附件一

國立台灣科技大學新開課程計畫書

1.	開課所系 Department	資工系			104學年度第2 學期 Year Semester 其他： Other time:	
2.	課程代號 Course Code	CS5135	必修/選修 Required/ Elective	選修	開課年級 Grade	大四、研究所
	課程名稱 Course Title	中文(Chinese) 無線通訊與物聯網安全 （中文15個字以內）				
		英文(English) Wireless Communications and Internet of Things Security				
3.	學分數 Credits	3	每週上課時數 Hours Per Week	3	每週實習時數 Intern Hours Per Week	
4.	先修課程或特殊規定 Pre-Requisite	Information Security, Introduction to Networking, Data Communications, Wireless Communications (any one of these 4 courses)				
5.	課程宗旨 Purpose of the Course	The objective of this course is to teach the students the security threats to the wireless communication networks (including GSM, Wi-Fi, RFID, IOV and IOT) and how to secure such networks with the relevant wireless network security technologies. The focus of this course is on cryptography and its application to the wireless network with a special focus on Internet of Things (IOT) security technologies, standards, and best practices.				
6.	課程中文大綱 Outline of the Course (In Chinese)	1. 什麼是無線網路安全? 2. 無線傳輸媒體與無線網路 3. Wi-fi, Wimax, RFID, ZigBee/IEEE 802.15.4, Bluetooth, IOV, IOT, ICS 技術簡介 4. 密碼學與密碼技術複習 5. 感測網路風險與安全控管 6. 感測網路隱私考量 7. 感測網路和物聯網標準與安全機制 8. IEEE 802.11安全概論 9. IEEE 802.11i/RSN簡介 10. WLAN, IOT 和 ICS安全概論 11. WLAN, IOT 和 ICS安全最佳實作與案例研習 12. FIPS與無線網路產品認證 13. WLAN, IOV, IOT和ICS安全挑戰 14. 無線網路/IOT未來安全趨勢				

7.	課程英文大綱 Outline of the Course (In English)	1. What is wireless network security? 2. Wireless transmission and wireless network 3. Overview of wireless and mobile communication technologies (e.g., Wi-fi, Wimax, RFID, ZigBee/IEEE 802.15.4, Bluetooth, Internet of Vehicle (IOV), Internet of Things (IOT) and Industrial Control Systems (ICS) technologies) 4. Review of cryptography and cryptanalysis 5. Sensor Networks (e.g., RFID, ZigBee, ICS) risks and security controls 6. Sensor Networks and IOT privacy considerations 7. Sensor Networks and IOT standards and security mechanisms 8. Overview of IEEE 802.11 security 9. A guide on IEEE 802.11i and Robust Security Networks (RSN) 10. IOV, IOT & ICS Security Overview 11. WLAN, IOT and ICS security best practices and case studies 12. FIPS140 and Wireless Network security product certifications 13. WLAN, IOV, IOT & ICS Security Challenges 14. Wireless network and IOT security future directions
8.	核心專業能力 Core Professional Competencies (In Chinese)	*具備實驗設計應用與驗證能力 *能發掘並解決問題 *具備活用技術應用於產業之能力 *具備跨領域組合與團隊協調之能力 *具備組織與溝通表達之能力 *自我充實與終身學習
9.	校內有否開設類似課程 Similar Course In Campus	X 否 No ☐ 有，其課程名稱為： Yes(Please specify course title):
10.	任課教師 Lecturer	鄭博仁

本課程經下列相關會議通過：

單位主管：＿＿＿＿＿＿　系級課程委員會議：**資工系104學年度第4次課務暨招生委員會通過**

院　　長：＿＿＿＿＿＿　院級課程委員會議：＿＿＿＿＿＿

教務處收件日期：＿＿＿＿＿＿　校級課程委員會議：＿＿＿＿＿＿

教　務　會　議　：＿＿＿＿＿＿