

## 104 學年度第 1 學期校課程委員會議

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## 各系(所)新增課程中英文摘要

### 一、農學院

#### (一) 森林系：

#### 高等光合作用

3 選

賴宜鈴

植物進行光合作用將太陽能量和碳元素固定在生態系中，是地球上最重要的化學反應。許多研究生的論文中利用葉片光合作用的測量來代表植物的生長表現和健康。葉片的光合作用能力也常用以推估生態系的生產力。本課程旨在幫助研究生更深入了解所測量的光合作用參數和推估的原理，將包含光合作用的概念、參與光合作用的胞器和酵素系統調控和影響光合作用的環境因子。課程也將介紹測量葉片光合作用的儀器操作和資料分析，包含利用葉綠素螢光測量光合作用光反應和利用氣體交換測量光合作用碳反應。

#### Advance studies in Photosynthesis

3 E

Solar energy and carbon were mostly fixed in the ecosystem through plant photosynthesis. Photosynthesis is the most important chemical reaction on the earth. Many graduate students measured plant photosynthesis to present plant performance and health. The ecosystem productivities could be further modeled by plant photosynthetic ability. This course was aimed to help graduate students more aware of the photosynthetic parameters which they measured and calculated. The course would include the introduction of concept of photosynthesis, involved organelles and enzyme systems and controlling factors. The course would also include the operation of instruments and the data analysis. The application of chlorophyll a fluorescence to detect light reaction and gas exchange to conduct carbon reaction would be trained.

#### 陸域生態系生態學

3 選

賴宜鈴

「陸域生態系生態學」主要在研究陸域生物和與他們構成一個生態系統的物理環境間的交互作用關係，本課程分為四個部份，第一部份介紹構成地球系統內容的大氣、海洋、氣候和地理系統如何影響生態系功能和造成全球的變異。第二部份介紹生態系的功能機制，包含能量和水的流動、碳和養分的循環。第三部份將會包含生態系歷程的時空變化及其與全球尺度的關係。第四部份包含生態系服務的觀念和評估方法。

#### Terrestrial Ecosystem Ecology

3 E

The Terrestrial Ecosystem Ecology is the study of interactions among organisms and their physical environment as an integrated system. This course will separate to four parts. The first part introduces the context of earth system - the atmosphere, ocean, climate and geological systems-affects ecosystem processes and contributes to the global variation. The second part considers the mechanisms by which terrestrial ecosystems function and focus on the flow of water and energy and the cycling of carbon and nutrients. The third part addresses temporal and spatial patterns in ecosystem processes and considers the integrated effects of these processes at the global scale. The fourth part addresses the concept and evaluation of ecosystem service.

#### (二) 生物科技系：

## 幹細胞生物學

3 選

張格東

本課程將介紹成體幹細胞如血液幹細胞、間葉幹細胞、神經幹細胞、肝臟幹細胞等之細胞生理學與生化特性，並針對臨床醫學與生物製藥的未來發展性進行探討。

### Stem cell biology

3 E

An up-to date discussion of somatic stem cell biology, mainly focusing on the physiology and biochemistry of hematopoietic stem cells, mesenchymal stem cells, neuron stem cells and hepatic oval cells etc, for clinical and pharmaceutical application.

## 品保與品管

2 選

葉濬毅

品保與品管可確保產品的品質在各種產業上扮演舉足輕重的角色。本課程的目的為使同學具備品保與品管之概念、瞭解其產業應用之各種實務，並學習如何將品保與品管落實於生物科技產業。課程內容涵蓋品質的概念、各種品質制度、品管與品保之關係、全面品質保證系統、各式品管方法及生技產業之各式優良實務。

### Quality assurance and quality control

2 E

Quality assurance (QA) and quality control (QC) have been used to guarantee the quality of products and play a key role in various industries. The aim of this course is to provide students an overview of QA & QC, as well as some good practices. Contents include concept of quality, various quality systems, relationships between QA and QC, total quality assurance management, QC methods and good practices in quality assurance.

