112 學年度第 1 學期第 1 次 校課程委員會議

提案傳閱附件　　目錄

傳閱附件 1-1--本校各單位、學院所屬各系(所)課程中英文摘要-語言中心

一、 語言中心

英語旅遊新聞與旅行書寫 2 選

本課程引領學生參與國際場合/活動和接觸不同文化。學生透過聚焦現代旅遊寫作和運用各式媒介（包含評論、部落格、導覽手冊、旅遊小說）習得如何理解和產出批判性、描述性文本。學生能從全球各式正式和非正式文章、音檔和影片，提升英語單字量和聽讀能力，並認識不同寫作風格和技巧。

English Travel Writing and Journalism 2 E

This course prepares students to use English to actively and critically engage with international places, events, and cultures. With a specific focus on contemporary travel writing, students will utilise a variety of mediums, including: reviews, blogs, tourist guides, and travel fiction, to learn the skills to understand and produce critical and descriptive works. Students are required to engage with formal and informal texts, as well as audio and video resources from around the world to build a wider vocabulary, improve reading and listening comprehension, and develop an appreciation for different writing styles and technique.

英語職場溝通與技巧 2 選

本課程旨在培養學生在專業英語語言環境中進行討論、辯論與簡報時的信心、技能和策略。鼓勵學生使用適當且正式的英語表達個人觀點、發表資訊並參與辯論。本課程以循序漸進的方式介紹了工作場所環境中常見的一系列主題和情況。課程將在低壓互動空間中舉行，旨在最大限度地提高互動和學生的參與。學生應回答問題、討論、小組合作及製作正式簡報，將個人經驗和觀點融入簡報內容內，使用新的詞彙和短句以專業的方式進行交流。

English Workplace Communication and Presentation 2 E

This course focuses on developing confidence, skills, and strategies to discuss, debate, and present in a professional English language environment. Course content is designed to encourage participants to express personal opinions, present information, and engage in debate using appropriate and formal English. Through a step-by-step approach, the course introduces a range of topics and situations common to a workplace environment. Classes will be held in a low-pressure, interactive space designed to maximize interaction and student engagement. Students are expected to answer questions, discuss, work in groups, and produce formal presentations integrating individual experiences and points of view within presented structures and formats, as well as applying new vocabulary and phrases to communicate in a professional manner..

學術英語寫作與發表 2 選

本課程以學士、碩士和博士學生為主，將提供撰寫英文期刊文章和學術研討會研究論文。課程內容旨在幫助學生理解出版和發表簡報形式、結構和學術語言。上課使用學術期刊及出版品為教材，並提供關於正式簡報書面格式及口頭發表的技巧。學生

將習得學術研究過程，訂定研究題目、文獻討論、研究設計、結果評估及研究結果討論。學生需於期末時完成一份符合研究期刊出版標準的作品並以口頭和書面形式發表其研究方法、發現和討論。

Academic English Writing and Presentation　2　E

Targeted to towards higher level BA, MA and Ph.D. students, this course focuses on developing high level English language research papers for journal articles and academic conferences. The course content is designed to assist in the understanding of the forms, structure, and language expected for publication and public presentation. Using a variety of academic publications from respected journals, students will be guided through the requirements for presenting research in written and oral forms. Materials will be structured to meet the needs and expectations of the respectable fields of each student. Following academic conventions for high-quality scientific research, participants will be taught how to frame research, produce literature reviews, research designs, evaluation of results, and discussion of the implications and applicability of research findings. Students are expected to develop individual research agendas, present approaches, findings and discussions in both oral and written form. By the end of the course each student will be expected to have produced a finished work meeting the publication criteria of high-quality research journals.

進階英語口說訓練　　2　選

本課程旨在教導學生如何準備國際英語能力考試的口語訓練，使學生了解英語考試的應考流程、解答策略與技巧。該課程以將來預計出國留學或申請海外工作的學生而設計，以多益、雅思及托福考試內容為主，提供不同種類的考題，使學生準備合乎其考試內容必要的技巧與考試策略。在課堂中，每位學生將完成多益、雅思及托福考試的模擬考題。

English Speaking for Exams　　2　E

This course aims to instruct and prepare students for the speaking section of the most prominent internationally recognized English proficiency exams. The course content is designed to assist students in understanding the structure, strategies and skills required for higher level English language exams. Designed for students expecting to continue their studies abroad, or apply for jobs overseas, the course will be structured to give students the necessary information and practice to perform to the best of their abilities. Following the outline of TOEIC, IELTS and TOEFL proficiency exams, each style of question will be presented and students prepared with the necessary skills and strategies to meet the requirements. During the course, time is allocated to allow all students to practice each part of the respective exams independently and experience the full exam format.

日語會話_流行音樂篇　　2　選

本課程指導學生透過日語歌曲賞析，認識日本流行音樂和不同年代的日語歌曲，學習日語表達，藉以提升日語理解能力與聽力，進一步了解歌曲創作之背景及所傳達之意境，同時也促進對於日本文化之理解。

課程針對所使用之歌曲內容編寫教材，指導文字語彙並進行中日文對譯，同時透

過日文歌曲加強口語表達及聽力練習，促使學生具備所學日語之應用能力。

本課程適合具五十音發音基礎，想訓練口語能力同時理解日本社會文化的同學選修，亦歡迎同時選修多門日文課程，以加強對日語口語表達之掌握。

Learning Japanese with J-pop 2 **E**

Japanese song appreciation. Through Japanese pop music, singing programs, and other Japanese songs from different eras, we can learn Japanese expressions, improve our Japanese listening and comprehension skills, and further understand the mood conveyed by the songs.

This course instructs students to gain an understanding of Japanese pop music, singing programs, and Japanese songs from different eras through the analysis of Japanese songs. By doing so, students will learn Japanese expressions to enhance their Japanese comprehension and listening skills. Furthermore, it provides further insight into the background of song composition and the conveyed emotions, while also fostering a deeper understanding of Japanese culture.

旅遊泰語會話 2 **選**

旅遊泰語會話課程，主要是教學泰語子音、長短韻母以及聲調之發音方 法，對外國人採用英文音標拼音進行泰語教學，講解與分析中文與泰文不同 發音之處。本課程旨在透過講授泰語單字之涵義，分析如何正確應用泰語語 法，以及泰語句型等練習方式，使學生正確了解基本的發音方法，應用於生 活，而具有泰語旅遊相關基礎之會話能力。此課程能夠提升學生外語能力， 並透過此課程發展學生之多元價值觀。

Thai for Tourism 2 **E**

Thai for tourism. A basic pronouncing Thai consonants, vowels, and tone marks by using English language to help foreign students study Thai language easier. Students could understand the difference of pronunciation between Chinese and Thai language. In this course, students would know Thai vocabularies and Thai grammar for practicing listening and speaking skills. In addition, students will learn about making Thai conversational sentences to apply in their daily life which enhances the ability of the third language and the job opportunity for students. And yet to open students' eyes to learn new thing.

傳閱附件 1-2--本校各單位、學院所屬各系(所)課程中英文摘要-農學院

二、 農學院

(一) 農學院：

健康水環境與水質管理　　3　選　　楊州斌

近年來受全球氣候變遷影響，極端降雨誘發乾旱與洪水事件頻傳，臺灣地區面臨著水資源供應調 配與開發新興公共用水等課題。本課程之目的，在使學生了解健康流域的內涵，包括水資源、水污染、 及水生態彼此關聯性，特別是污染物進入自然水體之過程及其對水質與生態所造成之影響，以期對污 染物在自然水體之宿命(fate)及傳輸(transport)情形有更進一步的認識，並利用實測的水文、水質資料 作為污染源總量管制與水質預測的依據。在水量、水質兼顧下，提升國內水資源利用與水質的健康度， 邁向永續健康水環境，本課程對應 SDGs 2、6、12、13 之聯合國永續發展目標。

Healthy Water Environment and Water Quality Management　3　E　Chou-Ping Yang

Taiwan is facing issues such as water resource allocation and development of new public water due to affect by global climate change in recent years, resulting in extreme rainfall triggers frequent droughts and floods. The purpose of this course is to enable students to understand the connotation of healthy river basins, including the interrelationships between water resources, water pollution, and aquatic ecology. More importantly, the process of pollutants entering natural water bodies and their impact on water quality and ecology which have a further understanding of the fate and transport of pollutants in natural water bodies. And use the measured hydrological and water quality data as the basis for total maximum daily loads (TMDLs) and water quality prediction. Under the balance of water quantity and water quality, improve the domestic water resource utilization and water quality health and towards a sustainable and healthy water environment. This course corresponds to the United Nations Sustainable Development Goals of SDGs 2, 6, 12, and 13.

可可產業夥伴關係建構及交流　　1　選　　邱秋霞、劉展冏、許祥純、柯瑞慶

學生專業核心能力之養成與學習目標：

1.鏈結在地可可農場莊園參觀與見習，使學生了解可可產業。

2.藉由實地參觀及見習在地可可農場莊園，以了解巧克力加工技術之商業端。

3.了解可可產業之國際趨勢發展。

藉由實地參訪誘導學生關注可可產業，成為產業支持者。

Establishing Partnerships and Communications on Cocoa Industry　1　E

Chiu-Hsia Chiu, Chan-Chiung Liu, Shyang-Chwen Sheu, Jui-Ching Ko

Development of Students' Professional Core Competencies and Learning Objectives:

1.Visit and intern at local cocoa farms to help students understand the cocoa industry.

2.Acquire practical knowledge concerning the commercial aspects of chocolate processing technology through on-site visits and internships at local cocoa farms.

3.Understand the international trends and developments in the cocoa industry.

4.Encourage students to become advocates and supporters of the cocoa industry through on-site visits

(二) 食品科學系

人工智慧化的食品安全管理(遠距教學)　　2　選　　劉展冏

本課程創新將食品安全與時下最流行的人工智慧銜接，提供學生一個未來更安全的食

品藍圖，在現有的科技技術支持下學習本課程擴展視野，構思出未來食品安全之方向．課程前半將介紹如何利用感測器在食品製造各階段與後市場端執行偵測，而取得數據，這數據以電腦計算加以分類，搭配人工智慧的方式可以執行預測、預警、自動化等應用，如：結合物聯網應用於食品產銷履歷、供應鏈自動管理、與食品安全預警等，訓練學生應用於食品產業中會遇到的各種狀況．而食品安全管理是建立在風險評估的基礎上，因此在課程後半會導入風險評估於食品安全管理之應用，針對風險評估、膳食調查等龐大數據，利用大數據與人工智慧運算分析，可以更快速地得到許多重要的參數如：食品殘留容許量、建議每日攝取量、毒性當量等，用以建立食品安全管理基礎。

Artificial Intelligence and Food Safety　　2　E

This course innovatively connects food safety with the most popular AI nowadays, providing students with a blueprint for safer food in the future. With the support of existing science and technology, students can learn this course to expand their horizons and conceive the direction of future food safety. The first half of the course will introduce how to use sensors to perform detection at various stages of food manufacturing and the after-market to obtain data. This data is classified by computer calculations and can be used with artificial intelligence to perform prediction, early warning, automation and other applications, such as : Combined with the application of the Internet of Things in food production and sales history, automatic supply chain management, and food safety early warning, students are trained to apply it to various situations encountered in the food industry. Food safety management is based on risk assessment, so the application of risk assessment in food safety management will be introduced in the second half of the course. For huge data such as risk assessment and dietary surveys, big data and artificial intelligence calculation and analysis can be used to more accurately Quickly obtain many important parameters such as: food residue tolerance, recommended daily intake, toxic equivalent, etc., to establish the basis for food safety management.

國際行銷與跨域創業(遠距教學)　　2　選　　劉展岡

面對日趨複雜的行銷環境，無論是 B to B 或 B to C 的市場，行銷方式變化多端，新的行銷策略不斷地在市場上出現，創業者如何釐清跨域行銷問題的真相，避免掉入銷售惡性競爭的陷阱，是當前重要課題。故本課程結合前期計畫中的校內創新創業機制、區域及國際行銷管理與跨域創業之基礎及進階課程，以培育生技產業跨領域創新創業人才。課程涵括有創業所需之智財專利、技術鑑價、行銷、市場、財務、人才管理及風險評估等九大領域課程。

International marketing, Interdisciplinary and Entrepreneurship　　2　E

In the face of an increasingly complex marketing environment, whether it is a B to B or B to C market, the marketing methods are changing, and new marketing strategies are constantly appearing in the market. How can entrepreneurs clarify the truth of interdisciplinary marketing problems and avoid them Entering the trap of vicious competition in sales is an important issue at present. Therefore, this course combines the on-campus innovation and entrepreneurship mechanism, regional and international marketing management, and the basic and advanced courses of cross-domain entrepreneurship in the previous plan to cultivate interdisciplinary innovative and entrepreneurial talents in the biotechnology industry. The course covers nine major fields including intellectual property patents, technology appraisal, marketing, marketing, finance, talent management and risk assessment required for entrepreneurship.

飲食產業與健康促進　　2　選　　羅之綱

現代人對於飲食除基本生理需求，更進一步希望食品能夠朝向精緻化及健康化，並開始注意食品中之成分是否會對人體造成傷害或增進人體之強健。此課程包含營養、保養及修養等講授課程，加強學生對於健康養生觀念及未來相關飲食產業與健康產業發展，增進學生對於兩項產業的深入瞭解。

Food Industry and Health Promotion　　2　E

In addition to the basic physiological needs of the diet, modern people further hope that the food can be refined and healthy, and start to pay attention to whether the ingredients in the food will cause harm to the human body or improve the health of the human body. This course includes lectures on nutrition, maintenance and self-cultivation to strengthen students' concept of health preservation and the development of related catering industry and health industry in the future, and enhance students' in-depth understanding of the two industries.

食品安全風險分析特論及實習　　3　選　　羅之綱

本課程的目的是介紹經營管理者進行食品安全風險分析所涉及的工作流程，並向學生提供有關進行風險評估、風險管理和風險溝通的方法及過程，以及了解影響決策考量和結果效益的因素,該課程旨在讓學生熟悉風險管理和溝通風險的主要方法, 並以實際的案例進行說明。

Special Topics and Practicum in Food Safety Risk Analysis　　3　E

The objective of this course is to acquaint business managers with the workflow involved in conducting food safety risk analysis. It aims to provide students with methods and processes related to risk assessment, risk management, and risk communication. Additionally, it aims to help students understand factors that influence decision-making considerations and outcome benefits. The course is designed to familiarize students with key approaches to risk management and risk communication, using practical case studies for illustration.

食品詐欺與食品防護特論　　3　選　　羅之綱

近年食品安全管理體系已從處理和預防意外事件造成的健康傷害和品質缺失，進一步關注到有意的攙偽假冒和惡意破壞行為，這些行為更多的造成了社會信任傷害。本課程提供案例研究，以預防食品免受由生物，化學，物理或放射性物質，造成的有意污染或蓄意摻假傷害。本課程目的，是透過方法和流程來指導學生，如何改進供應鏈的食安管理措施，以提高對食品欺詐和恐怖行為的抵禦能力。

Special Topics in Food Fraud and Food Protection　　3　E

In recent years, the food safety management system has evolved from addressing health injuries and quality issues caused by accidental incidents to a deeper concern for intentional adulteration, counterfeiting, and malicious tampering, which predominantly result in damage to social trust. This course provides case studies aimed at preventing intentional contamination or deliberate adulteration of food by biological, chemical, physical, or radiological agents. The objective of this course is to guide students through methods and processes to enhance food safety management measures within the supply chain, thereby increasing resilience against food fraud and malicious activities.

