

**Kun Shan University**

崑山科技大學

**International Program of Automation, Internet of Things in Department of Information Engineering**

資訊工程系自動化物聯網國際學生產學合作專班

<b>General Courses</b>	<b>一般課程</b>
Mandarin I	華語(一)
Through self-introduction(name, nationality, identity, hobby), and conversation practice to understand Mandarin in terms of numbers, Taiwan currency, telephone numbers, shopping and basic living language. Will also assist students to pass the A1-level Chinese Language Certificates.	透過自我介紹(名字、國家、身分、興趣),以及會話練習,來針對數字、臺灣貨幣、電話號碼、買東西等生活基本項目進行華語的認識,並輔導華語文 A1 證照。

<b>General Courses</b>	<b>一般課程</b>
Mandarin II	華語(二)
Through advanced daily conversation practices and teaching, students can learn more advanced Mandarin. Students will be tutored to pass the A2-level Chinese Language Certificates.	透過進階的日常生活基本項目,以及會話教學,讓學生進行華語進一步的深入,並輔導華語文 A2 證照。

<b>General Courses</b>	<b>一般課程</b>
Mandarin III	華語(三)
In addition to Mandarin lesson, students will learn reading and basic writing in Mandarin as well to increase the skills in communication in Mandarin.	除了進階的華語教學外,再融入華語閱讀及基礎的華語寫作,以提升同學在透過華語文溝通的能力。

<b>General Courses</b>	<b>一般課程</b>
Basic Chinese Language Speaking(I)	華語口語表達 (一)
Through situated learning with pictures and films to teach students in Mandarin phonetic symbols, pronunciation, and greeting language.	透過平時上課情境、圖片、影片引導的方式,讓同學熟悉國語注音符號與漢語拼音:聲調、發音練習、招呼用語。

<b>General Courses</b>	<b>一般課程</b>
Basic Chinese Language Speaking(II)	華語口語表達 (二)
Through situated learning with pictures and films to teach students in Mandarin living conversation, terms, and pronunciation.	透過平時上課情境、圖片、影片引導的方式,讓同學熟悉進階的華語日常生活用語、用詞與發音。

<b>General Courses</b>	<b>一般課程</b>
Basic Chinese Language Test (TOCFL) Listening & Reading	初階華語文測驗(TOCFL) 聽力閱讀

Through situated learning with pictures and films to teach students in Mandarin living conversation, terms, and pronunciation.	透過平時上課情境、影片引導的方式，提升同學對於華語文基本聽力能力，也採用引導的方式，讓同學可以有基本的華語閱讀能力。
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General Courses	一般課程
History and Culture of Taiwan	台灣歷史與文化
Leading students in understanding Taiwanese ethnic groups, meaning of naming, food culture, taboos, titles, greeting languages and wedding culture and regions.	以生活化的方式，引領同學認識台灣族群種類、姓名命名的意涵、飲食文化與禁忌、人際之間的稱謂、問候用語與情境，以及民族性與婚禮、喜宴文化、宗教等。

Compulsory Courses	專業必修課程
Programming	程式設計
Students learn how to program by C language in this course. We introduce the characteristics and evolution of C language at first, and the keywords of variable declaration, operator, sequential procedure, selection procedure, repeat procedure, structure, enumeration, subroutine. This course is applied some examples or questions to help students to use those keywords to be familiar with the usage.	本課程以 C 程式語言為內容，先介紹 C 語言的特性與演進，接著從變數宣告、運算子、循序流程、選擇流程、重複流程、集合、列舉、函式、指標開始逐一介紹各關鍵字的使用法；並在每次講解完以範例或問題讓同學實際演練熟悉各關鍵字之用法。

Compulsory Courses	專業必修課程
Design of Web and Database	網頁與資料庫設計
The course is combined theory and project realization (e.g. www server set-up, web programming, database, etc.) for promote learning results of students. Furthermore, since the job market changes day after day, the course is to increase the competition capability of students after graduation.	本課程主要結合伺服網頁程式設計之理論實務，包括 WWW 伺服器安裝、伺服網頁程式設計和資料庫等，以提升學生的學習成果；進一步培養學生畢業後之競爭實力以因應職場變遷。