## 質譜分析

2 選

徐睿良

本課程將介紹各式質譜儀，包括離子源、質量分析器及偵測器之原理，並與介紹各式分離工具之搭配及其在生技領域之應用。主要目的為提供學生有關質譜分析工具所需的原理、實際應用時須具備之背景知識、資料解析能力、及可應用的方向。

### Mass Spectrometry

2 E

The principles and applications of mass spectrometry will be introduced including separation front ends, inlet interfaces, ion sources, analyzers and detectors. In addition, their applications in most of scientific field, in particular biomedical application will be emphasized. The goal of this course is to enable students possessing background in mass spectrometric analysis, training in data interpretation, and sense for application.

### (三) 動物科學與畜產系：

#### 動物科學文獻閱讀

#### 1 選

本課程透過研讀動物科學與畜產科技中各種不同知識領域（遺傳育種、生理、營養、飼養、肉品和乳品加工）的中英文期刊論文，訓練學生熟悉論文查詢、英文論文閱讀、科學論文的研究方法與寫作技巧，以了解近期動物科學研究趨勢及方法。

#### Literature Reading

#### 1 E

This course will train students on studying both Chinese and English published papers in various fields of animal science, including genetics, breeding, physiology, nutrition, feeding, meat processing and dairy processing. The aim of this course is to improve students' ability on searching scientific papers, reading scientific literatures written in English, understanding research techniques and scientific writing skills; moreover, to learn the latest trends and techniques in animal science.

### (四) 食品科學系：

#### 澱粉化學

#### 3 選

澱粉化學是一個以學生為中心，案例研究為教學方式的課程。課程中將會教導學生澱粉化學在農產業上扮演的角色，藉此強化學生包含思考、嚴謹度、創造力及研究實驗精神。學生參考課前提供的閱讀大綱於課前閱讀講義或文章。課堂上，學生們依據課前閱讀資料以分組方式進行案例討論。案例研究議題包含碳水化合物營養，麵粉的品質，和馬鈴薯產品品質。學生利用已獲得的知識和技巧，針對案例進行策略擬定、文獻蒐集及嘗試解決案例呈現的問題。本課程的目的包含獲得澱粉化學的專業知識，並強化思考及培養解決問題的能力。

#### Starch Chemistry

#### 3 E

Starch Chemistry is a student-centered, case study-teaching style class. Starch chemistry, its relationship with, and its roles in agricultural industry will be taught to enhance the critical thinking, rigor, creativity, and spirit of experimentation that defines research. Students will study pre-class reading handouts or articles. A reading guideline will be provided to students. In the classroom, students will work within their teams for case discussion or problem solving based on the knowledge provided in the pre-class reading materials. The class will focus on three case studies: carbohydrate nutrition, wheat flour quality, and potato product quality. The class will focus on three case studies: carbohydrate nutrition, wheat flour quality, and potato product quality. Students will use the knowledge and skills gained to develop strategies, search literature, and problem solve. The course is designed to gain specific knowledge, enhance critical thinking and develop problem-solving skills.

傳閱附件 1-2--本校各學院所屬各系(所)課程中英文摘要-工學院

## 二、工學院

### (一)車輛工程系：

#### 進階工廠實習

1 選

黃惟泰

本課程之目的在增進與延續學生修習基礎工廠實習之技能。藉由此課程訓練使學生能對於精密切削加工精度控制與工具機操作能更熟練，並加入精密磨削的單元使學生在相關技能上能更精進。

#### Advanced Practical Training in Factory 1 E

The purpose of this course is to let students continue to attend the promotion and practice the based skills of factory. With this training course to enable students to be more proficient precision control for precision machining and machine operation, and add precision grinding unit on the relevant skills to enable students to be more diligent.

#### 進階產業實習

9 選

本課程將提供給車輛系學生到校外車輛、機械、光電等相關產業公司廠商實習機會，實際接觸或參與各相關產業的產品設計、分析、測試、製造與生產等實務，以增加學生實務能力與知識。實習內容將視合作廠商性質與提供之工作內容而定，然而將以研發工作之內涵為優先考量。

#### Advanced Internship 9 E

This course will provide students the opportunity of intern to learn and to enhance the practical experience and knowledge of product design, analysis, test, and manufacturing in the industries of automotive, mechanical and optoelectronics, etc. The contents will depend on the co-operative enterprises or companies, however, the tasks of research and development in automotive, mechanical and optoelectronic areas are considered in the first priority.