食品安全法規特論　　3　選　　羅之綱

本課程先由法律學基本概念開始，讓學生瞭解民主國家的法制精神與框架。之後介紹

國際食品衛生安全規範體系，包括中國大陸、美國和歐盟的食安法規、WTO 要求、食品安全風險管理要素，進一步再說明我國食安法之沿革和管理要點、特定食品管理機制包括基因改造、標示、追蹤追溯、詐欺、輸出入食品管制等。重點在比較檢視我國食品安全管理法規及措施與國際上主要國家規範之符合性。藉以檢視我國現有食品管理安全法規與措施、探討其合適性和不足處，進而思考我國對在食品安全法規的管理落差及應對能力、以期達到與國際法規接軌之目的。

Special Topics in Food Safety Regulations　　3　　E

This course begins with an introduction to basic legal concepts, enabling students to understand the legal spirit and framework of democratic nations. Subsequently, it introduces the international food safety regulatory system, including food safety regulations in mainland China, the United States, and the European Union. It covers WTO requirements and elements of food safety risk management. Furthermore, it explains the evolution and key points of food safety laws in our country, as well as specific food management mechanisms such as genetically modified organisms, labeling, traceability, fraud, and import/export food controls.

The emphasis is on comparing and examining the alignment of our country's food safety regulations and measures with major international norms. This serves to evaluate the appropriateness and shortcomings of our current food management safety regulations and measures, while considering the disparities and response capabilities in our country's food safety regulatory management. The ultimate aim is to foster alignment with international regulations.

食源性疾病流行病學特論　　3　　選　　羅之綱

本課程將介紹典型的流行病學概念，並應用公共衛生學的原理來預防微生物引起的食源性疾病。透過一系列學理、案例和統計學的方式，了解並解決具有類似特性的各種食品安全問題。各章節將介紹多年來各種傳染病、食源性疾病和慢性病的演變和監測管理，並使用流行病學的研究方法來控制食品安全相關的健康危害。

Special Topics in Foodborne Disease Epidemiology　　3　　E

This course will introduce fundamental epidemiological concepts and apply principles of public health to the prevention of microbial-induced foodborne diseases. Through a combination of theoretical learning, case studies, and statistical approaches, students will comprehend and address various food safety issues with similar characteristics. Each chapter will explore the evolution and surveillance management of infectious diseases, foodborne illnesses, and chronic diseases over the years. Epidemiological research methods will be utilized to control health hazards related to food safety.

農水產品產銷履歷與流通特論　　2　　選　　羅之綱

1980 年代以來，各國先後爆發了重大農產品食品質量安全事故，由此引發了公衆對農產品食品質量和安全性的憂慮和恐慌。爲此，這些國家陸續開展農水產品食品追溯體系建設，並在法律法規體系、技術支持體系等方面有很大的進步。建立和發展農水產品質量安全追溯體系可以促進農業現代化、保障食品質量安全和公眾的健康。同時也可以落實政府農水產品食品安全監管責任。使用資訊科技提高農業現代化，促進傳統農業向資訊農業、智慧農業的轉型升級，促進農業供應面、流通面和消費面全面性的結構調整。

本課程結合學術性、理論性和應用性，深入且系統的講解食品物流理論知識、現代物流資訊技術、食品供應鏈管理、食品安全採購與庫存管理、食品運輸與配送、第三方物流、電子商務及食品物流設施及冷鏈等內容。以現代食品物流管理結合食品安全追溯的實際需

要，同時分析了國內外食品物流管理的案例，使學生能同時掌握食品物流學和食品追溯的知識體系，培養學生初步具備分析和解決物流領域問題的思維方式與能力，以帶動食品行業的發展，進而確保食品安全。

Special Topics in Agricultural and Aquatic Product Traceability and Distribution　2　E

Since the 1980s, significant agricultural and food product quality and safety incidents have occurred in various countries, triggering public concerns and panic regarding agricultural and food product quality and safety. In response, these countries have successively initiated the construction of agricultural and aquaculture product traceability systems, making considerable progress in legal frameworks, technical support systems, and more. Establishing and developing traceability systems for agricultural and aquaculture products can promote agricultural modernization, ensure food quality and safety, and safeguard public health. It also serves to implement government responsibilities for regulatory oversight of agricultural and aquaculture product food safety. Utilizing information technology enhances agricultural modernization, facilitates the transformation and upgrading of traditional agriculture into information-based and smart agriculture, and drives comprehensive structural adjustments in agricultural supply, distribution, and consumption.

This course combines academic, theoretical, and applied approaches to provide in-depth and systematic explanations of food logistics theory, modern logistics information technology, food supply chain management, food safety procurement and inventory management, food transportation and distribution, third-party logistics, e-commerce, as well as food logistics facilities and cold chain. Integrating modern food logistics management with the practical requirements of food safety traceability, the course also analyzes domestic and international cases of food logistics management. This equips students with a comprehensive understanding of both food logistics and traceability, cultivating their ability to analyze and solve logistics-related issues and contributing to the development of the food industry, thus ensuring food safety.

高階工廠管理特論及實習　　3　選　　羅之綱

本課程由食品安全管理的觀點和角度，來探討如何進行食品工廠經營管理，建立觀念並貫穿整個課程，介紹食品工業之結構及控管流程，使學生瞭解食品工廠之硬體要求、以及軟體之基本管理原理、管理單元及各種作業流程。課程內將簡介國內各種食品認證制度，並介紹食品 GHP、CAS 等制度及如何應用 5S 運動於工廠管理上，使學生對於生產衛生安全食品之良好作業規範有更進一步認知，瞭解食品工廠之軟硬體之要求、管理與運作及如何建立自主管理體系，避免人為疏忽及確保產品之衛生安全及品質之穩定，提升工廠之水準及信譽。

Advanced Factory Management: Special Topics and Practicum　　3　E

This course approaches the management of food factories from the perspective of food safety management. Throughout the entire curriculum, it aims to establish concepts and principles that are integral to food safety. It introduces the structure and control processes within the food industry, enabling students to understand the hardware requirements of food factories as well as the fundamental principles of software-based management, management units, and various operational processes. The course will provide an overview of various domestic food certification systems and introduce systems such as Food GHP and CAS, along with how to apply the 5S methodology to factory management. This allows students to gain a deeper understanding of proper operational standards for producing hygienic and safe food, comprehending the hardware and software requirements of food factories, management and operations, and how to establish autonomous management systems. This, in turn, helps prevent human negligence,

ensures product hygiene, safety, and stable quality, and elevates the level and reputation of the factory.

食安成本管理及個案研究　　2　選　　羅之綱

食品生產的品質問題是管理問題，又是經濟問題，品質經濟分析和管理是一個企業品質經營追求成功的重要因素。有效實施品質成本和食安成本管理，將推進企業提高品質和管理效能，降低潛在的食安風險。在當前市場競爭異常激烈的今天，對企業減少浪費，降低成本，增加食安保障，提升企業的競爭力，贏得企業和顧客共同利益都具有重要意義。

品質成本是指取得和保證滿意的品質所需的費用，也關聯到是否能夠確保可容忍的食安風險。在目前大部分的企業中占到總成本的 20-30%。這對企業效益和社會效益的增長造成嚴重的威脅，也是當前企業品質管理中的關鍵。

本課程著重于建立食品生產、服務和管理流程，構建食安成本的框架等內容、收集數據、核算品質成本、形成品質成本測量分析報告等環節的案例分析，將使學生對品質經濟性管理和食安成本的基本概念中，有關品質成本的分類、模型、分析指標以及構成要素有全面的理解。通過實施食安與品質成本體系，在品質改進規劃中應用和減少品質成本，幷發揮品質成本的作用。同時，可將其作爲品質改善的切入點，組建團隊、確立項目、組織實施、取得績效，創造顧客和企業的共同價值。

Food Safety Cost Management and Case Studies　　2　E

Quality issues in food production are not only management problems but also economic ones. Quality economic analysis and management are crucial factors for successful quality operation in a business. Effectively implementing quality cost and food safety cost management will drive businesses to enhance quality and management efficiency while reducing potential food safety risks. In today's highly competitive market, reducing waste, lowering costs, enhancing food safety assurance, and increasing business competitiveness hold significant importance for both the company and its customers.

Quality cost refers to the expenses required to achieve and ensure satisfactory quality, and it's also related to the ability to ensure acceptable food safety risks. In most businesses, it accounts for 20-30% of total costs, posing a serious threat to both business and societal benefits, and it's a key aspect of current quality management in enterprises.

This course focuses on establishing food production, service, and management processes, constructing the framework for food safety costs, collecting data, calculating quality costs, and forming analysis reports. Through case studies, students will gain a comprehensive understanding of fundamental concepts in quality economics management and food safety costs. This includes the classification, models, analysis indicators, and components of quality costs. By implementing a food safety and quality cost system, this course applies and reduces quality costs in quality improvement planning, leveraging the role of quality costs. Simultaneously, it serves as a point of entry for quality improvement, assembling teams, defining projects, organizing implementation, achieving results, and creating shared value for both customers and businesses.

危機溝通與媒體關係特論　　3　選　　羅之綱

本課程主要介紹媒體公共關係在危機與議題管理中所扮演的角色，以及議題管理與危機管理的界定及關聯性說明。課程核心內容包含議題管理與危機管理的相關策略及理論，以及企業、政府與相關組織機構運用議題與危機管理知識，特別針對傳統媒體與網路新媒體的差異，研討食品安全危機發生時解決問題的實際案例與說明。

Special Topics in Crisis Communication and Media Relations　　3　E

This course mainly introduces the role of media public relations in crisis and issue management, as well as the definition and relevance of issue management and crisis management. The core content of the course includes the strategies and theories related to issue management and crisis management, as well as the application of issue and crisis management knowledge by enterprises, governments and relevant organizations, especially in view of the differences between traditional media and new Internet media, to discuss the actual cases and explanations of solving problems when food safety crisis occurs.

食品安全管制系統特論及實習　　3　選　　羅之綱

本課程適合對食品安全管制系統已有基本觀念的同學修讀，以成為 PCQI 預防性控制人員、ISO22000 主導稽核員為目標，進一步深入了解食品安全管制系統之應用和實務。課程將先簡單回顧國際食品法規和食品安全管理體系、GHP、HACCP、製程管制、線上監測、品質控制等技術，以及計畫書建立、程序書撰寫、施行步驟、內部稽核、矯正措施及實務演練。再進一步從外部驗證機構的稽核人員角度出發，如 ISO2200/FSSC22000/SQF 等驗證體系，讓學生充分認識及熟練食品危害分析與重點管制系統之實務應用，透過案例講解和討論，強化學生進入職場擔任食品品質保證和食品安全管理人員的能力。

Special Topics and Practicum in Food Safety Control Systems　　3　E

This course is designed for students who already have a basic understanding of food safety management systems and aim to become Preventive Controls Qualified Individuals (PCQI) or lead auditors. The course offers a deeper insight into the application and practical aspects of food safety management systems. It will begin with a brief review of international food regulations and food safety management systems, covering topics such as GHP, HACCP, process controls, online monitoring technologies, as well as aspects like developing plans, writing procedures, implementing steps, conducting internal audits, applying corrective actions, and practical exercises.

Subsequently, the course will explore the subject from the perspective of audit personnel from external verification bodies, such as ISO 22000, FSSC 22000, SQF, and other verification systems. This approach aims to provide students with a comprehensive understanding and proficiency in practical applications of food hazard analysis and key control systems. Through case explanations and discussions, the course seeks to enhance students' capabilities to enter the workforce as personnel responsible for food quality assurance and food safety management.

食品安全檢測技術與實習　　3　選　　龔得安

本課程使學生瞭解當代食品儀器分析技術之基本工作原理，特性，儀器設計及應用，以便日後應用在食品分析與安全相關領域之研究。儀器包括紫外光可見光光譜儀，螢光光譜儀，原子吸收光譜儀，感應耦合電漿光譜儀，質譜儀，質譜串聯術，色層分析，新穎萃取技術等。

Technique of Food Safety Inspection and Practice　　3　E

The course aims to study the instrumental analytical methods of foods. The food analysis course includes the spectrometric method, atomic absorption/emission spectrometry, molecular absorption spectroscopy, mass spectrometry, chromatography, extraction method, etc.

食品毒物化學與實習　　3　選　　龔得安

本課程以深入淺出方式講解以培養同學對於食品毒物化學之相關知識與能力。課程內

容以食品中有毒化學物質之化學結構與特性為主，其包含動物性食品中的天然毒素、毒性植物化學物質、食品中的真菌毒素、工業環境的食品汙染、農藥化學物質、食品加工生成危害物質以及具食安風險疑慮化學物質等。課程也安排修課同學分組討論暨報告相關食品毒性物質與食安事件之發生。讓同學具備食品安全與毒化物質議題之判斷能力，熟悉以食品安全相關專業知識解決所面對的議題。

Food Toxicants Chemistry and Practice　　3 E

This course uses in-depth explanations to cultivate students' fundamental understanding of food toxicant chemistry. The objective of the course is to introduce the chemical structures and characteristics of toxic chemicals in food, including natural toxins in animal foodstuffs, toxic phytochemicals, toxins from fungi, food contaminants from industrial waste, pesticide residues in foods, toxicants formed during food processing, and substances of concern for food safety risks. The course also arranges for students to discuss and report on food toxic substances and food safety incidents in groups. Through this, students can understand food safety and toxicant chemistry, and become adept at solving problems using knowledge in food safety.

食品科學海外專業實習　　2　選

選送學生赴國外機構進行實習，以加強專業知識，擴展國際視野及增進外語溝通能力。

Career Training of Food Science on Overseas Institute　　2 E

The students will have internship training at overseas institute. During the training, the students will enhance their background knowledge of food science, broaden their global vision and improve their communication ability.

食品安全特論　　2　選

本課程整合食品科技與管理實務，導入食品安全之最新觀念，講授食品衛生與安全基礎知識、食品原料、製程及物流等管理，及食品衛生標準與安全容許量制定。本課程除講授現代食品檢測技術之概念、風險評估之應用及食品供應鏈與產銷體系管理之發展。本課程亦包含 WTO 協定及區域整合下之食安管理、近年國際間重大食品安全事件研析及主要貿易夥伴之食安管理發展等。經由此課程，可提升學員在食安管理之專業知識與實務能力。

Special Topic in Food Safety　　2 E

This course introduces the new concepts of food safety, fundamental knowledge on food hygiene and safety, management for food materials, manufacturing and logistics, and establishing procedure for food standards and maximum residue levels. This course provides the modern food testing technology, the application of risk assessment, the development of food supply chain, production and marketing management. This course also includes international food safety management under WTO Agreements and regional integration, recent global food safety incidents and development of food safety management in major trading partners. Participants are able to enhance their professional knowledge and capability in practical food safety management from this course..

(三) 木材科學與設計系：

社區設計(微型課程)　　1　選　　侯博倫

透過與社區對話，培養同學的溝通能力，同時激發他們對一名良好公民應具備的態度，

以及對當地文化的關心。同時，我們也將強調對當地議題提出問題解決方案和計劃執行的能力。透過建構獨特的社區特色模式，協助社區產業發展。這一過程將有助於提升同學的身心素質、溝通表達能力以及團隊合作技巧。

Community Design 1 **E**

Through engaging in dialogue with the community, we aim to cultivate students' communication skills while igniting in them the qualities of a responsible citizen and a genuine appreciation for local culture. Additionally, we emphasize their ability to propose solutions to local issues and execute plans effectively. By constructing a unique community-centric framework, we assist in the development of local industries. This entire process not only serves to improve students' physical and mental well-being but also enhances their communication and teamwork skills.

