



IoT security nuggets

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Syllabus v Profiles

		ALL USERS	MANAGER	SMART FACTORY
Understanding IoT Architecture	IoT devices	X		X
	IoT connectivity	X		X
	Embeddded intelligence	X		X
	Data sensing	X		X
Need of Internet of Things (IoT) Security	IoT Security challenges	X	X	X
	Confidentiality	X		
	Integrity	X		
	Availability	X		
	no-repudiation	X		
	Access Control	X	X	
	weak authentication	X	X	X
	Unprotected communications	X	X	X
	biometrics	X		
	denial of service filtering		X	X
	ethical hacking		X	
	firewalls			X
	intrusion detection systems			X
	threat management		X	x
	security policy		X	
	audit		X	
IOT Communication Protocol	Networks, Clouds, Edge, data transport		X	X
	TCP/IP Reference Model			X
	Application Layer Protocols (MQTT, CoAP, HTTP, Web socket, DDS, AMQP)			X
	Network Layer Protocols (IPv4, IPv6, LowPAN)			X
IOT Technology Standards	Link Layer Protocols (Ethernet, WiFi, WiMax, Cellular)	X		X
	Wireless Communication Protocols (Bluetooth, Zigbee, 6lowPAN, WiFi, Z-wave)	X		X
Security Classification & Access Control	Data Classification and criteria (Public, Private, Sensitive, Confidential, Proprietary)	X		X
	Privacy Issues in IoT	X	X	
	IoT Ecosystem Access Control		X	X
	Authentication			X
	Authorization			X
	Accounting			X
	Data Integrity		X	X
Cryptography	Cryptography	X		
	Symmetric Key Algorithms (AES and DES)			X
	Asymmetric Key Algorithm (RSA)			X
	Attacks (Dictionary and Brute Force, Lookup Tables, Reverse Look Tables, Rainbow Tables)		X	X

	Hashing (MD5, SHA256, SHA512, RipeMD, Whirlpool)			X
Attacks & Implementation	Risk of IoT	X	X	
	Vulnerability Exploitation	X	X	X
	Attacks of Privacy	X	X	X
	Web Based Attacks	X	X	X
Security Management	Identity and Access Management			X
	Key Management			X
Intrusion Detection and Prevention	Intrusion, Physical Theft, Abuse of Privileges, Unauthorized Access , Malware infection	X	X	
	Intrusion detection and prevention Techniques			X
	Anti-Malware software			X
	System Integrity Validation.			X
IoT Security and the Law	Cybersecurity Regulations and standards.		X	
Case Studies and Discussion	Smart Homes	X	X	
	Smart Retail Supply	X	X	
	Smart Healthcare	X	X	
	Smart Grid	X	X	
	Smart Cities	X	X	
	Smart Industry	X	X	