uc3m | Universidad Carlos III de Madrid
Departamento de Ingeniería Telemática

	COURSE: Mobile System & Communication Security		
Máster en Ciberseguridad	**YEAR: 1º**		**SEMESTER: 2º**

WEEK	SESSION	DESCRIPTION	GROUPS (mark X)		Special room for session (computer classroom, audio-visual classroom…)	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS/ LAB[1]	SEMINARS/ LAB[1]	DESCRIPTION	CLASS HOURS	HOMEWOR HOURS (ma 7h week)
1	1	Introduction to the course. Introduction to the Cellular Phone Standards, from 1G to 3G	X			Study concepts related to Mobile Security and understand the evolution of cellular phone security from GSM to UMTS.	1,66	5
	2	Security in Cellular Phone Communications: LTE – From 4G to 5G	X			Review and analyze LTE Security specifications, focusing on new security algorithms for LTE (EPS-AKA, NAS/AS Security, Key hierarchy…) and describing their main advantages and disadvantages.	1,66	
2	3	Security in Wireless Communications	X			Review the security algorithms and protocols for wireless communications: 802.11. Experiment with different test cases through deployment of a fake access point (AP). Document the tests performed.	1,66	7
	4	Practice at laboratory: Fake AP		X	Lab		1,66	
3	5	Vo(IP) Security over LTE for Mobile Applications		X	Lab	Study VoIP Security over LTE. Extend the deployed fake AP to include SIP communications. Document and submit a report with the tests performed.	1,66	7
	6	Introduction to the Platforms for Mobile Devices	X			Study about mobile platforms for mobile devices and their security support. Identify the main threats and risks.	1,66	
4	7	Mobile Malware and Mobile Development Security	X			Learn security tips for mobile applications development and study kind of mobile malware.	1,66	7
	8	Practice at laboratory: Mobile Development		X	Lab		1,66	

						Develop and deploy a mobile malware, specifically a malicious application that steals sensitive user information.		
5	9	(U)SIM Security and Mobile Device Management (MDM)		X	Lab	Understand (U)SIM security and technologies for application development and learn how to work Mobile device management (MDM) software. Deploy a MDM system as a proof-of-concept.	1,66	7
	10	Practice at laboratory (I): Smartphone Security		X	Lab	Experiment with certificate management, engineering reverse and secure data storage in mobile devices, using an emulation platform.	1,66	
6	11	Practice at laboratory (II): Smartphone Security		X	Lab	Experiment with certificate management, engineering reverse and secure data storage in mobile devices, using an emulation platform	1,66	7
	12	Student Assignment Work		X	Lab	Technical oral presentation and defense of the practical work done about mobile security. Document and submit the report.	1,66	
						Subtotal 1	**19,92**	**40**
						Total 1 *(Hours of class plus student homework hours between weeks 1-7)*		**59,92**

[1] **A maximum of 1-2 lab sessions**

1-7		Tutorials, handing in, etc.					10	
8		Assessment					3	7
						Subtotal 2	**3**	**17**
						Total 2 *(Hours of class plus student homework hours at week 8)*		**20**

TOTAL *(Total 1 + Total 2)*	**79,92**