參數式電腦輔助設計(微型課程) 1 **選** **侯博倫**

通過 GH（Grasshopper）的學習，學生可以系統地分解和重組各種問題，培養系統性思維。 他們將每個參數轉化為視覺表現的基本元素，並不斷調整它們以產生新的變化。 這種學習理念還可以幫助學生在概念之間進行轉換，使他們的思維更加動態和敏捷。

GH 學習促進問題的結構化分解，從而實現系統思考。 它將參數轉換為基本圖形元素，不斷調整以產生新穎的變化。 這種學習方法還有助於學生在概念之間轉換，激發他們的思維過程。

Parametric Computer-Aided Design 1 **E**

Through learning with GH (Grasshopper), students can systematically break down and reassemble various problems, fostering systematic thinking. They transform each parameter into fundamental elements of visual representation and constantly adjust them to generate new variations. This learning concept also aids students in transitioning between concepts, making their thinking more dynamic and agile.

GH learning promotes the structured decomposition of problems, enabling systematic thinking. It transforms parameters into fundamental graphical elements, continuously adjusting to produce novel variations. This learning approach also facilitates students in transitioning between concepts, invigorating their thinking process..

參數式 3D 列印實務(微型課程) 1 **選** **侯博倫**

本課程的養成目標讓同學具有將想像具體化的工具，3D 列印必須同時具備 3D 繪圖能力，切片與數位運算等觀念。透過參數式設計的加入也讓 3D 列印有更多發展的空間。(資訊科技與自我精進)。

Practical Parametric 3D Printing 1 **E**

The goal of this course is to equip students with the tools to materialize their imagination. In the realm of 3D printing, this entails developing both 3D modeling skills and an understanding of concepts like slicing and digital computation. By incorporating parametric design principles, we open up even greater possibilities for the evolution of 3D printing. (Information Technology and Self-Improvement).

設計模型製造(微型課程) 1 **選** **鄧兆鈞**

理解傳統模型製造到現代模型製造其思考邏輯差異，從加工設備選擇、製作方法改變、使用材料不同等面向，並透過校外參訪，實際了解企業營運之模式與概況，培養同學面對

現今設計製造業之模型製作規劃、數位設計應用及模型製作應用等基礎概念。

Model Manufacturing　　1　E

Students will learn about the differences in thinking logic between traditional model making and modern model making, including the selection of processing equipment, changes in production methods, and the use of different materials. The students will also learn about the operation mode and general situation of enterprises through off-campus visits. Students will develop basic concepts of model making planning, digital design applications, and model making applications in the design and manufacturing industry.

(四) 動物科學與畜產系：

進階蛋白質純化分析與應用　　2　選　　楊國泰，下

介紹蛋白質特性、萃取、定性、定量、轉譯後修飾、電泳分析及交互作用，並介紹抗體製備、結構及免疫分析等基礎原理。本課程著重在實驗技術經驗傳承與分享，使碩士班學生瞭解蛋白質純化理論及技術、抗體製備、特性及應用，並進一步探討功能性分析，可做為學生未來進行分子生物相關研究及實驗操作技術之基礎。

Advance in protein purification analysis and application　2　E　　K. T. Yang，S

The course introduces the characteristics of proteins, including how to extract, qualitative, quantitative, posttranslational modification, electrophoresis analysis, and protein-protein interaction. We also introduce the fundamental principle of antibody preparation and their structure for immunoassay. This course is focused on the delivery and sharing of experimental skills experience to enable master students to understand the theory and technology of protein purification, antibody preparation, and characteristics, and to further explore the functional analysis, which can be used as the basis of knowledge for students to conduct molecular biology-related research and experimental operation techniques in the future.

蛋雞飼養管理　　2　選　　楊國泰，下

本課程介紹蛋雞飼養管理之理論與實務作業技術，包括：蛋雞品種，育雛生長期及產蛋期飼養管理，蛋雞舍設施與自動化設備操作，疾病預防與健康監控、蛋的生產與品質管理、動物福祉與經營管理等事務，使學生對蛋雞產業生產現況與未來發展有全盤之認識。

Feeding and Management of Laying Hen　2　E　　K. T. Yang，S

This course encompasses the theoretical foundations and hands-on operational skills essential for the effective management of laying hen farming. Topics include hen breeds, rearing practices, growth management spanning the chick and laying stages, operation of facilities and automated equipment, disease prevention and health monitoring, egg production and egg quality management, animal welfare considerations, and business practices. The overarching goal of the course is to equip students with a holistic grasp of the present landscape and potential future advancements within the laying hen industry.

畜牧永續經營　　2　選　　楊國泰，下

本課程首先介紹國際與台灣永續發展脈絡及核心價值，並探討畜牧業如何配合永續發展目標，維護糧食和營養安全、動物健康和福利、經濟增長以及氣候和自然資源之永續發展。訓練學生思考如何兼顧畜牧業的經濟與永續發展。

Sustainable Animal Science　　2　E　　K. T. Yang，S

To make livestock systems more sustainable, this course introduces the core value of sustainable development in Taiwan and the rest of the world. Then, we discuss how animal science adopted the Sustainable Development Goals (SDGs), especially food and nutrition security, animal health and welfare, economic growth, climate and natural resources.

(五) 科技農業進修學士學位學程：

農業自動化實習　　1　選　　楊正輝，上

因應智慧農業需求，針對非電機背景之學生，安排工業配線、工業電子、IoT 及無人機應用等課題，安排相關入門實作或操作課程，以奠定自動化設備應用之基礎能力。

Agricultural Automation Practice　　1　E

In response to the needs of smart agriculture, for students with a non-electrical background, arrange courses such as industrial wiring, industrial electronics, IoT, and drone applications, and related practice or operation. To help the students own the foundation for the application of automation equipment.

食農教育　　2　必　　林俊男，上

本課程主要的內容在教授學生食農教育的相關知識，除強調食物及食物的來源外，更強調食農教育具有親手做、地產地消、農業食物、全食利用、家人共食、原味感官體驗、文化傳承及多樣性等八大特色，透過舉辦食農相關的教學活動使學生更重視這個議題，並藉此落實教育下一代的責任。

Food and Farming Education　　2　R

The main content of this course is to teach students the relevant knowledge of food and farming education. In addition to emphasizing food and food sources, it also emphasizes that food and farming education has hands-on, local consumption, food, food utilization, family food, and original sensory experience , cultural heritage, and diversity. By organizing teaching activities related to food and farming, students will pay more attention to this issue, and thereby fulfill the responsibility of educating the next generation

食農教育實務　　1　必　　林俊男，上

本課程主要教授內容是要介紹食農教育的法規內容與政策方向，說明食農教育實際操作的方法，包括各種食物的食用方法、各種食物材料的來源、耕作及養殖方法等；並且教授基礎的教育教學知識，例如教育心理學、教學原理、教材教法、教案設計等，讓學生具備教授食農教育的能力。

Food and Farming Education Practice　　1　R

The main teaching content of this course is to introduce the legal content and policy direction of food and farming education, explain the practical operation methods of food and farming education, including the eating methods of various foods, the sources of various food materials, farming and breeding methods, etc.; and teach primary Education and teaching knowledge, such as educational psychology, teaching principles, teaching materials, and teaching methods, teaching plan design, etc., equip students with the ability to teach food and farming education

生物防治學　　2　選　　劉上賓，上

教授以微生物、自然天敵、育種及遺傳工程等方法與技術，應用於植物病蟲害之防治，減少農藥使用，達到自然、健康及有機環保方式之農業生產模式。本課程包括 12 章節及 10 附錄，第一章緒論、第二章利用蟲生真菌對植物害蟲之生物防治、第三章利用細菌對植物害蟲之生物防治、第四章利用病毒對植物害蟲之生物防治、第五章利用捕食性天敵對植物害蟲之生物防治、第六章利用寄生性天敵對植物害蟲之生物防治、第七章利用拮抗性真菌對植物病害之生物防治、第八章利用拮抗性細菌對植物病害之生物防治、第九章利用菌根真菌對植物病害之生物防治、第十章交叉保護與誘導抗病對植物病害之生物防治、第十一章其他非農藥資材應用於植物病蟲害之生物防治、第十二章抗病及抗蟲品種應用於植物病蟲害之生物防治等。

Biological Control 2 **E**

This course Includes : 1. Introduction. 2. Biocontrol of plant pests by using entomopathogenic fungi. 3. Biocontrol of plant pests by using entomopathogenic bacteria. 4. Biocontrol of plant pests by entomopathogenic virus. 5. Biocontrol of plant pests by using natural parasitoids. 6. Biocontrol of plant diseases by using antagonistic fungi. 7. Biocontrol of plant diseases by using antagonistic bacteria. 8. Biocontrol of plant diseases by using mycorrhiza. 9. Biocontrol of plant diseases by cross protection and inducing resistance. 10. Biocontrol resources of non-chemical materials. 11. Biocontrol of plant pests and diseases by resistance varieties. 12. Integrated pest management with biocontrol.

生物防治學實習 1 **選** **劉上賓，上**

教授以微生物、自然天敵、育種及遺傳工程等方法與技術之實作，應用於植物病蟲害之防治，減少農藥使用，達到自然、健康及有機環保方式之農業生產模式。本課程包括 12 章節，第一章緒論、第二章利用蟲生真菌對植物害蟲之生物防治、第三章利用細菌對植物害蟲之生物防治、第四章利用病毒對植物害蟲之生物防治、第五章利用捕食性天敵對植物害蟲之生物防治、第六章利用寄生性天敵對植物害蟲之生物防治、第七章利用拮抗性真菌對植物病害之生物防治、第八章利用拮抗性細菌對植物病害之生物防治、第九章利用菌根真菌對植物病害之生物防治、第十章交叉保護與誘導抗病對植物病害之生物防治、第十一章其他非農藥資材應用於植物病蟲害之生物防治、第十二章抗病及抗蟲品種應用於植物病蟲害之生物防治等。

Practice of Biological Control 1 **E**

This practical course Includes : 1. Introduction. 2. Biocontrol of plant pests by using entomopathogenic fungi. 3. Biocontrol of plant pests by using entomopathogenic bacteria. 4. Biocontrol of plant pests by entomopathogenic virus. 5. Biocontrol of plant pests by using natural parasitoids. 6. Biocontrol of plant diseases by using antagonistic fungi. 7. Biocontrol of plant diseases by using antagonistic bacteria. 8. Biocontrol of plant diseases by using mycorrhiza. 9. Biocontrol of plant diseases by cross protection and inducing resistance. 10. Biocontrol resources of non-chemical materials. 11. Biocontrol of plant pests and diseases by resistance varieties. 12. Integrated pest management with biocontrol.

動物營養學 2 **選** **林旻蓉，下**

本課程主要討論動物營養學的原理，包括：營養學的發展、動物營養消化生理、飼料的營養組成分、消化率測定、營養需要量測定、營養素的代謝利用過程，包括碳水化合物、脂質、蛋白質、礦物質、維生素及水之代謝；最後並討論營養性疾病及營養知識的應用。

Animal Nutrition 2 **E**

This course will discuss the principle and application of animal nutrition. The contents include：the development of nutrition, digestive physiology, the composition of feed, the measurement of digestibility,

the metabolism of nutrients；carbohydrates, fats, proteins, minerals, vitamins and water；nutritional deficiency and application of nutritional knowledge.

家禽家畜飼養管理　　2　選　　林旻蓉，上

本課程介紹家畜家禽飼養管理之理論與實務作業技術，包括：家畜家禽品種，種蛋經營，孵化作業，育雛及一般飼養管理，雞舍與設備操作，疾病防治與產品屠宰、包裝及銷售等事務，使學生對家畜家禽產業之整合，生產現況與未來發展有全盤之認識。

Livestock and Poultry Feeding and Management　2　E

The objective of this course is to introduce the theory and practical operation technique of livestock and poultry to the students. The contents include：breeds and students of livestock and poultry, management of breeders, hatching operation, brooding and rearing, houses and equipment operation, disease control, processing and marketing products.

AI 農業應用實務　　2　選　　張嘉焚，下

課堂中,期中考前以案例教導學生如何進行 AI 應用,並請學生分組規劃各組想做的 AI 應用,在學期末必須做出各組的 AI 應用成果且上台報告。

AI Agricultural Application Practice　　2　E

In the classroom, before the mid-term exam, teaching students how to apply AI with cases before the midterm exams, and students are asked to plan the AI applications that each group wants to do. At the end of the semester, they must make the AI application results of each group and report on the stage.

AI 農業應用實習　　1　選　　張嘉焚，下

分組規劃 AI 農業應用之主題,並依其主題進行樣本收集及軟體設定。實習將採期末影片報告的方式成果發表。

AI Agriculture Application Internship　　1　E

Group to plan the theme of AI agricultural application, and conduct sample collection and software setting according to the theme. Internships will be published in the form of a final video report.

農業淨零碳排論壇　　1　選　　李佩璇，下

授課內容主要以全球氣候變遷源於溫室氣體增加，慣性農業導致排放，各國政府為糧食安全採取機械化耕作，導致氣候異常介紹以及農業排放佔食物系統 37% 以上，影響全球環境。希望提高農業與氣候變遷關聯等相關認知，介紹低碳農法，使農業實現溫室氣體淨零排放，以再生農法強調生態平衡，減少化肥農藥，提高生物多樣性，提升土壤健康及碳儲存。農業減碳策略，再生農法種植能源作物可增固碳能力，確保碳固存大於排放，實踐友善耕作及低碳農法，實現永續發展目標。

Net Zero Carbon in Agriculture Forum　　1　E

The content of the lectures is mainly based on the fact that global climate change is caused by the increase of greenhouse gases, inertial agriculture causes emissions, governments of various countries adopt mechanized farming for food security, which leads to climate anomalies, and agricultural emissions account for more than 37% of the food system, affecting the global environment. Hope to raise awareness about the relationship between agriculture and climate change, introduce low-carbon agricultural methods, enable agriculture to achieve net zero greenhouse gas emissions, use regenerative agricultural methods to emphasize ecological balance, reduce chemical fertilizers and pesticides, increase biodiversity, improve soil health and carbon storage. Agricultural carbon reduction strategy, regenerative farming methods

planting energy crops can enhance carbon sequestration capacity, ensure that carbon sequestration is greater than emissions, practice friendly farming and low-carbon farming methods, and achieve sustainable development goals.

傳閱附件 1-3--本校各單位、學院所屬各系(所)課程中英文摘要-管理學院

三、 管理學院

(一)資訊管理系：

AR 擴增實境技術與實務運用　　3　選　　童曉儒、上

隨著 5G 網路與手持設備的進步 AR 體驗蔚為一股風潮，然而如何將這個技術有效運用在農業，其中仍存在著相當大的進步空間。本課程別著重農業的數位轉型，有鑒於一般大眾對有機農場栽培知識有限，而有機農場缺乏一套有效的行銷推廣策略，民眾無法感受其價值，因而造成推廣不易。近年來農食教育強調經由學習者親自參與農產品從生產、處理，至烹調之完整過程，透過了解食物來源、營養成分，增進對植物種植的知識，選擇健康營養的食物，促進健康飲食習慣的養成，也可透過農耕的勞動體驗，可培養學習者對食物、生產者和環境的尊重與感恩。本課程之目的為透過學生在校學習擴增實境 (augmentative reality/AR) 相關技術，同時了解有機栽培知識，觀察農場實際栽種過程與環境，學習如何運用 AR 技術，建構農場教育既導覽系統，藉以提升一般大眾食農教育的程度，協助推廣行銷相關產品，藉以提升農產品價值。

Augmentative Reality Technologies and Application Practices　3　E　S.R.Tong, Fall

With the advancement of 5G networks and handheld devices, AR experiences have become a trend. However, there is still considerable room for improvement in how to effectively apply this technology to agriculture. This course specifically focuses on the digital transformation of agriculture. In view of the fact that the general public has limited knowledge about organic farm cultivation, and organic farms lack an effective marketing and promotion strategy, the public cannot feel its value, making promotion difficult. In recent years, agricultural and food education has emphasized that learners personally participate in the complete process of agricultural products from production, processing to cooking. By understanding food sources and nutritional components, they can enhance their knowledge of plant cultivation, choose healthy and nutritious foods, and promote healthy eating habits. Nurture, or through the labor experience of farming, can cultivate learners' respect and gratitude for food, producers and the environment. The purpose of this course is for students to learn augmented reality (AR) related technologies at school, and at the same time understand the knowledge of organic cultivation, observe the actual cultivation process and environment of the farm, learn how to use AR technology, and construct a guidance system for farm education. The system aims to improve the level of food and agricultural education among the general public, assist in the promotion and marketing of related products, and thereby increase the value of agricultural products.

