Universidad Carlos III de Madrid
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COURSE: Systems Architecture		
DEGREE: BACHELOR'S DEGREE IN TELECOMMUNICATION TECHNOLOGIES	YEAR: 2	TERM: 1

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	HOMEWORK HOURS (Max. 7h week)
1	1	Course presentation. Description of the course, evaluation policy, material. Operating Systems Introduction.	x			NO	Log in the platform. Read documentation about threads and Operating Systems	1,66	
1	2	The workplatform: Linux. My first threads.		x	Computer Classroom	NO	Read documentation about the Linux operating system. Read documentation about threads and Operating Systems.	1,66	7
2	3	Process and Thread concepts. Basic concurrency.	x			NO	Read a document about concurrency problems and locks.	1,66	
2	4	Software versioning and revision control system. Using locks to solve race conditions		x	Computer Classroom	NO	Previous reading about what is a software versioning and revision control system and about locks and threads.	1,66	7

3	5	Synchronization mechanisms: semaphores.	x			NO	Read a document about semaphores and threads.	1,66	
3	6	Using semaphores to solve race conditions and to implement classical concurrency problems		x	Computer Classroom	NO	Read a document about semaphores and threads	1,66	7
4	7	Synchronization mechanisms: monitors	x			NO	Read a document about monitors and threads	1,66	
4	8	Using monitors to solve race conditions and to implement classical concurrency problems		x	Computer Classroom	NO	Read a document about monitors and threads	1,66	7
5	9	Von Neumann Machine Presentation. Exercises about memory and data size, basic types in C, data structures and function definition	x			NO	Previous reading about data types in C and Java. Download a virtual machine Read a document about how pointers are declared and define a stack, queue or list	1,66	
5	10	Compilation of C programs. Execute a program and stop it using the debugger. Examine data structures while the program is in execution		x	Computer Classroom	NO	Read a document about how to compile a program and write some test programs. Previous reading about what is the debugger and a software versioning and revision control system..	1,66	
6	11	Study the use of pointers in C. Exercises about their use. Design of a data structure with pointers. Discussion about the need of operations for dynamic memory management in C. Study of dynamic data structures	x			NO	Read a document with an example to motivate the use of dynamic memory. Solving problems in which dynamic data structures are created and destroyed	1,66	
6	12	Design a program that executes input/output operations		x	Computer Classroom	NO	Previous reading about input/output operations.	1,66	
7	13	**Partial Exam** and solution	x			NO	Review of the material covered so far	1,66	7
7	14	**Lab Exam**		x	Computer Classroom	YES	Review of the code written so far.	1,66	
8	15	Study of complex data structures using pointers. Study the concept of memory leak and how it is produced.	x			NO	Given the description of a data structure, write its definition in C. Previous reading of a document explaining what is a memory leak. Exercise about how the data is stored	1,66	7

							in memory		
8	16	Detecting memory leaks using the tool Valgrind. Design a program containing complex data structures and detect memory leaks with this tool.		x	Computer Classroom	NO	Previous reading about Valgrind, Exercises to detect memory leaks.	1,66	
9	17	Files Input/Output	x			NO	Previous reading about I/O with files.	1,66	
9	18	**Project Exam and submission of in-pairs project**		x	Computer Classroom	YES	Review of the code written for the Project	1,66	7
10	19	Processes in C language.	x			NO	Previous reading about processes.	1,66	
10	20	Review of Milestone 2 of the Project input/output operations		x	Computer Classroom	YES	Implementation of the required functionality for Milestone 2 of the Project	1,66	7
11	21	Interprocess communication mechanisms	x			NO	Previous Reading about IPC	1,66	
11	22	Interprocess communication mechanisms lab		x	Computer Classroom	NO	Previous Reading about IPC	1,66	7
12	23	Review of Milestone 3		x	Computer Classroom	NO	Implementation of the required functionality for Milestone 3 of the Project	1,66	7
12	24	Review of Milestone 4		x	Computer Classroom	NO	Implementation of the required functionality for Milestone 4 of the Project	1,66	
13	25	Problems Session	x			NO	Review of the material covered so far	1,66	
13	26	**Project Exam and submission of first version of the project**		x	Computer Classroom	YES	Review of the code written for the Project	1,66	7
14	27	Review of the Project		x	Computer Classroom	NO	Implementation of the required functionality for Milestone 6 of the Project	1,66	
14	28	**Submission of final version of the project**		x	Computer Classroom	NO	Review of the code written for the Project	1,66	7
10	29	Review of Milestone 1 of the Project: complex user menus		x	Computer Classroom	NO	Implementation of the required functionality for Milestone 1 of the Project	1,66	
							Subtotal 1	**48,33**	**98**
		Total 1 *(Hours of class plus student homework hours between weeks 1-14)*						146,33	
15		Project presentation		X	Computer Classroom	NO	Each team has 10 minutes for presenting their work	1,66	2

16		Evaluation and evaluation preparing					0	
17								
18								
						Subtotal 2	**1,66**	**2**
						Total 2 *(Hours of class plus student homework hours between weeks 15-18)*	3,66	
TOTAL *(Total 1 + Total 2. Maximum 180 hours)*							**150**	