Universidad Carlos III de Madrid

COURSE: COMPUTER NETWORKS		
DEGREE: Data Science and Engineering	YEAR: 1st	TERM: 2nd

WEEKLY PROGRAMMING

WEEK	SESSION	DESCRIPTION	GROUPS		Special room for session (computer classroom, audio-visual classroom…)	Session with 2 teachers YES/NO (*)	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURE	SEMINAR			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS Maximum 7 H
1	1	**COURSE INTRODUCTION** **s1.1.** Introduction to Computer Networks, Protocols, Circuit Switching, Packet Switching, Internet Architecture, Protocol Layers	X				• Reading: 1.1, 1.3, 1.5	1,66	6.5 H
1	2	**s1.2.** Delays. **p1.** Use case solving and discussion		X			• Reading: 1.4 • Self-study exercises	1,66	
2	3	**s2.1.** Application layer principles. Transport layer services (TCP/UDP) offered to the application layer. Application example. DNS	X				• Reading: 2.1, 2.5	1,66	6.5 H
2	4	**s3.1.** Transport layer principles. Multiplexing and Demultiplexing. UDP		X			• Reading: 3.1, 3.2 and 3.3	1,66	
3	5	**s3.2.** Reliable Data Transfer	X				• Reading: 3.4	1,66	6.5 H
3	6	**s3.3.** TCP		X			• Reading: 3.5	1,66	6.6 H
4	7	**s3.4**. Congestion control principles. TCP congestion control	X				• Reading: 3.6.1 and 3.7	1,66	6.5 H
4	8	t1: Test 1: Chapters 1 & 2		X			• Reading chapters 1, and 2	1,66	

5	9	**s4.1**. Network layer principles. Virtual circuits and datagrams. Router Architecture, IP header	X				• Reading: 4.1, 4.2, 4.3	1,66	6,5H
5	10	**P2**. Use case solving and discussion (Chap 3)		X			• Self-study for the exercises	1,66	6.5 H
6	11	**s4.2.**, Addressing	X				• Reading: 4.4.1, 4.4.2, 4.4.4	1,66	6,6H
6	12	t2: Test 2: Chapter 3		X			• Self-study for the test	1,66	
7	13	**s4.3.** Fragmentation, DCHP, NAT, ICMP, IPv6	X				• Reading: 4.4.2, 4.4.3	1,66	6.5 H
7	14	**s4.4**. IP design exercise discussion		X			• Self-study for the addressing exercise (Ld) that will be delivered before this session.	1,66	
8	15	**S4.5**. Routing algorithms. Link state. Distance vectors. Hierarchical routing.	X				• Reading: 4.5 • Self-study for the concept test	1,66	6.5 H
8	16	**S4.6**. Internet routing. Broadcast routing algorithms		X			• Reading: 4.6.1, 4.6.2, 4.7.1	1,66	
9	17	**S5.1**. Link layer principles. Link layer services. Multiple access protocols	X				• Reading: 5.1, 5.2 and 5.3.	1,66	6.5 H
9	18	**Lr1**. Routers lab		X	Telematics Lab		• Self-study for the routers lab	1,66	
10	19	**P3**. Use case solving and discussion	X				• Self-study for the excersices	1,66	6.5 H
10	20	**Lr3**. Routers lab		X	Telematics Lab		• Self-study for the routers lab	1,66	
11	21	**t3: Test 3: Chapter 4**	X				• Self-study for the test	1,66	6.5 H
11	22	**Lr4**. Routers lab		X	Telematics Lab		• Self-study for the routers lab	1,66	
12	23	**s5.2**. Link layer addressing. Ethernet	X				• Reading: 5.4 and 5.5	1,66	6.5 H
12	24	**P4**. Use case solving and discussion		X			• Self-study for the exercises	1,66	
13	25	**T4: Test 4: chapter 5**	X				• Reading: 5.6 and 5.8 (MPLS)	1,66	6.5 H
13	26	**T5: Test 5: Practice evaluation**		X			• Self-study for the practice evaluation	1,66	
14	27	**Extra session for problem solving**					•		
SUBTOTAL								**47 + 91 = 138**	
15		General study of course material							7 H
16 - 17		Evaluation preparation and evaluation							5 H
TOTAL								**150**	