

Course Content

Course Title (English)	Special Topics on IoT Application Systems
Course Title (Chinese)	物聯網應用系統專題
Credit	3
Instructor	Prof. Alex I-Chi Lai 賴怡吉 教授
Outline	<p>Attribute to the pervasiveness of the Internet of Things (IoT) within various industries in the modern society, the demand of IoT talents - especially those who have accumulated experiences in the pre-course “Introduction to the Internet of Things” class or likes, is increasing rapidly. Therefore, this course “Special Topics on IoT Application Systems” aims at ***** by covering a series of advanced topics including: Device and Service Discovery, Data Visualization and Analytics, Remote Provisioning and Deployment, Configuration Management, etc., across the entire life cycle of real-world IoT systems. Moreover, this course further highlights prevailing IoT service such as Spatial Positioning and Location-based Service, Fleet management, to name a few, as the enablers to IoT application domains.</p> <p>物聯網 (Internet of Things, IoT) 已經逐漸融入各產業與現代生活之中，為培養已具備「物聯網導論」素養之學生，能解決真實世界的物聯網挑戰，實現各種不同的創新應用系統，期能有助於學生未來面對產業及市場。故本「物聯網應用系統專題」課程以深入探討 Device and Service Discovery, Data Visualization and Analytics, Remote Provisioning and Deployment, Configuration Management 等有連貫性之一系列 IoT 先進課題為主軸，涵蓋物聯網系統整體生命週期，並銜接如空間定位與機隊管理等普及物聯網服務，以銜接各種應用領域，成為本課程亮點。</p>

	<p>首週：物聯網 (IoT) 應用系統實作課程說明</p> <p>單元一：Topic #1: IoT Device Onboarding and Service Provisioning 設備登錄與服務開通專題</p> <p>單元二：資料視覺化專題</p> <p>單元三：配置組態與佈建專題</p> <p>單元四：定位系統實作專題</p> <p>單元五：無人搬運車隊 (AGV Fleet) 應用實作專題</p> <p>以上均含：國內外應用現況、實作 project 架構需求、實作軟硬體平台介紹、應用實作、討論、測試與成果報告。</p> <p>第 18 週：期末報告與彈性應用週</p>
<p>Goal</p>	<p>The objectives of “Special Topics on IoT Application Systems” are enabling the students to:</p> <ol style="list-style-type: none"> 1. Cultivate the holistic, system-scope knowledge and skillset of the whole IoT stacks; 2. Dive into important IoT aspects including systematic design concepts, key technologies and solution implementations to address real-world cases; 3. Build up the problem-solving capabilities from data collections and analysis to hardware/software co-design to implementation and system integration; and 4. Motivate future research and exploration of advanced IoT-centric topics and related application domains. <p>本課程設定目標如下：預期讓學生</p> <ol style="list-style-type: none"> 1. 培養全面 IoT 系統觀層級的開發與設計能力。 2. 透過實際系統專題實作，深入了解 IoT 的重要系統觀念與關鍵技術。 3. 建立從蒐集分析感測數據，至軟硬共構設計，乃至系統整合的整體問題解決能力。 4. 引發對 IoT 先進應用領域的探索興趣與深入研究動機。

English Teaching	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Teaching Material	<input checked="" type="checkbox"/> English <input type="checkbox"/> Chinese