)	1,66	
11	22	Lab: Introduction for second lab assignment		X	Computer lab		Introduction to the second lab assignment	1,66	7
12	23	Signal and timers	X				Concepts of signals and handlers.	1,66	
12	24	Lab: second lab assignment		X	Computer lab		Assignment work	1,66	7
13	25	Libraries and utilities	X				Static and shared libraries	1,66	
13	26	Dynamic libraries		X	Computer lab		Dynamic libraries	1,66	7
14	27	Monitoring and performance evaluation	X				Performance evaluation: metrics. Application monitoring	1,66	
14	28	Utilities		X	Computer lab		System utilities	1,66	7
7	29	Lab: first lab assignment		X	Computer lab		Assignment work	1,66	3
Subtotal 1								48,33	101
Total 1 (Horas presenciales y de trabajo del alumno entre las semanas 1-14)								149,33	

15		Extra lectures, work on reports, tutorships,							16
16		Final exam preparation							3
17									10
18									
								Subtotal 2	3
								Total 2 (<i>Horas presenciales y de trabajo del alumno entre las semanas 15-18</i>)	29
								TOTAL (<i>Total 1 + Total 2. Máximo 180 horas</i>)	178,33