### (二)生物機電工程系：

#### 農產加工工程

3 選

謝清祿

本門課介紹為維持農產品之品質，或改變農產品之外形或特性的工程原理與技術。介紹主題包括幫浦與風扇、物料處理、清洗、分級、選別、乾燥、脫水、研磨、混合、儲藏、冷凍、輸送等。

#### Agricultural Process Engineering 3 E

This course introduces the principle process engineering for agriculture products. The process can maintain or raise the quality or change the form or characteristics of a farm product. Topics include pumps, fans, materials handling, cleaning, sorting, grading, drying, dehydration, milling, mixing, storage, refrigeration, and transportation, etc.

### 三、 管理學院

#### (一)管理學院：

#### 服務體驗與創新服務

3 選

楊仁達、黃勃程、

彭永興、陳震宇、何杏華

本課程聚焦在日常體驗之「休閒農業食在安心」的創新服務設計，使用系統化的服務體驗工程方法流程帶領學生進行創新服務的思考與討論。課程中配合業界實務案例說明引導學生腦力激盪，共創價值主張的服務發展。

服務體驗工程方法包含四大核心：(1)趨勢研究(FIND)，針對消費者及環境面的趨勢研究，包含顧客需求研究及技術應用觀測、(2)服務價值鏈研究(Innovation Net)，專注於產業價值鏈以及服務塑模(3)服務實證(Design Lab)及(4)場域實證(Living Zone)，專司於服務可行性的驗證，包含技術概念驗證、服務驗證與商務模式驗證。本課程以 S.E.E. 科學方法四大核心為基礎，透過農業科技應用發展案例，協助學生學習創新服務設計的流程與應用。

#### Applying S.E.E. to Innovative Service

3 E

This course focus on innovative service design of daily life experiences of "Leisure agriculture and safety food". Lead students to the consideration and discussion process of innovative services by using a systematic method of Service Experience Engineering (S.E.E.). The course also guides students to brainstorm and create value proposition for service development with description of industry practice cases.

Service Experience Engineering (S.E.E.) divided into 4 phases: (1) Market Trend Research (FIND), it focuses on the macro market trend research in terms of the customer and surrounding factors, it consists of customer research and technology watch. (2) Service Value Chain Research (Innovation Net), it focuses on the industrial value chain and service modeling. (3) Service Test (Design Lab) and(4)Living Zone, they focus on the testing of the service feasibility, including proof of concept (POC), proof of service (POS) and proof of business model(POB). The course helps students learn the innovative service design process and application based on 4 cores of S.E.E. scientific method via the agricultural science and technology application cases.

#### (二)高階經營管理碩專班：

#### 論文研究方法與寫作

3 選

陳灯能、薛招治、

謝如梅、趙雨潔

本課程內容重點在教授論文研究方法及寫作技巧，教學目的在協助學生解決撰寫論文過程中常見問題，並提升論文品質。課程重點內容包括：研究題目的設定、理論與參考文獻的搜尋及整理方法、量化研究設計、質性研究設計、個案研究方法、統計分析方法與軟體應用、論文基本格式及撰寫要點、學術研究倫理等。

#### Research Methodology and Thesis Writing 3 E

This course focuses on teaching graduate students about research methodologies and writing

skills of master theses. The goal of this course is enhancing the quality of student's thesis and assisting the students to conquer the obstacles in the research process. The major topics of this course include the development of research topic, the search of theories and literatures, the design of quantitative research, the design of qualitative research, case studies, the concepts of statistics and applications of statistical software, the writing skills of thesis, and research ethics.

### (三)農企業管理系：

#### 農業行政與推廣

3 選

段兆麟

本課程涵蓋農業行政學與農業推廣學兩部份的精要內容，以培養學生參加公務人員考試與農漁會人員考試的專業知能，以取得任職資格，而達到就業的目的。課程主要內容如下：農業行政的本質、行政組織理論、中央與地方農業行政機構、農業政策規劃、行政績效衡量、農業發展與農業推廣、農業推廣制度與機構、現代農業推廣策略、農業推廣教育計畫管理、推廣績效考評等。

#### Agricultural Administration and Extension 3 E

This course covers the essence of agriculture administration and agricultural extension. The aim is to foster students' professional knowledge and enhance their employment competence for taking civil service examinations and farmers' association recruitment exams. The syllabus of this course includes the nature of agriculture administration, theory of administrative organizations, central and local institutions of agricultural administration, agricultural policy planning, administrative performance appraisal, agricultural development and agricultural extension, agricultural extension systems and institutions, modern strategies of agricultural extension, project management of agricultural extension education, and performance evaluation of agricultural extension.