Compulsory Courses	專業必修課程
Application of IOT	物聯網應用實務
This course discusses how to investigate, how to develop and design new products for IoT applications with introducing some practical and innovative examples. Moreover, students will know the market trends of relative products, and how to expand your business of products to whole the world.	以實際的物聯網技術範例，研討如何衍生產品設計並促進創新應用能力。本課程並講解最新產品發展趨勢，以及如何跨國合作。

Compulsory Courses	專業必修課程
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IOT and Big Data	物聯網與大數據
This course is introduced the big data of data processing language for data analysis. This course is combined with case practice and IOT, to help students use a huge amount of data processing methods through practice, knowledge of data read, the concept of measurement. Additionally, the establishment and presentation of the model are given in the talk for interpretation of basic data analysis results.	本課程教導學生結合物聯網的數據及使用巨量資料處理語言進行資料分析，輔以案例實作，幫助學生運用巨量資料之處理方式，經由實作，將認識資料的讀取、概念的測量，模型的建立，並學會基本資料分析結果的呈現與詮釋。

<b>Compulsory Courses</b>	<b>專業必修課程</b>
Project	專題實作
In this course, students will know the important works of each stage of project, their associated documents and the needs of system design. Students will know how to cooperate and finish the project in the project realization process.	本課程將帶領學生總覽整個專題製作過程中，各階段之工作內容重點及相應之專題文件與系統設計上之需求，以期學生得以學會如何運作並落實專題製作之內容。

<b>Compulsory Courses</b>	<b>專業必修課程</b>
Integration of Information and Electrical Engineering	資電整合實務
The course aims to achieve the teaching objectives by introducing practical examples of practical integration of Information techniques and Electrical techniques.	課程中主要藉由介紹實務上資電整合的實際相關範例，來達成讓學生瞭解如何整合資訊與電機的技术。

<b>Compulsory Courses</b>	<b>專業必修課程</b>
Applications of Embedded System	嵌入式系統應用
This course is aimed at the basic programming skill for the drivers of the peripheral I/O devices in embedded systems. In addition, this course supplies the compilation procedures of bootloader and embedded operating system to help the students build a complete embedded system.	透過嵌入式系統裝置中常用的週邊輸出入單元基本驅動程式的編寫訓練，學習啟動載入程式與嵌入式作業系統的編譯連結及建置一完整嵌入式系統裝置。

<b>Compulsory Courses</b>	<b>專業必修課程</b>
Field Practice	校外實習
1.Understand the company culture and the workflow. 2.Cultivate ethics in career, attitude towards work, and interpersonal relationship.	1. 公司文化與工作流程之瞭解 2. 職場倫理、工作態度與人際關係之養成 3. 學習實習機構之生產技術和管理 4. 期末報告與檢討

3.Learn the production and management techniques for the practical training organization.	
4.Final report and self-criticism."	

Selective Courses	專業選修課程
Applications of Single Chip and bluetooth	單晶片與藍芽之應用
The course is to familiarize the students with single chip hardware architectur. The laboratory practices enhance the hands-on experiences of the manipulation of single chip and Bluetooth and its application ability.	本課程主要使學生熟悉單晶片硬體結構，並以實驗課撰寫程式語言，加強學生單晶片實作之技能與其結合藍芽溝通之應用能力。

Selective Courses	專業選修課程
Introduction of Embedded System	嵌入式系統導論
This course is aimed at the basic training of the applications of embedded system. It includes functions of embedded systems and integrations of computation and services.	此課程主要訓練學生進行嵌入式系統的基本應用，培養基本組成架構與各單元間如何結合與相互作用，產生強大的運算與服務能力之認識。

Selective Courses	專業選修課程
Introduction and Practice of Artificial Intelligence	人工智慧概論與實務
1. Search Methods: Heuristic Search, Adversarial Search, etc. 2. Knowledge Representation and Expert Systems: Logic and Production Rules, Semantic Net and Frame 3. Machine learning: Probabilistic Reasoning and Bayesian Belief Networks, Hidden Markov Models, Graphical Models, Neural Networks, Genetic Algorithms 4. Natural Language Understanding	1. 搜尋方法: 啟發式搜尋, 對抗式搜尋等 2. 知識表示法與專家系統: 邏輯與生成規則、語意網絡與框架 3. 機器學習: 機率性推理與貝式信念網絡, 隱式馬可夫模型, 圖型化模型 '類神經網路、基因演算法 4. 自然語言之理解

