

<b>COURSE: Secure Communications</b>		
<b>MÁSTER: Master in Cybersecurity</b>	<b>YEAR: 1st</b>	<b>TERM: 1st</b>

WEEKLY SCHEDULE OF THE COURSE									
WEEK	SESSION	DESCRIPTION OF THE SESSION	GROUP (mark with X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual classroom)	Indicate YES/NO if the session requires 2 teachers	WEEKLY WORK FOR STUDENT		
			LECTURES	SEMINARS			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h per week)
1	1	<b>Course overview</b>	X					1,66	4
	2	<b>Introduction to security in communication networks:</b> Definitions, attacks, countermeasures	X				Review the concepts learned in session 2. Prepare sessions 3 and 4 (review Ethernet and PPP).	1,66	
2	3	<b>Security at physical and link layers (I):</b> Ethernet, STP, VLAN, Ethernet attacks	X					1,66	4
	4	<b>Security at physical and link layers (II):</b> PPP, AAA, EAP, RADIUS	X				Review the concepts learned in sessions 3 and 4. Prepare session 5 (review IEEE 802.11).	1,66	
3	5	<b>Security at physical and link layers (III):</b> IEEE 802.11, WEP	X					1,66	4
	6	<b>Security at physical and link layers (IV):</b> IEEE 802.1x, WPA, WPA2	X				Review the concepts learned in sessions 3 and 4. Prepare sessions 7 and 8 (Review IPv4, ARP, ICMP)	1,66	

4	7	<b>Security at network layer (I):</b> IPv4, IPv6, ARP, ICMP, DHCP, routing in IP networks	X					1,66	
	8	<b>Security at network layer (II):</b> Attacks to IP networks, secure IP routing	X				Perform <b>wardriving lab</b> and write the deliverable. Review the concepts learned in sessions 7 and 8.	1,66	7
5	9	<b>Security at network layer (III):</b> IPSec, ESP, AH, IKE	X				Review the concepts learned in sessions 9 and 10.	1,66	4
	10	<b>Security at network layer (IV):</b> IPSec VPNs	X				Prepare lab (read handout and review Ethernet, ARP, DHCP)	1,66	
6	11	<b>Ettercap lab</b>		X	Lab.		Write the deliverable of the lab.	1,66	7
	12	<b>Ettercap lab (cont.)</b>		X	Lab.	yes	Prepare exam (sessions 1-12)	1,66	
7	13	<b>Partial exam 1</b>	X			yes		1,66	2
	14	<b>Partial exam 1 (cont.)</b>	X			yes	Prepare session 15 (review TCP, UDP)	1,66	
8	15	<b>Security at transport layer (I):</b> TCP, UDP	X				Review the concepts learned in sessions 15 and 16.	1,66	4
	16	<b>Security at transport layer (II):</b> SSL, TLS, DTLS	X				Prepare session 17 (review PPP).	1,66	
9	17	<b>Security at transport layer (III):</b> PPTP, L2TP VPNs	X				Review the concepts learned in sessions 17 and 18.	1,66	4
	18	<b>Security at transport layer (IV):</b> SSL VPNs	X				Prepare sessions 19 y 20 (review DNS, HTTP)	1,66	
10	19	<b>Security at application layer (I):</b> DNS, DNSSec	X				Review the concepts learned in sessions 19 and 20.	1,66	4
	20	<b>Security at application layer (II):</b> HTTP, HTTPS	X				Prepare sessions 21 y 22 (review SMTP, POP3, IMAP, Telnet, FTP)	1,66	
11	21	<b>Security at application layer (III):</b> e-mail protocols, PGP, S/MIME, Spam, DKIM	X				Review the concepts learned in sessions 21 and 22.	1,66	4
	22	<b>Security at application layer (IV):</b> Telnet, FTP, SSH	X				Prepare lab (read handout and review TLS, IPSec, SSL VPNs)	1,66	
12	23	<b>TLS lab</b>		X	Lab.	yes	Write the deliverable of the lab.	1,66	7
	24	<b>TLS lab (cont.)</b>		X	Lab.	yes	Prepare exam (sessions 15-24)	1,66	
<b>Subtotal</b>								<b>40</b>	<b>53</b>

**TOTAL** (Total 1 + Total 2. Max 180 hours)

**95**