### (四)工業管理系：

#### 物料管理與實習

3 選

蘇泰盛

本項課程主要在介紹物料管理之相關理念，內容包括物料管理概述、分類與編號、用料預測與物料預算、採購管理、倉儲管理、存貨管理、物料需求規劃及物料管理績效評估。

#### Materials Management (Including Lab.) 3 E

The purpose of this course is to introduce the concept of materials management. The major contents include (1)introduction to materials management,(2)classifying and coding, (3)forecasting and budget planning, (4)purchasing management, (5)warehousing management, (6)inventory management, (7)material requirements planning, (8)performance evaluation .

#### 運籌管理

3 選

蘇泰盛

培養學生相關物流專業知識。內容包括:物流系統概述、物流顧客服務系統、物流資訊系統、物流運輸系統、存貨管理系統、倉儲系統、物流區位規劃、物流配送系統、揀貨系統、物流整體系統設計。

#### Logistics Management 3 E

The objective of this course is help students to establish the basic professional knowledge of logistics. It contains: Introduction of logistics、Customers service system、Logistics Information system、Transportation system、Inventory Management system、Warehousing system、Logistics

location selection methods、VRP methods、Picking method analysis、Logistics system design、

### 運籌管理專題

3 選

蘇泰盛

本課程在探討物流領域中，與管理有關之專業課題，藉以培養學生規劃、分析、經營、管理與控制之基本素養。本課程包括如下之主題：一、整體物流系統之規劃與分析。二、物流中心區位選擇。三、訂單處理系統分析。四、存貨管理與分析。五、揀貨方法分析。六、倉儲系統分析。七、路線規劃分析。八、搬運系統分析。九、物流資訊系統分析。十、經營績效評估。

### Special Topics in Logistics Management 3 E

Students will learn advanced technology concepts on manufacturing system, tools and techniques for designing, evaluating and implementing manufacturing systems. They have to discuss and analyze work redesign, standard time measurement and man-machine relationship through the real case from factories and know the way of increase productivity.

### (五)景觀暨遊憩管理研究所：

#### 建築風水

3 選

盧惠敏

介紹建築風水學中理氣派與形勢派的理論基礎與應用方法。包括如何應用理氣派理論建構基地規劃中選址定向的規劃理論與方法，同時揭示形勢派所蘊含之景觀美學與生態意義。

### Special Topics on Architectural Geomancy 3 E

This course is to explore geomantic theories and methods both on“Li-Chi (orientation) and For the “Li-Chi” School,it fowsce on siting and orienting edifices related to the field of environment planning and design. For the “Hsen-Shi (form)” theories and practices,titutrduces the landscape aesthetics and ecological meanings, lmbodied in the theories and prachices.

#### 彩繪修復技術

3 選

本課程以工作坊形式介紹學生彩繪修復的知識與技巧，包括調查、清洗、以及上彩等相關技巧。

### Special Topics on Restorations on Wood Paintings 3 E

By way of workshop, this course introduces the theory and practice on wood painting, including investigation, washing, and painting techniques and their related knowledge.

#### 建築構造與裝飾特論

3 選

盧惠敏

本課程以工作坊形式介紹古蹟或歷史建築之大木作之構造與接合形式、以及傳統裝飾如鑿花、木構彩繪、灰泥壁畫等修復相關知識。

### Special Topics on Architecrual Construction and Decoration 3 E

By way of workshop, this course introduces constructions and decorations on historical architecture. It includes the types of connections and the way of construction and the related renovations skills and knowledge of various types of decorations, such as wood carving, wood painting, frescos, and etc.

#### 文化資產與數位科技

3 選

此課程介紹應用 2d、3d 數位科技及其他運用科學方法進行文花資產與其保存環境的的監測與保存技術。

### Special Topics on Cultural Heritage and Digital Technology 3 E

This course is to introduce the 2 D and 3D technologic way to preserve the cultural heritage and control its preserving environment.