Selective Courses	專業選修課程
Electronics and the Practice	電子電路與實習
This course introduces the property and applications of microelectronic circuit. Moreover, practice of circuits and circuits design are applied to promote the technology of students and increase their experience of microelectronic circuit.	讓學生擁有基本的電子學知識，以實作的方式加強印象，並透過實驗，使學生了解一些電子電路的應用。

Selective Courses	專業選修課程
Information Security	資訊安全實務

<p>1. Security policy and assessment</p> <p>2. System security: account management, resource access control, file security, principle and prevention of malware, vulnerability-scan, etc.</p> <p>3. Cryptography and cryptanalysis: essence of security, encryption and decryption, hash method, internet key exchange, public key system, digital certificate management system.</p> <p>4. Network security: Router security, zone-policy firewall, intrusion detection and prevention systems, switch and wireless network security, virtual private network, appliance firewall."</p>	<p>1. 安全政策與安全評估</p> <p>2. 系統安全：帳號管理、資源存取控制、檔案安全、惡意軟體之原理與防治、弱點掃描與漏洞修補、監控與稽核</p> <p>3. 密碼學：安全要素、加解密法、雜湊法、金鑰交換、公鑰系統、數位憑證管理系統</p> <p>4. 網路安全：路由器安全、區段政策防火牆、入侵偵測與入侵防護系統、交換機與無線網路安全、虛擬私有網路、專用防火牆</p>
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Selective Courses	專業選修課程
Integration of Smart machine	智慧機械整合技術
This course includes image models, object detection and recognition to grouping and searching image content. Integration of Smart machine contains a mix of programming, modeling, and mathematics and practices.	智慧機械整合技術內容相當廣泛，包括圖像模型、目標檢測與識別，以及圖像內容的分組與搜索等。課程混合了程式設計、數學技巧和實務操作。

Selective Courses	專業選修課程
Industrial management	工業管理
This course focuses the introduction of industrial management. It will help students to understand the applications and importance of industrial management and enterprises.	針對工業管理的主要領域作全面的重點性介紹，讓修課同學可瞭解工業管理與企業中的應用和重要性。

Selective Courses	專業選修課程
Cyber-Physical System	虛實整合技術
Students will realize the structure and operation of the CPS system, the role of CPS in Industry 4.0, the concepts and methods of CPS design and development in this course. Practical cases are applied to help students know its applications.	本課程使學生認知 CPS 系統架構與運作方式、CPS 在工業 4.0 中所扮演的角色、CPS 設計與開發的概念與方法，利用實務案例分享，讓同學更瞭解其應用。

Selective Courses	專業選修課程
Corporate Internship (I)	企業實習一
<p>1. Cultivate ethics in career, attitude towards work, and interpersonal relationship.</p> <p>2. Learn the production and management techniques for the practical training organization.</p>	<p>1. 職場倫理、工作態度與人際關係之養成</p> <p>2. 學習實習機構之生產技術和管理</p> <p>3. 實務操作演練與現場問題提出</p> <p>4. 實務操作演練與現場問題確認</p>

<p>3. Practice, drill and find questions.</p> <p>4. Practice, drill and acknowledge the questions.</p> <p>5. Practice, drill and investigation into the real questions.</p> <p>6. Propose suggestions to the real questions.</p> <p>7. Feedback and experience sharing in the final term."</p>	<p>5. 實務操作演練與現場問題改善建議擬定</p> <p>6. 提出現場問題改善建議</p> <p>7. 期末回饋與分享</p>
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<p><b>Selective Courses</b></p>	<p><b>專業選修課程</b></p>
<p>Corporate Internship (II)</p>	<p>企業實習二</p>
<p>1. Cultivate ethics in career, attitude towards work, and interpersonal relationship.</p> <p>2. Learn the production and management techniques for the practical training organization.</p> <p>3. Practice, drill and find questions.</p> <p>4. Practice, drill and acknowledge the questions.</p> <p>5. Practice, drill and investigation into the real questions.</p> <p>6. Propose suggestions to the real questions.</p> <p>7. Feedback and experience sharing in the final term."</p>	<p>1. 職場倫理、工作態度與人際關係之養成</p> <p>2. 學習實習機構之生產技術和管理</p> <p>3. 實務操作演練與現場問題提出</p> <p>4. 實務操作演練與現場問題確認</p> <p>5. 實務操作演練與現場問題改善建議擬定</p> <p>6. 提出現場問題改善建議</p> <p>7. 期末回饋與分享</p>