商業智慧　　3　選　　張慈玲、下

本課程旨在介紹如何利用資料探勘、雲端計算、數據分析等技術，將銷售數據、營業成本、以及銷貨收入等數據，轉換成能提供給管理階層做為決策判斷的參考資訊。商業智慧能揭露資料中的重要模式和趨勢，有助於深入檢視企業流程、消費者行為和內部生產力等。課程內容涵蓋資料視覺化、預測分析、企業績效管理等。

Business Intelligence　3　E　T.L.Chang, S

This course aims to introduce how to use data mining, cloud computing, data analysis and other technologies to convert sales data, operating costs, and sales revenue into reference information that can be provided to management for decision-making. Business intelligence can reveal important patterns and trends in data, allowing for in-depth examination of corporate processes, consumer behavior, and internal productivity. The course content includes data visualization, predictive analysis, enterprise performance

management, etc.

(二)餐旅管理系：

食育桌遊設計與應用　　1　選　　張慧珍

本課程設計從「遊戲設計師」的思維角度分析遊戲的結構，以工作坊形式理解設計流程。課程規劃中學生將認識桌遊概念與目前食育主題如何進行設計結合，並於課程演練中理解桌遊案例並實踐桌遊設計之技巧。課程專案中學生將實際依設計流程，完成桌遊主題架構規劃並製作，並完成遊戲作品以期培養出同學們遊戲開發設計之能力。

Food Education Board Game Design and Application　1　E　CHANG HUI CHEN

The course is designed to analyze the structure of games from the perspective of a "game designer" and to understand the design process in a workshop format. In the course, students will learn about the concept of board games and how they can be combined with current food education themes. They will also understand board game examples and practice the skills of board game design during the course exercises. In the course project, students will actually plan and create a board game theme structure according to the design process, and complete a game product in order to develop their abilities in game development and design.

(三)高階經營管理碩士在職專班：

健康事業管理　　3　選　　黃怡詔、劉芳怡

由於全民健保與公共衛生政策的推展，民眾平均壽命增加，隨著人口老年化的趨勢，民眾對健康的需求日益增加，因此，健康週邊服務日益受到重視，健康相關產業也蓬勃發展。健康產業是以促進健康、疾病預防與治療為主的產業型態，型態包括：醫療院所、長照機構、藥局、保健食品及運動休閒等相關產業。本課程將針對健康產業型態、特色、管理模式與發展趨勢做詳細分析介紹與探討，課程範圍包括：醫院及基層診所營運管理、長期照護機構管理、藥局、醫療器材、醫藥物流及運動休閒產業等相關健康產業管理的介紹。本課程透過課堂授課、期末報告與參訪相關健康產業，讓學生將能對健康產業運作模式有深入瞭解。

Health Industry Managemen　　3　E　　Yi-Chao Huang,Fangyi Liu

Due to the successful implementation of universal health insurance and public health policies, average life expectancy has risen substantially in Taiwan. With the growing needs of healthcare, health-related services have received greater attention and emphasis, and the health industry has experienced a dramatic boom in recent years. The health industry refers to the business field that aims to promote health, prevent diseases, and provide medical treatment. Institutions that fall into this field include clinics and hospitals, long-term care facilities, pharmacies, heath food stores, as well as sports and leisure centers, etc. This course introduces different types of businesses in the health industry. Information and analysis will be provided regarding business characteristics, management styles, and future development. Topics to be surveyed include the management of hospital and clinic operations, long-term care facilities, pharmacies, healthcare equipment, pharmaceutical logistics, the sports and leisure industry, etc. Classes will be conducted through lectures, final project reports, and site visits, all geared toward a more in-depth understanding of health industry operations..

景觀與遊憩的健康設計　　3　選　　輪授

為因應未來成熟社會與新興服務型產業發展的需求，本課程以案例說明及實地訪查的方式，教導學生學習如何將心理感受、身體活動、人際關係與靈性察覺等無形元素，在時間序列上妥善地在安排於都市、鄉村、庭園、地景、建築、自然與森林等有形環境的設計技巧與實際作法。

Healthy Design of Landscape and Recreation　　3　E

In order to meet the needs of future mature society and emerging service-oriented industries. This course applies case study and field survey to teach students the design skills and practices how to properly arrange the intangible elements in horizon such as psychological feelings, physical activities, interpersonal relationships, and spiritual awareness into tangible environments such cities, villages, gardens, landscapes, architecture, nature and forest etc.

企業人文與生活美學專題　　3　選　　蘇衍綸、趙偉庭

本課程主要培養學生具備美學智慧，並探討企業如何成為美學的事業。本課程以服務業個案故事，說明美學智慧在品牌、服務及設計管理過程的作用以及如何運用美學策略打造好生意，因應經營挑戰。除了有相關研究和個案討論，另外搭配學生日常可實作的美學練習及體驗，認識哪些東西具有美感及吸引力。本課程教導學生如何運用美學智慧來吸引、啟發及取悅自家產品的消費者。引導學生把個人的美學智慧以可創造並維繫金融價值的方式，應用在自己的事業上，協助公司或產業轉型，運用美學打造市佔率、爭取顧客忠誠度及創造永續價值。

Independent Study of Business Management in Humanity and Life Aesthetics　　3　E

Yen-Lun Su,Wei-Ting Chao

This course is designed to help students learn Aesthetic Intelligence. Cases in Service Industry shows executives, entrepreneurs, and other professionals how to harness the power of the senses to create products, services, and experiences that stand out, resonate with their customers, and create long-term value for their businesses. Through a combination of storytelling and practical advice, this course shows how aesthetic intelligence creates business value and how students can boost their own AI and successfully apply it to business in marketing sharing, customer loyalty and sustainable value..

商管心理學　　3　選　　林鉦棽、賴鳳儀

本課程共分為兩大部分， 一為組織心理，一為消費心理。組織心理方面，旨在透過組織行為與心理相關理論介紹，使學生了解上述概念在人力資源管理之應用。消費心理方面，旨在透過心理、情緒及社會理論角度了解消費者選擇在行銷之運用。組織心理與行為授課單元包含:

1.組織承諾與退縮行為
2.人格與能力
3.工作滿意與態度
4.激勵與動機理論
5.壓力與行為
6.信任、公正與決策
7.領導與群體動力學

消費心理與行為單元包含:

1.消費者決策
2.知覺
3.記憶與聯想
4.情緒與涉入
5.自我概念、生活型態與價值
6.情境與行為
文化與消費。

Business Psychology　　3　E　　Cheng-Chen Lin, Fong-Yi Lai

This course is divided into two parts, one is organizational psychology and the other is consumer psychology. In terms of organizational psychology, it aims to enable students to understand the application in human resource management through the introduction of related theories in organizational behavior and psychology. In terms of consumer psychology, it aims to understand the use of consumer choices in marketing through the perspectives of psychological, emotional and social theories.

Organizational Psychology and Behavior topics include:
1. Work behavior and performance
2. Organizational commitment and withdrawal
3. Personality and ability
4. Work satisfaction and attitude
5. Motivation and motivation theory
6. Stress and behavior
7. Trust, justice, and decision-making
8. Leadership and group dynamics

The Consumer Psychology and Behavior topics include:
1. Consumer decision-making
2. Perception
3. Memory and association
4. Emotions and involvement
5. Self-concept, lifestyle, and value
6. Situation and behavior
7. Culture and consumption
8. Advertising and persuasion.

(四)工業管理系：

證照專題　　3　選

本課程旨在協助學生取得工業管理相關專業證照，透過資料收集、考情分析、重點整理及模擬測試，提升學生考取專業證照之機率，以期強化學生就業所需之專業技能。

Topics on Professional license Examinations　　3　E

The purpose of this course is to assist students to pass the examinations about the professional licenses related to Industrial Management. Based on the data collections, the analysis of the license examinations, the summaries of some important topics on professional courses and simulation tests, these courses can improve the pass rate of professional license examinations. Furthermore, the course can enhance the ability of profession skills and knowledge.

高等生產系統設計(特色課程)　　2　選

本課程係以系統化方式將生產管理理論做進一步分析，目的除在於提供學生應有的生產系統架構設計及內涵知識外，也同時教導其能有實際應用能力。課程設計內容包括：1.生產系統的架構 2.生產系統設計程序 3.途程分析與應用 4.排程分析與應用 5.生產流程設計 6.服務性生產系統設計 7.整合性生產流程分析 8.個案與專題研討。

Advanced Production System Design　　2　E

The objective of this subject is to provide students a further analysis of production management in the aspects of production systems architecture design and related applications. The subject contents are: 1.Architecture of production systems. 2.Design of production organizations. 3.Routing analysis and application. 4.Scheduling design. 5.Design of production process. 6.Design of service production systems. 7.Analysis of integrated production systems. 8.Case study.

高等生產系統設計(深碗課程)　　1　選

本課程係以系統化方式將生產管理理論做進一步分析，目的除在於提供學生應有的生產系統架構設計及內涵知識外，也同時教導其能有實際應用能力。課程設計內容包括：1.生產系統的架構 2.生產系統設計程序 3.途程分析與應用 4.排程分析與應用 5.生產流程設計 6.服務性生產系統設計 7.整合性生產流程分析 8.個案與專題研討。

Advanced Production System Design(Application of Practice)　　1　E

The objective of this subject is to provide students a further analysis of production management in the aspects of production systems architecture design and related applications. The subject contents are: 1.Architecture of production systems. 2.Design of production organizations. 3.Routing analysis and application. 4.Scheduling design. 5.Design of production process. 6.Design of service production systems. 7.Analysis of integrated production systems. 8.Case study.

永續淨零碳管理專題　　3　選

為因應全球淨零減碳趨勢，企業如何進行碳排放相關計算並規劃減碳作法等碳管理策略成為企業能否永續發展之重要議題，也成為工業管理之重要工作。為使學生具備具系統性與完整性的碳管理知識與技術，本課程內容將包括：國內外溫室氣體發展趨勢、碳盤查相關規範解說、碳排放計算方法與案例演練、我國溫室氣體盤查相關法規、碳排放計算工具與使用、數據品質管理與不確定性分析、碳排放報告書之製作與查證、碳管理工具方法設計與使用、減碳路徑與方法之規劃等。

Topics on Sustainable Net-Zero Carbon Management　　3　E

In response to the global net-zero carbon reduction trend, carbon management strategies such as how companies calculate carbon emissions and plan carbon reduction practices have become important issues for corporate sustainable development, and have also become important tasks for industrial management. In order to equip students with systematic and complete carbon management knowledge and technology, the content of this course will include: domestic and foreign greenhouse gas development trends, carbon inventory-related normative explanations, carbon emission calculation methods and case exercises, our country's greenhouse gas Inventory related laws and regulations, introduction and use of carbon emission calculation tools, data quality management and uncertainty analysis, preparation of greenhouse gas inventory reports, greenhouse gas verification, design and use of carbon management tools and methods,

planning of carbon reduction paths and methods, etc.

數據處理及分析流程自動化　　3　選

本課程將介紹如何使用試算表和 VBA 以執行數據處理及分析流程自動化，從而提高工作效率。課程中將介紹使用 VBA 撰寫陳述式的技巧、流程控制、迴圈、程序與函數、選取儲存格範圍的技巧、訊息方塊與輸入方塊的使用及報告的產生...等。通過學習本課程，學生能夠獨立地編寫試算表的自動化腳本，並且能夠應用到自身的工作場域中。

Automation of Data Processing and Analysis Workflow　　3　E

This course will introduce how to use spreadsheets and VBA to automate data processing and analysis workflows, thereby improving work efficiency. The course will cover VBA statement writing techniques, process control, loops, procedures and functions, selection of cell ranges, use of message boxes and input boxes, and report generation, among others. By learning this course, students will be able to independently write automated scripts for spreadsheets and apply them to their own work fields.

國際供應鏈管理　　3　選

國際供應鏈管理作為一個策略概念，以相應的訊息系統電腦管理技術，將從原料材料採購直到銷售給最終客戶民眾的全部企業活動集成在一個無縫接續流程中。

供應鏈管理包括了對物料（產品）流動，訊息流動，和資金流動的管理，是企業運營管理中的重要組成成分。供應鏈管理一般包括：採購、製造、物流和供應鏈規劃，以及相關的訊息分析與財務管理。

廿一世紀全球市場已從傳統的「企業對企業」之競爭演變為「供應鏈對供應鏈」的競爭態勢。經濟全球化的大背景擴充了國際供應鏈管理內容和範圍：國際物流（Global Logistics），生產外包（Outsourcing），戰略採購（Strategic Sourcing），供應鏈協作（CPFR、S&OP）等得到了較大發展。而供應鏈管理也不再是只關注於企業內部的運營，而是整個產業和價值鏈條在全球市場上的運作，以及相關的風險管理（Risk Management）和可持續性（Sustainability）。

「國際供應鏈管理」課程之目的即在探討如何運用物流相關技術與供應鏈的管理來提昇企業及其依附的全球供應鏈之競爭力。本課程除介紹物流供應鏈的系統架構、經營策略與管理模式外，並探討供應鏈系統設計、需求預測、庫存與生產有關的決策分析工具，亦探討電子化時代運籌管理的趨勢，期能以宏觀面來瞭解透過供應鏈管理提昇企業競爭力之重要性。

International Trade and Supply Chain　　3　E

The international supply chain management is a strategy concept, which is based on information technology and contains continuing processes starting from purchasing raw materials till selling products to customers. The supply chain management is known that it copes with material flow activities, information flow activities and cash flow activities, and is the important component of business management.

The competitive trends in the Twentieth Century nowadays have been transformed from the traditional way of “from businesses to businesses” into the way of “supply chains to supply chains”. The trend of globalization has also changed the business running way into the style of global supply chain which including global procurement and global distribution.

The main purpose of this course is to study the relative techniques of logistics and international supply chain management and how to use those techniques and concepts to manage and enhance business running to be more efficiently and more competitively.

This course will first introduce topics of the system framework of logistics supply chain, business strategies, and management models. The course will also study all the decision analysis tools related to the design of supply chain, prediction of needs, inventory management, and production management. In the course, the discussion of the trend of e-logistics management is also provided. This course intends to understand the importance of logistics management in a global aspect.

智慧生產與作業管理實務應用　　3　選

本課程提供學生智慧生產與作業管理相關基礎知識及模擬實作，培育同學具有智慧製造的知識與實務能力。在課堂教授部分，本課程規劃有智慧生產與作業管理的基本組成知識的傳授，如物聯網、虛實系統、大數據、雲端計算、自動化等基礎知識。在課堂實作部分，本課程將結合精實智慧製造模擬產線與智慧製造執行系統進行智慧生產與作業管理的實務操作實習。

Smart Manufacturing and Operation Management Practice　　3　E

This course will introduce students to basic knowledge and practices in smart manufacturing and operation management. The purpose of this course is to strengthen students' practice capability in smart manufacturing. In the knowledge module, students will learn the basic knowledge of smart manufacturing, including Internet of Things (IoT), Cyber-Physical System (CPS), Big Data, Cloud Computing, Automation. In the practice module, students will put the knowledge learned in the knowledge module into practice by using Lean Smart Manufacturing simulation production line and Smart Manufacturing Executive System (S-MES).