#### (六)資訊管理系：

#### 行動寬頻介接網路與 IOT 實務應用導論 3 選 童曉儒

隨著無線網路介接技術的不斷進步，行動通訊已邁入寬頻時代，從早期 GSM 的數十 kbit/s 的頻寬，晉升到 4G 的數十 Mbit/s，未來的 5G 預計將達到 Giga bit/s 的水準；同時許多新型態的通訊模式與服務因應而生，我們所預期的將是一個無縫接軌(seamless)與無設限(limitless)的行動網路介接服務，本課程的主要目的就是介紹這些先進的行動寬頻網路介接技術的最新發展趨勢與應用。內容將包括 3G、4G、5G 的發展、small-cell 的介接技術、software-defined-radio network、self-organizing network、user-centric network；同時介紹一些物聯網(Internet-of-thing)的關鍵技術與創新的應用服務。課程中也將設計一系列實驗，包括 LTE/small cell QOE、RFID、iBeacon programming 等。

### Introduction to mobile broadband access networks and IOT practices 3 E

Continue progress in radio access technologies brings forth a new era of mobile broadband communications. Evolution of bandwidth, from early stage GSM that operates in several kilo bit/s to the current 4G that operates in several mega bit/s, never stops. In the near future, 5G will promise a mobile channel even over giga-bit/s. Driven by this trend, new communication paradigms and services are emerging. The purpose of this course is to introduce mobile broadband access technologies and some state-of-art applications. Topics includes the evolution of 3G, 4G and 5G,small-cell access technologies, software-defined-radio networks, self-organizing networks and user-centric networks. Meanwhile, we will introduce some key technologies of Internet-of-thing (IOT) and investigate its deployment over mobile broadband networks. A series of labs will be provided, including LTE/small cell QOE、RFID、iBeacon programming.

#### 資訊管理實習(1) (暑期實習) 2 選

本課程要透過實習，使學習者學習有關資訊管理之實務，以求理論與實務的結合。從實習的訓練中，同學可學習到管資訊理的工作態度、技能與知識。

### Management Information Systems Internship(1) 2 E

This course is designed to induce the business practices to the students who wish to understand the basic management concepts and information techniques, in order to integrating the theory and practice of management information systems. From the practical training, the students can learn about working attitude, skills and knowledge of the management information systems.

#### 資訊管理實習(2) (暑期實習) 2 選

本課程要透過實習，使學習者學習有關資訊管理之實務，以求理論與實務的結合。從實習的訓練中，同學可學習到管資訊理的工作態度、技能與知識。

**Management Information Systems Internship(2)****2 E**

This course is designed to induce the business practices to the students who wish to understand the basic management concepts and information techniques, in order to integrating the theory and practice of management information systems. From the practical training, the students can learn about working attitude, skills and knowledge of the management information systems.

**智慧型系統 (暑期實習)****3 選****劉寧漢**

本課程的主題包含智慧型系統的介紹、智慧型系統的特性分析、如何使用智慧型計算方法（例如演化式計算法則、類神經網路、模糊邏輯等）來設計系統、以及一些常見的智慧型系統（包括專家系統）的介紹。

**Intelligent Systems****3 E**

The major topics included in this course are the introduction of intelligent systems, the analysis of the characteristics of an intelligent system, how to use intelligent computation techniques (i.e., evolutionary algorithms, neural networks, fuzzy logic) to design an adaptive system. Some popular intelligent systems, including expert systems, will also introduced in this course.

**計算機概論****2 必****童曉儒**

隨著科技的進步，資訊與通訊的進步一日千里，業界對具有專業廣度與深度的資訊管理人才日益迫切，因此本課程之主要目標為培養資管系學生對有關資訊科技之基礎理論概念，與電腦軟、硬體、周邊設備、網路等實務操作上的基本素養，以為日後學習進階課程作準備，同時掌握最新科技動態，以因應未來在資訊管理上的新挑戰。課程主要內容包括：電腦系統介紹、數位資料表示法與邏輯設計、系統與程式、資料庫、網路架構、資訊安全、電子商務等。

**Introduction to Computers****2 R****童曉儒**

The advance of modern technologies has brought significant progress on computers and communications. Industry has shown a great demand on the MIS professionals than ever. Therefore, in this course, we plan to provide the MIS students with theoretical background of information technologies and basic practical training of computer hardware, software, peripherals and networks to serve as foundation for the future advance courses. Meanwhile, we will keep track on the latest state-of-art technologies to build up the sense of future challenges in the MIS domain. Major topics to be covered are as follows: introduction of computer systems, digital data presentation and logic design, systems and programming, databases, network architectures, information security and electronic commerce.

