Universidad Carlos III de Madrid
www.uc3m.es

COURSE: Computación Distribuida		
DEGREE: Grado en Ingeniería en Tecnologías de Telecomunicación	YEAR: 2014/2015	TERM: 1

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	HOMEWORK HOURS (Max. 7h week)
1	1	Introduction to distributed computing (1/2)		X		No	The evolution of technology and its adaptation to the people needs, from which technologies we have evolved from and where we have arrived	1,6	
1	2	Introduction to distributed computing (2/2)		X		No	Legacy systems and new architectures(Cloud/Grid)	1,6	2
2	3			X		No	What is the cloud?	1,6	2

		Distributed computing and cloud (1/3)							
2	4	Distributed computing and cloud (2/3)		X		No	Architectures (IaaS, PaaS, SaaS), security and privacy aspects of cloud	1,6	
3	5	Testing SaaS (Google APP Engine, Azure…)		X	AULA TELEMÁTICA (41B01,41B02)	No	Demonstrative assignment. What can be done with the cloud? Which degree of control can I have? The data lock in problem	1,6	
3	6	Distributed computing and cloud (3/3)		X		No	Use cases, business case analysis. Tools for assessing the benefits of the cloud for a given business case..	1,6	2
4	7	Testing SaaS (Google APP Engine, Azure…)		X	AULA TELEMÁTICA (41B01,41B02)	No	Demonstrative assignment. What can be done with the cloud? Which degree of control can I have? The data lock in problem	1,6	
4	8	Analyze your business idea (do you need the cloud?)		X		No	Given a business case provided by students this practical session pursues to discuss whether this case is a candidate for moving to the cloud or not. Can be done in groups..	1,6	2
5	9	Communication protocols for distributed systems		X		No	Legacy protocols and evolution.	1,6	
5	10	Communication protocols for distributed systems		X		No	Current protocols (REST/HTTP, Web Services, uses and consequences of AJAX, JSON/XML payloads)	1,6	2
6	11	Using REST to access known services (Dropbox, Facebook…)		X	AULA TELEMÁTICA (41B01,41B02)	No	Demonstrative assignment. Observe and perform small modification of an application that uses a REST API to access popular storage services, social networks etc…	1,6	2

6	12	Using REST to access known services (Dropbox, Facebook…)		X	AULA TELEMÁTICA (41B01,41B02)	No	Demonstrative assignment. Scrapping (obtaining data sets for further analysis and usage in other applications)	1,6	
7	13	Communication protocols for distributed systems		X		No	Massive web systems and mobile applications. How to handle millions of users and perform load balancing. Using REST interfaces for mobile devices. Cases of success.	1,6	
7	14	REST and load balancing.		X	AULA TELEMÁTICA (41B01,41B02)	No	Demonstrative assignment. Why companies uses REST/HTTP to build mobile applications. How they work? Load balancing examples. Traffic generation. Measuring your application/web to find overloads	1,6	2
8	15	REST and load balancing.		X	AULA TELEMÁTICA (41B01,41B02)	No	Demonstrative assignment. Why companies uses REST/HTTP to build mobile applications. How they work? Load balancing examples. Traffic generation. Measuring your application/web to find overloads	1,6	
8	16	Mapreduce		X		No	Introduction to Big Table, Hadoop and the importance of handing data-set.	1,6	2
9	17	Usage of Hadoop		X	AULA TELEMÁTICA (41B01,41B02)	No	How to obtain a data-set (from social networks, markets …) and plot an analysis for a business case.	1,6	
9	18	Mapreduce		X		No	Architecture, data layer and usage of Hadoop and MapReduce.	1,6	2
10	19	Usage of Hadoop		X	AULA TELEMÁTICA (41B01,41B02)	No	Demonstrative assignment. Set up and first steps with Hadoop.	1,6	2

10	20	Mapreduce		X		No	Architecture, data layer and usage of Hadoop and MapReduce.	1,6	
11	21	Usage of Hadoop		X	AULA TELEMÁTICA (41B01,41B02)	No	Guided assignment. Usage of MapReduce for analyzing data, social networks, processing multimedia and others	1,6	
11	22	Mapreduce		X		No	Architecture, data layer and usage of Hadoop and MapReduce.	1,6	2
12	23	Usage of Hadoop		X	AULA TELEMÁTICA (41B01,41B02)	No	Guided assignment. Usage of the MapReduce for data analysis	1,6	
12	24	Your project		X	AULA TELEMÁTICA (41B01,41B02)	No	Extending any of the distributed computing applications shown during the lab sessions as use of cloud, accessing the cloud, data-set analisys for a given objective. Can be done in groups. Should be done during class time.	1,6	2
13	25	Your project		X	AULA TELEMÁTICA (41B01,41B02)	No	Extending any of the distributed computing applications shown during the lab sessions as use of cloud, accessing the cloud, data-set analisys for a given objective. Can be done in groups. Should be done during class time.	1,6	
13	26	Your project		X	AULA TELEMÁTICA (41B01,41B02)	Yes	Extending any of the distributed computing applications shown during the lab sessions as use of cloud, accessing the cloud, data-set analisys for a given objective. Can be done in groups. Should be done during class time.	1,6	2
14	27	Your project		X	AULA TELEMÁTICA (41B01,41B02)	Yes	Extending any of the distributed computing applications shown during the lab sessions as use of cloud, accessing the cloud, data-set analisys for a given objective. Can be done in groups. Should be done during class time.	1,6	

14	28	Your project			X	AULA TELEMÁTICA (41B01,41B02)	Yes	Extending any of the distributed computing applications shown during the lab sessions as use of cloud, accessing the cloud, data-set analisys for a given objective. Can be done in groups. Should be done during class time.	1,6	2
11	29	Your project			X	AULA TELEMÁTICA (41B01,41B02)	Yes	Extending any of the distributed computing applications shown during the lab sessions as use of cloud, accessing the cloud, data-set analisys for a given objective. Can be done in groups. Should be done during class time.	1,6	1
29								**Subtotal 1**	48,33	29
,3				**Total 1** *(Hours of class plus student homework hours between weeks 1-14)*					77,3	

15		Tutorship							
16									
17		Project presentation						3	
18									4
4								**Subtotal 2**	3	4
				Total 2 *(Hours of class plus student homework hours between weeks 15-18)*					7

TOTAL *(Total 1 + Total 2. Maximum 180 hours)*	**84.33**