(五)時尚設計與管理系：

永續時尚專論　　3　選　　賴炤容

近年來，"ESG"相關議題成為企業發展的重要趨勢，時尚業在思考永續發展策略時，會關注品牌業者在其供應鏈：設計、原料採購、加工、生產、運輸、銷售、廢棄處理的每個階段，是否達到永續性發展的目標，「永續時尚」已經成為投資者、產業界與消費者共同面對的議題。

本課程內容包括永續時尚概念介紹與研究方向、時尚業的永續發展策略、永續時尚與利益相關者、消費者與永續時尚…等。

Sustainable Fashion　　3　E

In recent years, issues related to "ESG" have become an important trend in the development of enterprises. When thinking about sustainable development strategies, the fashion industry will pay attention to brand owners in their supply chain: design, raw material procurement, processing, production, transportation, sales, waste disposal. At each stage, whether to achieve the goal of sustainable development, "sustainable fashion" has become a common issue for investors, industry and consumers.

The content of this course includes introduction and research on sustainable fashion issues, sustainable development strategies of the fashion industry, sustainable fashion and stakeholders, consumers and sustainable fashion, etc.

流行商機專論　　3　選　　徐秀如

分析趨勢與其發生的原因及傳播途徑，從中了解趨勢與流行的演變，以趨勢預測分析方式，針對時尚產業公司目標消費者市場探尋流行之商機，以此應用於企劃設計專案及行銷策略的擬訂與執行。

Fashion Business Opportunities 3 E **Hsiu-Ju Hsu**

Analyze trends, their causes and transmission channels, in order to understand the evolution of trends and fashion. Use trend forecasting analysis methods to explore business opportunities for fashion industry companies' target consumer markets, and apply them in planning and implementing design projects and marketing strategies.

創意與設計思考實務 3 選 **賴炤容**

設計思考(Design Thinking)源於全球頂尖設計公司 IDEO，其創辦人、史丹佛大學機械工程教授 David Kelley 於 1990 年代提出的一套從設計角度思考解決問題的工作流程。本課程是一門兼具創新與設計思考的實作課程，將以人為本的設計精神，透過五個步驟，從同理心出發，定義使用者需求，通過發想與開發快速原型，經過不斷地測試與修正改良，以產生問題解決方案。

本課程以工作坊的形式，執行設計思考的五個階段，在流程中更好地瞭解顧客及其價值需求， 並提出適合的問題解決方案推動創意與設計的創新。

Creativity and Design Thinking 3 E

Design Thinking" originated from IDEO, the world's top design company, and its founder David Kelley, a professor of mechanical engineering at Stanford University, proposed a set of workflows for thinking and solving problems from a design perspective in the 1990s. This course is a hands-on course that combines innovation and design thinking. It uses the spirit of human-centered design through five steps, starting from empathy, defining user needs, developing ideas and developing rapid prototypes, and undergoing continuous testing and testing. Corrections and improvements to generate problem solutions.

In the form of workshops, this course implements the five stages of design thinking, better understands customers and their value needs in the process, and proposes suitable problem solutions to promote innovation in creativity and design.

傳閱附件 1-4--本校各單位、學院所屬各系(所)課程中英文摘要-人文暨社會科學院

四、 人文暨社會科學院

(一)幼兒保育系：

嬰幼兒人格發展　　2 選　　陳俐君 ，下

本課由「如何教養孩子成為一個人」開始，先探討個人與社會之關係，再討論身體感官知覺、情結與同理心、關心、合作、社交技巧等發展與人際關係建立之關聯。並介紹目前嬰幼兒人格發展常見問題與教學策略，以心理分析、社會學習、生物學、生態學、以及認知等不同觀點，探討人生在嬰兒期和幼兒期，與家庭、同儕、社會、文化的互動成長歷程。

Social and Personality Development in Infancy and Early Childhood　2 E　Li Chun hen, S

This lesson starts with "How to raise a child to be a human being". It first discusses the relationship between the individual and society, and then discusses the relationship between the development of body sensory perception, complex and empathy, caring, cooperation, social skills, etc. and the establishment of interpersonal relationships. It also introduces current common problems and teaching strategies in the personality development of infants and young children, and explores the relationship between life in infancy and early childhood and the relationship between family, peers, and society from different perspectives such as psychological analysis, social learning, biology, ecology, and cognition. , the interactive growth process of culture.

人際關係與溝通訓練　　2 選　　陳俐君 ，下

本課程旨在介紹人際關係的意義、功能、特性與理論，並進行溝通訓練，期使學習者能掌握促成良好人際關係的因素有所了解，並能排除關係障礙，促進良好的溝通，以利於在幼兒園階段針對家長、同仁間良性的互動關係。本課程探討人際關係相關議題，包括人際吸引的因素、知覺、自我概念、溝通的特性與障礙、有效溝通的方法、非語言溝通及衝突處理等，藉由實際參與活動，從做中學，更有助於對課程的理解。

Human relationships and communication training　　2 E　　Li Chun hen, S

This course aims to introduce the meaning, function, characteristics and theory of interpersonal relationships, and provide communication training, so that learners can master the factors that promote good interpersonal relationships and understand them, eliminate relationship obstacles, and promote good communication to facilitate In the kindergarten stage, we aim at the positive interactive relationship between parents and colleagues. This course explores issues related to interpersonal relationships, including the factors of interpersonal attraction, perception, self-concept, communication characteristics and barriers, effective communication methods, non-verbal communication and conflict handling, etc. Through actual participation in activities, you can learn by doing, and more helps you understand the course..

幼兒行為與輔導　　2 選　　陳俐君 ，下

本課程旨在介紹幼兒行為輔導之基礎概念，提供學生未來在輔導幼兒的行為的選擇，並以案例以及常見幼兒行為問題探討並提出輔導策略或預防方法。

Practical Guidance for Young Children　　2 E　　Li Chun hen, S

This course aims to introduce the basic concepts of early childhood behavioral counseling, provide students with options for counseling young children's behavior in the future, and discuss and propose counseling strategies or prevention methods using cases and common childhood behavioral problems..

嬰幼兒音樂和藝術活動　　2 選　　鄭伊恬，下

本課程旨在增進學生對於嬰幼兒音樂和藝術活動之專業知能。授課內容包含說明嬰幼兒音樂和藝術活動之內涵，結合音樂和藝術進行五感體驗活動設計，並讓學生到托育資源中心實際演練操作來體驗教學過程。

Music and Art Activities for Infants and Toddlers　　2 E　　Yi-Tien Cheng, S

This course is designed to enhance students' professional knowledge and skills in infant and toddler music and art activities. The curriculum includes an explanation of the content of infant and toddler music and art activities, designing sensory experiences through the integration of music and art, and providing students with practical teaching experience by conducting hands-on activities at childcare resource centers.

嬰幼兒音樂專題研究　　3　選　　鄭伊恬 ，下

本課程旨在增進嬰幼兒音樂教學知能及學術研究能力。專為有興趣以音樂進行嬰幼兒多元發展，例如：語言、認知、肢體動作、人際互動、情緒、及藝術美學的研究生所設計之課程。本課程內容著重在基礎音樂能力與嬰幼兒教學理論之培訓，透過各種教學影片之觀摩彌補實務經驗之不足，並藉由閱讀國內外相關嬰幼兒音樂教學論文，進行論文評析及寫作練習。

Monographic Study of Music Education for Infants and Young Children　　3　　E

Yi-Tien Cheng, S

The course is designed to enhance the knowledge and academic research abilities in infant and toddler music education. This course is designed for graduate students interested in using music to teach multiple developments, such as: language, cognition, physical movements, social interaction, emotions and esthetics to 0 to 6-year-old children. This course focuses on the training of fundamental musical abilities and theories related to infant and toddler education. It supplements practical experience through the observation of various instructional videos. Additionally, it involves the reading and analysis of domestic and international research papers on infant and toddler music education, as well as practice in writing papers.

傳閱附件 1-5--本校各單位、學院所屬各系(所)課程中英文摘要-國際學院

五、 國際學院

(一)熱帶農業暨國際合作系：

利用字根字首擴展生物英文詞彙　　1　選

專業英語詞彙中常用的字首與字尾，配合舉例與課堂活動，培養學生對專業名詞的敏銳度並熟悉專業字彙的組成，進而在遇到新的字彙時能運用已知字根字首推斷詞彙意義，減少死記背誦的學習負擔。本課程整理生物專業英語詞彙中常用的字首與字尾，配合舉例與課堂活動，培養學生對專業名詞的敏銳度並熟悉專業字彙的組成，進而在遇到新的字彙時能運用已知字根字首推斷詞彙意義，減少死記背誦的學習負擔。

Advancing Biology Vocabulary by Word Roots　　1　E

This course organizes the prefixes and suffixes commonly used in biological English vocabulary. With examples and classroom activities, students get familiarized with the composition of academic wording styles and in turn gradually acquire the ability to infer the connotation of new vocabulary. The skills learned in this course would greatly reduce the need of memorization.

蜜蜂產物之化學與生物特性　　3　選

本課程主要在探討蜜蜂產品如蜂蜜、蜂王漿、蜂膠、蜂花粉和蜂毒的化學成分及生物特性。課程將詳細教學這些蜜蜂產品對人體健康的有益影響 (增加不可食用)。蜜蜂產品含有豐富的果糖、葡萄糖、礦物質、蛋白質、游離氨基酸、維生素、酵素(酶)和多酚等營養物質，這些營養物質和其它生物功能作用密切相關。課程將討論這些蜜蜂產品的營養和其它健康益處影響。

Chemical and Biological Properties of Bee Products　　3　E

This course aims to discuss the chemical composition and biological properties of major bee products as honey, royal jelly, propolis, bee pollen and bee venom. A detail explanation on latest findings on chemical and biological properties of those bee products, beneficial effects of bee products to the human health will be done during the classes. Bee products are rich in numbers of nutrients as sugars, minerals, proteins, free amino acids, vitamins, enzymes and polyphenols that seem to be closely related to their biological functions. The effects of these products in nutrition and other health benefits will be discussed.

蛋雞飼養管理特論　　2　選

高產且有利潤之蛋雞始於優質的小雞，本課程的目的是讓學生學會正確和適當的蛋雞飼養管理，因為在生長期出現的問題在開始產蛋後就無法修正，大為影響產蛋成績。本課程內容主要包括：1.蛋雞飼養管理流程、2.公雞管理、3.母雞管理、4.熱緊迫管理、5.產蛋生理、6.蛋的形成、7.蛋殼品質、8.蛋白和蛋黃品質、9.功能性蛋之生產、10.光照計畫、11.寄生蟲及疾病管理、12.健康及動物福利評估、13.飼料發霉管理、14.廢棄物管理。

Special Topics on Management of Laying Chickens　　2　E

A good productive and profitable laying hen starts with a good quality chick. The purpose of the course is to let students learn the right and suitable management of layers since problems that occur during the growing period cannot be corrected after the start of egg production. The course will include: 1. Management of layer chickens- flow chart, 2. Rooster management, 3. Hen management, 4. Heat stress, 5. Physiology of egg production, 6. Egg formation, 7. Eggshell quality, 8. Egg white and yolk quality, 9. Functional egg, 10. Lighting program, 11. Pest management and common disease, 12. Health and welfare

assessments, 13. Mold management, 14. Waste management.

分子生物學和遺傳學入門　　3　選

這門課程旨在為沒有分子生物學和遺傳學背景知識的研究生設計。課程內容涵蓋古典和分子層次的遺傳學規則和生物學原理。同時也包括現代生物主題例如重組 DNA 技術、基因轉殖生物和基因體研究等。課程的目標是使學生能夠批判性地評估原始文獻並將所學知識應用於他們的研究中。

Introduction of Molecular Biology and Genetics　　3　E

This course is designed for the graduate students who has no background knowledge of molecular biology and genetics. The contents cover genetic rules and biology principles from classical and molecular level. The biotechnology topics such as recombinant DNA technology, transgenic organisms, and omics research are also included. The objective is to enable students to critically evaluate primary literature and apply the knowledge learned to their research.

(二)動物用疫苗國際學位專班：

進階病毒學　　2　選

病毒學課程的安排，主要是提供病毒的基本概念及其所引發疾病之間的關係，使學生於學習防疫應用技術課程之前預作學理基礎之培養。課程包括總論以及個論兩部分，總論以介紹病毒的特性，其如何感染動物與致病機制為主，個論則依不同病毒科，分別介紹所引致各種動物之疾病。除基本知識傳授外，有關新興傳染病和新的實驗室診斷技術也會列入討論中。

Advance Virology　　2　E

The virology course is mainly to provide the basic concepts of viruses and the relationship between the diseases they cause, so that students can prepare their theoretical foundation before learning the courses of applied technology for epidemic prevention. The course consists of two parts: general theory and individual theory. The general theory mainly introduces the characteristics of the virus, how it infects animals and its pathogenic mechanism, and the individual theory introduces the diseases caused by various animals according to different virus families. In addition to basic knowledge transfer, discussions on emerging infectious diseases and new laboratory diagnostic techniques will also be included.

實驗動物操作技術實務　　2　選

實驗動物操作技術課程的目的是讓學生全面了解，在研究中使用和照顧實驗動物時所涵蓋的知識和操作技術。該課程講授主題包含：動物行為學、解剖學、生理學、飼養管理、健康監測，以及在各類研究過程中會使用到的實驗動物操作技術。該課程的目標是確保學生能夠以安全和人道的方式，有效地進行實驗動物之操作，並降低在實驗過程中，動物和研究人員受到傷害的風險。該課程結束時，學生已能減少或消除實驗動物的緊迫或疼痛，同時也能確保和提高實驗數據的質量和可信度。在實驗動物技術課程中獲得的知識和技能，對於從事動物疫苗研發、獸醫或其它涉及實驗動物工作相關領域的學生而言是不可或缺的重要課程。

Laboratory Animal Practical Techniques　　2　E

The purpose of a Laboratory Animal Techniques course is to provide students with a comprehensive understanding of the principles, techniques, and practices involved in to handle and care for laboratory

animals in research. The course typically covers a wide range of topics, including animal behavior, anatomy, physiology, husbandry, health monitoring, and techniques for handling and manipulating animals for various research procedures. The goal of the course is to ensure that students are able to work with laboratory animals safely, ethically, and effectively, while minimizing the risk of harm to both the animals and the researchers. By the end of the course, students should be able to work with laboratory animals in a way that minimizes their discomfort and distress, while maximizing the quality and reliability of the data they generate. The skills and knowledge gained in a Laboratory Animal Techniques course are essential for students pursuing a career in animal vaccine technology, veterinary medicine, or other related fields that involve working with laboratory animals.

傳閱附件 1-6--本校各單位、學院所屬各系(所)課程中英文摘要-達人學院

六、 達人學院中英文課綱

綠色創新設計　　3　選　　徐子圭

介紹各種綠色創新設計理論,方法,工具和案例, 使學生能具備在產品開發與設計階段融入綠色創新設計概念的能力與技術, 以設計出對環境友善的綠色產品。

Green innovative design　　3　E　　U. K. Hsu

Introduce a variety of green innovative design theories, methods, tools and cases, so that students can have the ability and technology to integrate green innovative design concepts in the product development and design stage to design environmentally friendly green products.

電動機控制與實習　　3　選　　謝昇憲

直流馬達單向換流器相位控制實習,直流馬達三向換流器相位控制實習,感應馬達交流電壓控制實習,感應馬達變頻驅動控制實習,伺服馬 達之微算機化控制。

Motor control and practice　　3　E　　S. H. Hsieh

Phase control of single phase converter of DC motor. 2.phase control of three phase converter of DC motor. 3.voltage control of induction motor. 4.frequency variable drivers of induction motor. 5.microcomputer control of servo motor. (project)

無人機飛行實務　　3　選　　龔志賢

本課程採用科技促進主動學習法結合無人機飛行實務操作，配合教學進度、校內外飛行場域與課堂所學之飛行課目，由飛行原理、模擬器飛行、教練帶飛、學員單飛、任務飛行等科目，培養學生具備定翼無人機及多旋翼無人機之飛行技巧與技術。同時藉由學生動手操作實作實踐新式素養項目所預期培養之四大關鍵能力，提升年輕學子就業競爭力，減少學生與產業界之間的學用落差；並帶領同學赴週邊國中小學推展航空科普教育，實踐 USR 大學社會責任。

UAV and Drone Flight Practice　　3　E　　C. H. Kung

This course utilizes technology to facilitate active learning, combining practical drone flight operations. It aligns with the curriculum, on-campus and off-campus flight facilities, and the flight topics covered in class. The course covers various subjects such as flight principles, simulator flying, instructor-led flying, solo flights for students, and mission flights. Its aim is to develop students' skills and knowledge in fixed-wing and multi-rotor drone flight.

Simultaneously, through hands-on practical exercises, students gain experience and proficiency in four key competency areas expected for the cultivation of modern skills. This approach enhances the employability of young learners and reduces the gap between what students learn and their application in the industry. Furthermore, it encourages students to engage in aviation science outreach education at local primary and secondary schools, promoting the practice of university social responsibility (USR).

創新創業學堂新開課程中英文摘要

光固化成型實務　　0.5　選　　鄭朝元

1. DLP 3D 列印技術介紹
2.光敏樹酯以 DLP 成型技術機械性質探究
3. DLP 成品之機械性質
4. DLP 3D 列印後處理

DLP Molding Practice　　0.5　E　　C. Y. Zheng

1. Introduction to Digital Light Processing Based 3D Printing Process
2. Experimental Study of Drilling 3D Printed Photosensitive Resin in DLP Process
3. Mechanical Characterization of Digital Light Processing (DLP) 3D Printed Parts
4. Post-processing of DLP 3D-Printed

產業增能學堂新開課程中英文摘要

台灣世曦典範工程實務研習(2)　　0.5　選　　徐文信

本課程邀請台灣世曦的資深工程師，分享其參與重大建設的心路歷程；從規劃、施工、完工到營運各階段所遭遇到的困難及克服的過程，再搭配施工中的工程參觀，提供未來工程師進入職場前的完整概念。

The Model Engineering Practice Study of CECI (2)　　0.5　　E　　W. S. Shyu

This course invites senior engineers from CECI to share their experiments in major construction. The difficulties encountered in each stage from planning, construction, completion to operation and the process of overcoming. Combining with the project visit during construction, this course provides future engineers a complete concept before entering the workplace.

3D 影像取像與建模　　1　選　　李文宗

本課程將介紹三維立體影像的定義與原理,取像的方法與成像的原理,以及播放立體影像的方式等。

The Basics of 3D Image Acquisition and modeling　　1　　E　　W. T. Lee

This course aims to provide an understanding of 3D stereoscopic images, including their definition, principles, imaging methods, and how to view and show such images.

永續發展學堂新開課程中英文摘要

高齡服務學習概論　　1　選　　蘇蕙芬

1. 課程簡介
2. 服務學習知能培訓
3. 課程場域簡介
4. 銀髮族群生理與心理之特殊需求
5. 高齡服務理論

Introduction to Service-Learning for Elderly　　1　E　　H. F. Su

1.Introduction
2.Service-learning Knowledge and Ability Training.
3.Introduction to service field
4.Physical and psychological needs of the elderly.
5.Service-learning theory for elderly.

高齡服務學習實務　　1　選　　蘇蕙芬

1. 課程簡介
2. 服務學習技能培訓
3. 課程場域簡介
4. 高齡活動設計與規劃
5. 高齡活動據點服務
6. 活動檢討與期中反思
7. 高齡活動據點服務
8. 活動檢討與期末反思

Practicing to Service-Learning for Elderly　　1　E　　H. F. Su

1.Introduction
2.Service-learning ability training.
3.Introduction to service field
4.Designing and planning of activity for the elderly.
5.Activity field service for the elderly.
6.Activity review and midterm reflection.

7.Activity field service for the elderly
8.Activity review and final reflection

幼兒服務學習概論　　1　選　　蘇蕙芬

1.課程簡介
2.服務學習知能培訓
3.課程場域簡介
4.幼兒族群生理與心理之特殊需求
5.幼兒服務理論

Introduction to Service-Learning for Young　　1　E　　H. F. Su

1.Introduction
2.Service-learning Knowledge and ability training.
3.Introduction to service field
4.Physical and psychological needs of the young.
5.Service-learning theory for Young.

女性運動健身中心經營管理與銷售實務　　1　選　　陳克豪

搭配傳統講課、小組討論、實際應用演練等方式，讓學生了解 Curves 運作模式，進而提升學生在運動服務業的軟硬實力，包含運動指導能力、會員服務能力、推廣行銷能力和整體溝通能力。

Women Fitness Center Operations Management and Sales Practices　1　E　K. H. Chen

The class is designed to improve students' skills, including exercise coaching, member service, marketing, guest production and communication. With Guest Lecturer Co-Teaching, group discussion and role play, by studying Curves' operation mode, we hope to increase the learning effectiveness.

商業健身中心經營管理與銷售實務　　1　選　　馬上閔

本課程主要目的是希望聚焦於運動產業中之商業健身中心,希望透過業界實務教師以及商業健身中心實際參訪，讓學生更進一步了解商業健身中心現有營運現況，進一步可以針對消費市場進行分析、區隔與定位，最後可以配合於學程所學專長，將自己專業可以成功銷售給需要的運動消費者。

Commercial Fitness Center Operations Management and Sales Practices　1 E　S. M. MA

The main objective of this course is focus on commercial fitness centers sports industry. Through industry professionals and actual visits to commercial fitness centers, the purpose is to make students understand the commercial fitness operational status. Therefore, they can use it in Marketing, to analyze, segment, and position the consumer market. With the use of the expertise that they learned in the program, they can do successful self-promotion to the consumers who demand sport.

國際永續議題之專題討論　　0.5　選　　李俊逸

1. 課程中，學生分組進行實習規劃專案，根據核心課程所學融會貫通，面對國內實習場域之挑戰思考創新的解決方式，經過實習過程獲得各種回饋作為滾動式調整規劃之依據，且準備應用於國際實習場域需求。

Seminar on global sustainability issues　　0.5　E　　J. Y. Li

In the course, students will be grouped to work on internship planning projects. The students are expected to integrate the knowledge gained from core courses and figure out solutions to challenges in domestic internship settings. By receiving various feedback while undertaking the internship, they will have a basis for making adjustments to the planning to get prepared for international internship settings.

農業數位轉型技術　　0.5　選　　吳庭育、潘建良

本課程旨在培養學生在農業領域中的數位轉型能力，使他們能夠理解農業數位轉型的概念、趨勢和應用，並掌握相關的數據分析、管理、物聯網和智慧化技術，以應對現代農業面臨的挑戰。

Agricultural digital transformation technology　　0.5　E　　T. Y. Wu, J. L. Pan

This course aims to cultivate students' digital transformation capabilities in the agricultural field, enabling them to understand the concepts, trends and applications of agricultural digital transformation, and master related technologies.

記帳士實務概論　　1　選　　馬上閔

1. 會計學概要
2. 稅務相關法規概要
3. 記帳相關法規概要
4. 租稅申報實務
5. 稅務法規

Introduction to bookkeeper Practice　　1　E　　S. M. Ma

1.Overview of Accounting
2.Summary of tax-related regulations
3.Summary of accounting-related laws and regulations
4.Tax declaration practice
5.Tax regulations

有機農產品行銷策略　　0.5　選　　蔡展維

1.有機產品特性
2.STP 概念
3.行銷策略制定本質

Organic product marketing strategies　　0.5　E　　C. W. Tsai

1. What is organic product
2. What is STP?
3. How to formulate Marketing Strategy

生態旅遊與 DMO 區域軸帶經營　　1　選　　陳美惠

本微型課程介紹生態旅遊、策略聯盟及 DMO 概念，以六龜區域型生態旅遊及臺灣生態旅遊地軸帶生態旅遊為例說明，扣合 SDGs，優化環境教育及食農教育的內涵。

The Reginal Connection of Ecotourism and DMO (Destination Marketing/Management Organization)　　1　E　　M. H. Chen

This course introduces the concepts of ecotourism, strategic alliances, and DMO(Destination Marketing/Management Organization).

農林地碳匯概論、量測與計算實務　　1　選　　陳忠義

本微型課程介紹臺灣農林地碳匯量測、計算、政策策略與發展概況，從基礎各類生態地景碳匯狀況介紹開始，到各類量測技術實務演練，以及現今政策發展策略與推動，幫助同學們了解農林地碳匯概況與發展模式，也讓青年學子從中養成碳匯基礎知識之素養。**Practice of Measurement and Calculation on Agriculture and Forest Carbon Sink　　1　E　　C. Y. Chen**

This course introduces the measurement, calculation, policy and development of carbon sink in Taiwan. Starting From basic theory to practice measurements to help students understand the development situation and know-how of agriculture and forest carbon sink.

樂當森林養菇人-段木香菇栽培　　1　選　　吳羽婷

1. DLP 3D 列印技術介紹
2. 光敏樹酯以 DLP 成型技術機械性質探究
3. DLP 成品之機械性質
4. DLP 3D 列印後處理

Happy to be a Forest Mushroomer - Log Cultivation of Shiitake Mushroom　1 E Y. T. Wu
The course focuses mainly on the problem of weakened mushroom strains and insufficient sources of logs, demonstrating to understand how the USR project can help to solve industrial problems with professional skills. Additionally, the students will participate the practical courses to experience the industrial manipulation.

智慧機電學士學位學程四技部課程中英文摘要

動物科學概論　　2 選　　一上
本課程之設計主要是幫助學生了解動物之演化、分類與生理功能，內容包括器官的發育、細胞分裂與遺傳、動物行為與生態、原生生物、假體腔動物、軟體動物、環節動物、節肢動物、昆蟲、魚類、兩生類、爬蟲類、鳥類、哺乳類。
The object of this course is helping the students to understand the evolution, classification and physiological function of the animal. The contents include: development of tissue, organ, system, cell division and inheritance, animal behavior and ecology, protozoa, pseudocoelomate body plan, molluscan, annelida, arthropod, hexapod, fish, amphibian, reptile, bird and mammal.

機械製造　　2 選　　一下
本課程介紹機械元件之製造原理與方法，著重系統化之說明。製造對象包含金屬、高分子 、陶瓷及半導體等材料，製造方法包含鑄造、塑性成形、切削、銲接、熱處理、表面處理、粉末冶金及非傳統加工等。探討重點在於結合材料之特性及設計之理念，輔以工具機、工模夾治刀具及量測與檢驗的知識，配合生產管理及電腦輔助製造系統之學理與實務，建立一完整性之製造系統觀念。
This course introduces the manufacturing principles and methods of the mechanical components, emphasizing on the systematic descriptions. The discussed materials include metals, polymers, ceramics and semiconductors. The manufacturing methods include casting, plastic deformation, machining, welding, heat treatment, surface treatment, powder metallurgy and nontraditional processes. The investigation of material properties and design concepts are discussed. In addition, the knowledge of machine tools, jigs, fixtures and tools, and metrology and inspections are discussed. The comprehensive manufacturing concept is built by combining the principles and techniques of the production management and computer-aided manufacturing systems.

資料結構　　2 選　　二上
資料的結構在一個有用並且有效率的應用程式扮演重要的角色，相同的演算法在不同的資料結構下，常常造成極為不同的執行效率。因此，如何讓學生理解各種不同的資料結構及其使用的時機，使得學生能夠選擇合用的資料結構，將是本課程的重點。課程是主要在介紹各種型態資料結構的特徵，以及和演算法的關係。修習本課程的同學，除了學到常用的資料 表現方式之外，如何選取合適的資料結構、配合適當的演算法、和評估所採用的資料結構的優缺點等都是重點。課程大綱包括 (1) 資料結構導論，(2) 陣列，(3) 堆疊與佇列，(4) 鏈結資料結構，(5) 樹狀結構，(6) 圖形結構，(7) 資料排序，(8) 雜湊結構，(9) 堆積結構，(10) 資料搜尋，以及 (11) 檔案結構。
Data Structure is one of the kernels for computer programming techniques. This course introduces the fundamental programming techniques, including the data format (structure) and the algorithms. This course not only introduces the feasible algorithms for well-known problems but also finds the most efficient ones. This course focuses on the techniques of designing programs and the methodology of developing algorithms. The course contents include (1) Basic Concepts, (2) Arrays, (3) Stacks and Queues, (4) Linked Lists, (5) Trees, (6) Graphs, (7) Sorting, (8) Hashing, (9) Heap Structures, (10) Search Structures, and (11) File Structures.

電子學　　3 選　　二上

本課程為核心基礎課程，課程內容包含二極體原理、放大器應用、線性積體電路至數位邏輯電路等之基礎理論與系統應用，使修課同學熟悉電子電路之原理及設計運用。

This course is the core course, which includes the basic theory and system application of diode principle, amplifier application, linear integrated circuit and digital logic circuit, etc., so that students can be familiar with the principle and design application of electronic circuits.

航空工程概論　　1 選　　二上

本課程內容包括航空工程的入門知識以及飛機飛行的基本原理；並有系統地介紹，飛行力學、飛機各部位名稱與系統、機翼概論、航空產業之現況等。

This course includes the basic knowledge of aviation engineering and the basic principles of aircraft flight. It also systematically introduces flight mechanics, the names and systems of aircraft parts, the overview of wings and the current situation of aviation industry.

行動裝置應用設計　　3 選　　二下

本課程主要是教導學生開發行動裝置上的應用程式，包括智慧型手機的種類、智慧型手機的人機介面與使用者體驗等議題，使 App 開發過程除了開發工具使用外，也能注重 App 的使用便利。此外也會結合 App 產業的發展現況議題，讓學習者在開發 App 程式設計上更能符合 App 產業人才培育之需求。

As smartphones have become an indispensable communication medium and work platform in our daily life, designing application programs (APPs) on smartphones is also one of the most popular and important programming subjects. This course mainly teaches students how to develop Android-based mobile applications by using the developing tools - Android Studio

製造程序　　2 選　　二下

本課程旨在教授學生了解一般生產及製造的方法及其所需之機器設備等。以建立學生進入工業界從事工業管理所需之工程基礎。本課程內容包括：製造方法的簡介、金屬的生產方法、金屬成形的方法、非傳統性加工方法、製造程序分析、實例探討。包括:金屬、非金屬產品、傳統及高科技產業。

The principal objective of this course is to provide the student with an under- standing of the production process and equipments needed. It provides the fundamental concept of industrial management in practical usage. This course is organized as follows: Introduction to manufacturing process、Production process of metal、Forming process of metal、Non-traditional production process、Analysis of production process、Case study. [includes metal, non-metal products, conventional and high-tech industries。

電磁學　　3 選　　二下

本課程為核心基礎課程，課程內容介紹靜電、穩態電流、靜磁、電磁交互作用等現象與基本之電磁平面波及傳輸線行為。

This course is the core course, which introduces the phenomena of static electricity, steady electricity, magnetostatics, electromagnetic interaction and the basic electromagnetic plane wave and transmission line behavior.

通訊導論與實務　　3 選　　二下

本課程主要在介紹通訊系統中所應用到的基本原理，為進入通訊領域必備的基本學科。本課程將以系統面與應用面為主，對通訊系統(含網路通訊)作一清楚且完整的介紹，以建立與加強修課同學對通訊系統原理的了解。

This course mainly introduces the basic principles applied in communication system, which is a necessary basic subject for entering the communication field. This course will focus on system and application, and

give a clear and complete introduction to communication system (including network communication) in order to establish and strengthen students' understanding of the principle of communication system.

FPGA/CPLD 實務　　3 選　　二下

本課程藉由 FPGA/CPLD 晶片設計工具之基本操作著手、學習使用圖形編輯及撰寫硬體描述語言(HDL)以設計邏輯電路並載入 FPGA 內驗證，以建立設計數位電路之基本概念及設計電路的階層觀念。

This course starts with the basic operation of FPGA/CPLD EDA tools, learns to use graphical design entry and hardware description language (HDL) coding to design logic circuits and upload the design into FPGA for verification, so as to establish the basic concept of designing digital circuits and the hierarchical concept of circuit designs.

無人機飛行實務　　3 選　　二下

本課程簡介目前無人載具科技之發展、無人載具之應用、遙控無人機之操作、衛星定位系統之應用、IoT 物聯網整合；而遙控無人定翼及多旋翼機應用及考照練習亦為課程重點。

This course introduces the current development of unmanned vehicles, the application of remote-control vehicle, the operation of remote -control aircraft, GPS application, and the integration of IoT. Moreover, the application of remote-control unmanned fixed-wing and multi-copter aircraft and license examination exercises are also the focus of the course.

MATLAB 工程應用　　3 選　　二下

本課程介紹 MATLAB 基礎知識及應用，基礎知識包含繪圖、內建函數、矩陣、曲線擬合、圖形化介面，工程應用包含振盪運動、化學動力學反應、光束的傳播、一階二階電路等，讓學生以 MATLAB 解決工程問題。

This course introduces the knowledge of basic applications with MATLAB. The basic knowledge includes a graph, built-in functions, matrices, curve fitting, and a graphical user interface. The engineering applications include Oscillatory motion, chemical kinetics and reaction dynamics, propagation of light, first-order and second-order circuits. Provide the students with MATLAB tools to solve engineering problems

天線與通訊系統設計實作　　4 選　　三上

本課程介紹天線與無線通訊系統的設計原理；並搭配實作練習及透過網路分析儀實機操作演練，介紹天線效能評估的項目以建立與加強修課同學對天線與通訊系統的了解。

This course introduces the design principle of antenna and wireless communication system. Combined with practical exercises and practical operation drills of network analyzer, the efficiency evaluation of antenna is introduced to establish and strengthen students' understanding of antenna and communication systems.

無人機飛行載具設計與實作　　4 選　　三上

本課程介紹無人機軟硬系統架構、組裝、調校、及地面站監控軟體與無人機飛控電腦參數調整，以實作無人機飛行載具之設計與組裝。

This course introduces the architecture, assembly and adjustment of UAV software and hardware system, as well as the parameter adjustment of ground station monitoring software and UAV flight control unit, so as to realize the design and assembly of unmanned flight vehicles.

智慧自動化與先進機器人技術　　3 選　　三上

本課程旨在介紹學生智慧自動化和先進機器人技術的基本概念、原理和應用。學生將通過理論學

習、實踐操作和案例分析，深入了解現代自動化技術和機器人系統的發展趨勢，以及如何應用這些技術解決實際問題。課程內容包含：自動化概論、機器人技術基礎、智慧感知技術、控制系統、機器學習和人工智慧、實際案例分析及未來趨勢和挑戰等，同時搭配類職場工作產線實習。
This course aims to introduce students to the fundamental concepts, principles, and applications of intelligent automation and advanced robotics technology. Through theoretical learning, hands-on practice, and case studies, students will gain in-depth knowledge of the development trends in modern automation technology and robotic systems and how to apply these technologies to solve real-world problems. The course covers the following topics: Introduction to Automation, Fundamentals of Robotics Technology, Smart Sensing Technologies, Control Systems, Machine Learning and Artificial Intelligence, Real-World Case Studies, and Future Trends and Challenges. Additionally, it includes practical internships on simulated workplace production lines.

能源技術應用　　3 選　　三上

本課程旨在探討現代能源技術的基本原理、應用和可持續性議題。學生將學習各種能源來源，包括化石燃料、可再生能源和核能，並了解它們在不同領域的應用，例如能源生產、交通、建築和工業。課程將強調可持續能源解決方案，包括能源效率、再生能源發電和能源儲存技術。學生還將探討環境、經濟和政策方面的能源議題，以更好地理解能源技術在當今社會中的影響和挑戰。完成本課程後，學生將具備對各種能源技術的基本了解，並能夠評估其在不同應用領域中的適用性。同時，他們將能夠參與能源可持續性討論，並探討未來能源技術的機遇和挑戰。
This course aims to explore the fundamental principles, applications, and sustainability issues related to modern energy technologies. Students will learn about various energy sources, including fossil fuels, renewable energy, and nuclear power, and understand their applications in different sectors such as energy production, transportation, buildings, and industry. The course will emphasize sustainable energy solutions, including energy efficiency, renewable energy generation, and energy storage technologies. Students will also examine environmental, economic, and policy aspects of energy, gaining a better understanding of the impact and challenges of energy technologies in today's society. Upon completing this course, students will have a fundamental understanding of various energy technologies and the ability to evaluate their applicability in different sectors. They will also be able to engage in discussions about energy sustainability and explore opportunities and challenges in future energy technologies.

環境永續概論　　3 選　　三下

本課程旨在探討環境永續性的核心概念、挑戰和解決方案。學生將深入了解全球環境問題，包括氣候變化、生態破壞、資源枯竭和污染等，並探討這些問題如何影響我們的社會、經濟和生活方式。課程將強調可持續發展原則，鼓勵學生思考如何平衡環境保護、社會公平和經濟發展。完成本課程後，學生將具備對環境永續性的深刻理解，並能夠在日常生活和職業生涯中提倡可持續實踐。他們將能夠參與全球環境議題的討論，並尋找創新的方法解決當前和未來的環境挑戰。
This course aims to explore the core concepts, challenges, and solutions related to environmental sustainability. Students will delve into global environmental issues, including climate change, ecological degradation, resource depletion, and pollution, and examine how these problems impact our society, economy, and lifestyles. The course will emphasize the principles of sustainable development and encourage students to think about how to balance environmental protection, social equity, and economic development. Upon completing this course, students will have a profound understanding of environmental sustainability and the ability to advocate for sustainable practices in their daily lives and careers. They will be able to engage in discussions on global environmental issues and seek innovative ways to address current and future environmental challenges.

光纖通訊　　3 選　　三下

本課程為當今光纖通訊系統之基本介紹。在本課程中，學生將學習：基本的光纖概念、特選光纖元件的應用以及光纖通訊系統的了解，包含分波多工(WDM)系統、通訊調變模式、無線光纖通訊(Radio over Fiber)系統和光學網路。本課程將強調光

纖通訊系統在於實體層面的設計概念，部分基本而關鍵的光學網路協定也將涵蓋於其中。本課程適合有興趣於通訊及光電領域的大三、大四和研究所同學，對於光通訊系統與元件的物理層面進行更深入的探討與研究。

地面控制系統開發　　3 選　　三下

本課程藉由介紹無人機地面站之軟硬體架構與系統開發工具與環境之建置,進而了解無人機地面站系統所包含之指揮調度、任務規劃、操作控制、顯示記錄等系統功能模組之開發與應用。

This course introduces the software and hardware architecture of UAV ground control station and the construction of system development tools and environment, and then understands the development and application of system function modules including command and dispatch, mission planning, operation control, display and data logging.

企業實習　　9 選　　四上

為強化學生專業能力，使能理論與實務相結合，特開設此課程。修課學生得選擇本課程所擇定一家廠商或研究機構前往實習。

電機系統設計　　3 選　　四下

本課程旨在培養學生在電機工程領域設計和開發系統的能力。學生將學習從概念到實現的全方位電機系統設計流程，包括硬體和軟體方面。課程將聚焦於嵌入式系統、控制系統、信號處理和通訊系統等關鍵主題，並融合實務專案，以提供學生實際解決問題的經驗。完成本課程後，學生將具備電機系統設計的專業技能，能夠應對實際世界中的電機工程挑戰。他們將能夠設計、開發和部署各種電機系統，並具備解決複雜工程問題的能力。

This course aims to cultivate students' ability to design and develop systems in the field of electrical engineering. Students will learn the comprehensive process of electrical system design, from concept to implementation, covering both hardware and software aspects. The course will focus on key topics such as embedded systems, control systems, signal processing, and communication systems, and integrate practical projects to provide students with hands-on problem-solving experiences. Upon completing this course, students will possess professional skills in electrical system design and be prepared to tackle real-world challenges in electrical engineering. They will be capable of designing, developing, and deploying various electrical systems and have the ability to solve complex engineering problems.

傳閱附件 2-----112 學年度第 1 學期教師申請開授通識課程大綱

. 112 學年度第 1 學期教師申請開授通識課程中英文課程大綱

1. 台灣史 Taiwan History

中、英文課程綱要：

1. 從海島到西方殖民地

內容：包括史前與早期原住民文明、荷蘭與西班牙殖民歷史等。

2. 從西方殖民地到明清統治時期

內容：包括鄭成功的崛起、明鄭統治、清代前期與後期、港口發展與國際貿易、民變、現代化的萌芽、涉外戰爭等。

3. 日本統治臺灣時期

內容：包括馬關條約、太陽旗下的政治與經濟、產業發展、南進政策、軍事部署與太平洋戰爭等。

4. 二戰結束後至今

內容：包括國府接收與政府遷臺、冷戰與臺海危機、中美斷交與臺灣關係法、基礎建設與產業升級、民主化轉型、多元文化社會、文化資產等。

1.From Indigenous people to Western Colony

Focus on: Pre-history and Early Civilization, The Dutch Colony, Spanish Formosa.

2.From a Colony to a part of Chinese Emperors

Focus on: Koxinga's Life, Zheng dynasty, Taiwan under Qing rule, Politics and International Trade, Civil Riots, Initial Modernization, Foreign Wars.

3.Japanese colonization

Focus on: Treaty of Shimonoseki, Politics and Economy, Industry Modernization, Military Development, Southern Policy, the Pacific War.

4.Postwar until now

Focus on: ROC government, Cold War and Taiwan Strait Crisis, Taiwan Relations Act, Modernization, Democratization movement, Multicultural societies and Cultural Heritages

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2. 文化資產保存 Preservation of Cultural Heritage

中、英文課程綱要：

1. 明清方志中的名勝古蹟

內容包括古人對古蹟的認知、記載與保存案例等。

2. 日本統治臺灣時期的文化資產保存

內容包括日本的相關法規、對臺灣的影響、保存案例等。

3. 戰後臺灣的文化資產保存

內容包括法律變遷、原因及影響的探討等。

4. 國際的文化資產保存

內容包括國際憲章、宣言、決議文等、美國的歷史保存與案例等。

5. 國內的文化資產保存案例

1.Places of scenic beauty and historical interest of local chronicled during the Ming and Qing dynasties

The definition of heritage as defined by ancient peoples, an introduction and the perseveration of cases etc.

2. Cultural Heritage preservation under Japanese rule
Content includes Japanese laws, effects and cases etc.
3. Taiwan's cultural heritage preservation after the war
Content includes discussion of transitional laws, reasons for said laws and their effects.
4. International Cultural Heritage preservation
Content includes international charters, declarations and resolutions and preservation and cases in US history.
5. Historic Preservation in Taiwan
Content includes military village, military sites and industry activation and reusing policy.

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3. **人工智慧倫理學 AI Ethics**

中、英文課程綱要：

當代 AI 技術所引發之倫理議題眾多，以類型來說大致可以分為兩類：(一) 使用 AI 技術所引發之倫理議題。(二) 發展 AI 技術所引發之倫理議題。針對第一類議題，除了考量特定 AI 技術是否被許可用來取代人類之外，另一項重要議題是關於 AI 技術造成傷害時的責任分配問題：當 AI 造成傷害時，誰應該為此承擔責任？一旦 AI 的自動化程度越高，人類在整個事件中扮演的角色將越薄弱，這將可能造成某種責任鴻溝：傷害發生了，但卻沒有適當的對象可以承擔責任。另外，若 AI 真的成功發展出意識能力，我們應該如何評價 AI 的道德地位，以及如何與 AI 相處？接著，AI 技術引發之第二類議題，關注 AI 發展需要遵循哪些倫理守則，(比方說，監控問題、信任問題、數據中立、資料收集與個人隱私保護、AI 決策與判斷的透明性與可說明性等) 以及這些倫理守則應該如何被實現。當然，這些倫理考量也同時會出現在 AI 技術的使用上。本課程將邀請同學探討前述各類相關議題。

The contemporary AI technology has sparked many ethical issues, which can be broadly divided into two types: (1) Ethical issues caused by the use of AI technology. (2) Ethical issues caused by the development of AI technology. For the first type of issue, in addition to considering whether specific AI technology is permitted to replace humans, another important issue is the allocation of responsibility when AI technology causes harm: Who should be responsible when AI causes harm? As the degree of automation of AI increases, the role that humans play in the entire event will become weaker. This may potentially create a responsibility gap: harm has occurred, but there is no appropriate entity to take responsibility. In addition, if AI really successfully develops consciousness, how should we assess the moral status of AI and how should we interact with AI? Then, the second type of issue caused by AI technology concerns which ethical guidelines need to be followed in AI development, (for example, issues of surveillance, trust, data neutrality, data collection and personal privacy protection, transparency and explainability of AI decision-making and judgment, etc.) and how these ethical guidelines should be implemented. Of course, these ethical considerations will also appear in the use of AI technology. This course will invite students to explore the aforementioned various related issues.

4.&5. 哲學中的批判思考 Critical thinking in philosophy

中、英文課程綱要：

批判思考能力是人類有別於其他動物的重要特徵，在資訊爆炸，假訊息充斥的現代，學會如何篩選資訊、分析資訊變成至關重要的事情。在各種學術領域中，哲學是少見專門研究「批判思考」的學科，哲學家特別關注論證的品質，以及論證的恰當性。這門課將會介紹各種哲學家的論證技巧，這些論證技巧一但習得後，它們的應用將不僅限於哲學領域，而是適用於所有學術領域，同時，也適用於我們的日常生活。在本堂課，我們會首先介紹哲學家的基本論證工具，比方說，何謂論證？好的論證需要具有怎麼樣的性質？怎麼樣的論證在形式上沒有參考價值等。在對基本工具有一定程度理解後，則介紹進階論證工具，比方說，哲學家常用的各種推理方法。接著，我們說明如何分析與評價論證，如何檢視論證中前提與結論之間的關聯。在課程進行的過程中，我們將引入哲學案例、日常案例、統計案例等等佐證課程內容。

Critical thinking are important characteristics that distinguish humans from other animals. In the modern era of information explosion and rampant misinformation, it is crucial to learn how to filter and analyze information. Philosophy is one of the rare academic disciplines that specifically studies " Critical thinking." Philosophers pay special attention to the quality and appropriateness of arguments. This course will introduce various argumentation techniques employed by philosophers. Once these argumentation techniques are learned, their application extends beyond the field of philosophy and becomes relevant to all academic disciplines as well as our daily lives. In this course, we will first introduce the basic tools of philosophers, such as what constitutes an argument and what qualities make a good argument. We will also explore arguments that intrinsically bad in their form. Once we have a certain level of understanding of these basic tools, we will delve into advanced argumentation tools, including various reasoning methods commonly used by philosophers. Furthermore, we will explain how to analyze and evaluate arguments, and how to examine the connections between premises and conclusions. Throughout the course, we will provide philosophical cases, daily examples, statistical cases, and other supporting materials to illustrate the course content.

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6. **流行音樂與文化 Pop Music and Culture**

中、英文課程綱要：

流行音樂是大眾文化中流動最快速、傳播最廣的一類，與青少年文化、城市文化、時尚產業有密切的關係。臺灣因處在歷史、地理、語言、文化的交會位置，自九〇年代起逐漸成為華語流行音樂中心，至今仍舊保有充沛的創作能量。本課程先從大眾文化史的角度，概論英美流行音樂的發展，認識流行文化的特質，產業結構；接著介紹臺灣歌謠、校園民歌、流行音樂，三個時期的演變，認識臺灣多元的流行音樂文化，並擴及香港、星馬、中國大陸的華語流行音樂發展；同時透過學習歌詞寫作，以及流行音樂觀察報告，幫助學生思考當前的流行音樂趨勢，啟動文化創意構想。

Pop music is the fastest flowing and most widely spread category in popular culture, which is closely related to youth culture, urban culture and fashion industry. Taiwan

is located at the intersection of history, geography, language, and culture. Since the 1990s, Taiwan has gradually become the center of Chinese pop music, and it still has a lot of creative energy. This course first introduces the development of pop music in UK and America from the perspective of popular culture history, and understands the characteristics and industrial structure of popular culture; Then,it introduces the evolution of Taiwanese pop Music, ballads, campus folk songs and pop music in three periods.We will also talk about the development of Chinese pop music in Hong Kong, Singapore, Malaysia, and China. At the same time, through learning lyrics writing and pop music observation reports, Students think about pop music trends and inspire cultural and creative ideas.

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7. **與詩歌共舞--一場創作之旅 Poetry、Song and Dance- A Journey of Creation**

中、英文課程綱要：

詩是一種以文字為媒介的文學形式，通過詞句的選擇和結構的安排表達情感、思想或意象。詩的節奏、押韻和意象等元素賦予其獨特的美感和表達方式。

歌是一種將詩歌化為聲音的表演形式。通常伴隨著音樂和歌唱，歌曲的旋律和歌詞能夠直接觸動人心。歌曲通常以歌唱者的聲線和演繹來傳達詩的情感和意義。

舞蹈是以身體動作和姿態來表達情感和故事的藝術形式。通過舞者的肢體表達、動作編排和舞台設計，舞蹈能夠創造出視覺上的美感和動態的藝術表現。

詩歌和舞之間的關係是相互依賴的。詩提供了歌詞的基礎，歌曲通過音樂的力量將詩的情感加以強化和表達。舞蹈則通過身體的表達將詩和歌曲的情感和意義展現出來。詩、歌和舞的結合能夠為觀眾帶來全方位的藝術體驗，通過文字、聲音和動作的交織，深刻地觸動人的情感和感知。同時，詩、歌和舞也能夠相互啟發和豐富彼此，帶來更豐富多元的藝術創作和表達方式。本課程嘗試運用詩歌的創作來對照舞蹈藝術的創作過程，並啟發學員創作與跨界創作的能力。

Poetry is a literary form that uses words to express emotions, thoughts, or imagery through the selection of words and the arrangement of structure. Elements such as rhythm, rhyme, and imagery give poetry its unique aesthetic and expressive qualities.

Song is a performative form that transforms poetry into sound. It is usually accompanied by music and singing, and the melody and lyrics of a song have the power to directly touch people's hearts. Songs are often conveyed through the singer's voice and interpretation, expressing the emotions and meanings of the poetry.

Dance is an art form that uses body movements and gestures to express emotions and tell stories. Through the dancer's physical expression, choreography, and stage design, dance creates visual beauty and dynamic artistic performances.

The relationship between poetry, song, and dance is interdependent. Poetry provides the foundation for song lyrics, and songs enhance and express the emotions of the poetry through the power of music. Dance, on the other hand, brings forth the emotions and meanings of the poetry and songs through bodily expression. The combination of poetry, song, and dance provides audiences with a multidimensional artistic experience, intertwining words, sound, and movement to deeply resonate with people's emotions and perceptions. Additionally, poetry, song, and dance can inspire and enrich each other, fostering diverse artistic creations and modes of expression.

This course aims to explore the creative process of dance through the use of poetry

and inspire students' abilities in creation and utilization.

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8. **攝影藝術 Photography Art**

中、英文課程綱要：

課程內容包含攝影功能介紹、攝影題材選擇、攝影名家作品介紹：

1. 攝影操作與運用
2. 攝影美學構圖
3. 探討攝影影像藝術作品
4. 運用攝影鏡頭說故事
5. 攝影影像創作與發表

The course introduces the process of photography from the views of exploring the topics. The topics will include the discussion of photography, functions of camera, catching the images properly and analyzing works of photographic masters. Students will learn the storytelling and present their creative works in the class.

9.&10. 心理健康與福祉 Mental Health and Well-being

中、英文課程綱要：

本課程概述心理健康的議題，包含大學生常見的心理疾病，透過徵兆與症狀的介紹，讓同學了解心理疾病的生理學基礎與可能的風險因子。了解疾病之後，同學也將學習到如何增強心理健康的保護因子，發展自我覺察與自我照顧的能力。透過主題式的宣講，同學將能了解大學生常見的心理健康議題，並在學習基本的自我照顧與協助他人的能力之外，破除對於精神疾病的污名，了解社區可取用的心理健康資源。本課程培養學生的心理健康知能之外，也協助學生發展個人促進心理健康的計畫，以尋求身心平衡的健康校園生活。

This course provides an introduction to mental health and wellbeing topics for the students. It covers a wide range of topics related to mental health, including common mental illnesses like depression and anxiety, coping strategies for stress and adversity, seeking and providing help, and positive ways to enhance wellbeing. Through lectures, discussions, and class activities, students will gain a better understanding and awareness of mental health issues that commonly affect youth and young adults. The course aims to promote mental health literacy and help students develop practical skills to lead a balanced and fulfilling life.

11.&12. **性別與心理健康 Gender and Mental Health**

中、英文課程綱要：

本課程聚焦於性別與心理健康的交織面向，課程內容試圖讓學生理解心理健康不僅僅是個人的議題，也與社會結構因素有關，培養學生從社會與個人的環境互動面向，深入理解心理健康議題。從人與人的心理健康出發，培育學生打造性別友善校園的能力。我們將在課程中率先破除以腦神經科學為基礎所建構的「男女大不同」迷思，進而探討社會上對於生理性別、社會性別、性別特質、性傾向等的偏見與歧視，從科學知識生產到社會文化對性別角色的期待，探討科學知識與社會文化對個人心理健康的影響。我們也將探討性／別暴力的創傷與復原，希望能帶領同學從法律以外的面向，學習與了解性／別暴力對人的心

理帶來的衝擊。最後，透過探討性別化的制度設計與求助困境，我們將進一步檢視當前社會政策如何看待不同性別者的心理健康議題，從日常生活的環境開始，營造兼具性別友善與心理健康意識的校園。

The course emphasizes the intersection of gender and mental health. Throughout the semester, the students are expected to learn that mental health is more than an individual issue. Mental health is intersected with sociocultural contexts. The course is designed to cultivate students' capabilities to understand mental health issues from an individual-environment perspective. The period begins with deconstructing sexual differences from the edge-cutting neuroscience evidence and delving into discussions about gender as a spectrum. The students will learn from the first half of the course that scientific knowledge and cultures can consolidate gender-based myths, prejudices, and discrimination. In the second half of the course, the students will learn about the broader understanding of gender-based violence, the possible treatments, and the recovery process from trauma. In the last part of the course, students will create action plans to examine the institutional exclusions and call for actions on campus.

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13. 生涯理財規劃與投資概論 Fundamental of Financial Planing and investment management

中、英文課程綱要：

本課程包括

(1)理財工具 a. 各種金融工具 b. 保險商品分析 c. 信託的運用

(2)理財規劃實務 a. 理財規劃的步驟 b. 客戶型態分析 c. 金融行銷 d. 投資及稅務規劃的介紹與說明。

透過理論與實例探討分析, 讓同學了解理財規劃的運作。

This course includes the introduction of financial tools, insurance products and the use of trusts.

Wealth management involves highly customized and sophisticated investment-management and financial-planning services delivered to investors.

After completing this course, students will be able to apply the knowledge to set up their own financial plans.

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14. **全球跨境電商概論 Fundamental of Cross Border E-Commerce**

中、英文課程綱要：

學生將學習下列重點：

1、台灣電商的特色與創新

2、全球電商特色與服務模式

3、未來電商創新服務發展

Students will learn the following key points:

1. The characteristics and innovation of Taiwan's e-commerce
2. Global e-commerce characteristics and service models
3. The future development of e-commerce innovative services

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15. **客家文化與社會 Culture and Society of Hakka**

中、英文課程綱要：

旨在探討客家族群集體性的文化與社會特徵，例如語言、族群關係、民俗、信仰、建築、飲食、文學、戲曲等，無論是物質文化或精神文化所反映出背後的社會組織性格或環境差異的影響，都要通盤的思考，還需要注意各地區的演變異同與顯現出在地化的特色等。

This course will detect the collective character of Hakka's culture and society, such as custom, belief, delicacies, dress, traditional ideas and etc. We must have comprehensive thinking to take notice not only the material culture but also the spiritual culture which would reflect the behind influence between the social organization and diversity environment. Then, we need to watch out the similarities and dissimilarities among the each area that could reveal the distinguishing feature of localization.

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16. 永續發展與碳管理 Sustainable Development and Carbon Management

中、英文課程綱要：

近幾十年來，全球氣候暖化導致暴雨、洪水、熱帶氣旋、熱浪和乾旱等危害程度持續擴大；根據政府間氣候變化專門委員會(IPCC)歷次提出的評估報告，指出溫室效應超過 90%是因人為排放溫室氣體所導致，因此想要遏止氣候變遷，「低碳政策」應是唯一能選擇的路徑。

作為國內關心碳排放或歐美企業重要供應鏈企業，皆須了解碳排放法規政策。隨著全球暖化加劇，企業被要求碳揭露之勢日漸高漲，企業已被賦予地球環保的重責大任。本堂課可幫助同學了解何謂碳權、碳中和與碳歸零、碳權認證及交易的專業知識。

本課程開發三階段碳管理系列課程，可幫助同學積極面對低碳發展的洶湧浪潮，學習溫室氣體與地球暖化、各國碳中和因應策略、全球能源發展趨的專業知識。同時了解新時代再生能源、新興產業以迎接未來綠色發展紅利。

In recent decades, global warming has led to a continuous expansion of hazards such as heavy rains, floods, tropical cyclones, heat waves and droughts. According to previous assessment reports of the Intergovernmental Panel on Climate Change (IPCC), more than 90% of the greenhouse effect is caused by man-made emissions of greenhouse gases. Therefore, if we want to curb climate change, "low carbon policy" should be the only path we can choose.

As a company concerned about carbon emissions in China or an important supply chain enterprise of European and American companies, it is necessary to understand the regulations and policies of carbon emissions. As global warming intensifies, companies are increasingly required to disclose carbon, and companies have been entrusted with the heavy responsibility of environmental protection. This class can help students understand what carbon rights are, carbon neutrality and carbon zeroing, carbon rights certification and professional knowledge of trading.

This course develops a series of three-stage carbon management courses, which can help students actively face the turbulent tide of low-carbon development. Students can learn professional knowledge about greenhouse gases and global warming, carbon neutral coping strategies of various countries, and global energy

development trends. At the same time, students can learn about renewable energy and emerging industries in the new era to meet the future green development dividend.

17. 全球環境變遷與永續發展 Global environmental change & sustainable development

中、英文課程綱要：

本課程主要目的在於使學生能建立全球視野，了解今日全球面臨的環境、氣候變遷等問題，以期能經由環境教育的方式，達成維持世界在生態、社會、資源等各方面都能永續性發展的長遠目標，尤其在生態系服務、永續發展目標(SDGs)、氣候變遷及淨零排放等重要全球性永續議題的科研、技術、政策及管理層面的綜合介紹。除了相關知識的傳授、亦將邀請相關領域專家演說以及國際新訊的介紹；課程將安排學生的分組報告與討論，以提升對相關議題興趣與蒐集相關資料以及辯思能力。

The class adopts a multi-perspective approach designed specifically to allow access to the topic from students from a wide range of educational and professional backgrounds and to develop understanding of a diversity of approaches and traditions at different levels that connects to the goal of sustainable development.This class includes includes: background to sustainable development and global environmental issues, such as measurement and sustainability indicator; environmental assessment, management and policy in areas of ecosystem services, sustainable develop goals (SDGs), climate changes and net zero emissions.

18. 認識植物與生活療癒的應用 Basic plant knowledge and using plant for healing in daily life

中、英文課程綱要：

課程介紹植物的基本知識，包括辨識方法、種植技術、繁殖技術等。課程同時也介紹近年興起的園藝治療、療癒景觀基本概念，同時藉由小組討論與手作活動，讓學生學習如何將植物運用於生活中，以達到自我療癒的方法。學生將能學習到下列知識及技能：

(1)認識植物的方法—簡單的植物分類與辨識知識
(2)瞭解植物的種植技術—包括土壤介質、光線、溫度、水分與肥料對植物的影響
(3)瞭解植物的繁殖技術—包括種子繁殖、扦插、分株、嫁接等技術介紹
(4)淨化空氣的植物種類與生活應用
(5)香草植物介紹與生活療癒應用
(6)可食性花卉介紹與生活療癒應用
(7)簡介園藝治療的概念與應用
(8)簡介療癒景觀的概念與應用
(9)學習居家陽台設計與應用
(10)學習自然媒材的藝術療癒創作

Syllabus:

The course introduces basic knowledge of plants, including identification methods, cultivation techniques, and propagation

techniques, as well as their healing applications in daily life. The course also introduces the basic concepts of horticultural therapy and healing landscapes, and through group discussions and hands-on activities, students learn relevant knowledge and their application methods. This course objectives are:
(1) Understand the methods of identifying plants - simple plant classification and identification knowledge.
(2) Understand plant cultivation techniques - including the effects of soil media, light, temperature, water, and fertilizers on plants.
(3) Understand plant propagation techniques - including seed propagation, cuttings, division, grafting, and other techniques.
(4) Types of plants that purify the air.
(5) Introduction of herbal plants and their applications in daily life.
(6) Introduction of edible flowers and their applications in daily life.
(7) Introduction to the concepts and applications of horticultural therapy.
(8) Introduction to the concepts and applications of healing landscape.
(9) Learn about the application of healing balcony design.

(10) Learn about artistic and healing creation by using natural material.

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19. 半導體在生活中的應用 The applications of semiconductors in daily life

中、英文課程綱要：
1.半導體的發展史
2.半導體基本元件
3.半導體產業鏈簡介(上/中/下游)
4.晶片的材料及組成單元
5.晶片的製程及設備使用
6.晶片功能分類及晶片選擇
7.晶片在資通訊產業之應用
8.晶片在家電領域之應用
9.晶片在精準醫療領域之應用
10.晶片在智慧農業之應用
11.晶片在汽車產業之應用
12.跨領域應用個案分析(無人機/遙控飛機)
13.晶片產業未來發展趨勢
14.台灣在半導體產業的機會及挑戰

1. Semiconductor development history
2. Semiconductor basic components
3. Semiconductor supply chain (Up/Middle/Downstream)
4. Chip materials and components
5. Chip manufacturing process and equipment

6. Chip function classification and chip selection
7. Application of chips in the information and communication industry
8. Application of chips in the field of home appliances
9. Application of chips in the field of precision medicine
10. Application of chips in smart agriculture
11. Application of chips in vehicle
12. Case analysis of cross-domain applications (drone/RC plane/electric car)
13. The future development trend of the chip industry
14. Opportunities and challenges for Taiwan in the semiconductor industry