**計算機概論實習****1 必**

本課程主要配合「計算機概論」課程進行實務操作。主要內容包括：各類作業系統操作、基礎網路設定、帳號與檔案管理、資料庫建立與管理、各式辦公室自動化軟體、簡易網頁製作等。

**Lab of Introduction to Computers****1 R**

This course offers practical training for the course of “Introduction to Computers” . It covers the following major topics: operating system practice, basic network setup, account and file management, database setup and management, office automation applications and basic web page authoring.

## 程式設計

1 必

黃申在

本課程主要介紹 C 程式語言之程式設計與程式語言之概念與方法，培養結構化程式設計之習慣。內容包含基本資料處理與運算子、變數與運算式、流程控制、陣列與指標、函數與變數儲存等級、特殊資料型態、例外處理…等。

## Programming Design

1 R

This course introduces concepts and methods in structured program design of C language. The contents include: processing of data and operators, variables and expressions, program flow control, array and pointer, procedures and functions, define of data type, exception handling .

## 程式設計實習

1 必

黃申在

本課程主要介紹 C 程式語言之程式設計與程式語言之概念與方法，培養結構化程式設計之習慣，並實際進程式之撰寫。內容包含基本資料處理與運算子、變數與運算式、流程控制、陣列與指標、函數與變數儲存等級、特殊資料型態、例外處理…等。

## Programming Design Lab.

1 R

This course introduces concepts, methods, and practical training in structured program design of C language. The contents include: processing of data and operators, variables and expressions, program flow control, array and pointer, procedures and functions, define of data type, exception handling.

#### 四、人文暨社會學院

##### (一)休閒運動健康系：

##### 空域活動理論與實務 2 選

1. 以教學互動方式，誘導跨專業基本空域飛行原理、簡易航空生理預防醫學及航空科學知識領域進入“3D 立體空間概念”提供正面向最夯的創新思維。
2. 本課程之首要目的在教導學生認識空域運動項目，如輕航機、熱氣球、飛行傘飛行等之基本知識與相關技能。

##### Theory and Practice of airspace activities flight 2 E

Interactive teaching methods, inducing multi-disciplinary basic principles of airspace, aviation physiology simple preventive medicine and scientific knowledge in the field of aviation into the "3D stereoscopic spatial concept" provides a positive and innovative thinking to the ram.

The primary purpose of this course to teach students to understand the airspace in sports, such as light aircraft, hot air ballooning, paragliding flight, etc. basic knowledge and relevant skills.

##### 航空運動休閒產業經營管理實務 2 選

1. 為延伸飛行運動休閒事業的本質，融入嶄新觀念“遨遊天際”的航空知能、飛航法令、管理規則、活動指導手冊、飛行安全暨空中觀光導覽…等，期使學生更能接近航空科學的內涵，了解航空科技之緣起背景與發展趨勢，演變成對航空科技的好奇，進而激發空域飛行知識的興趣，落實職場領域及學識整合的目標，讓理論與實務相互結合。

2. 在飛行理論與科技兼具之全方位課程配當上，發掘對飛行運動、休閒事業經營管理規劃。菁英人才與簽訂策略聯盟廠商，指導俾使學習者開創另一快樂生活之揮灑空間。除兩岸市場外進而與國際接軌。

##### Aviation sports and leisure industry Management 2 E

In order to extend the essence of flight sports career, into a new concept of "travel horizon" of aviation knowledge and ability, flight decrees, rules, instruction manual activities, Security and aerial sightseeing flight navigation... and so on so that students closer to aviation scientific connotation, understanding the origin of the background and trend of aviation science and technology, aviation technology evolve into curiosity, and thus stimulate interest airspace knowledge, knowledge integration and implementation of workplace field goal, so the theory and practice combined with each other.

.When the comprehensive curriculum with both the flight theory and technology, the excavation of the flight sports, recreation management career planning. Elite talent and signed a strategic alliance vendors guide to enabling learners to create another happy life of sway . In addition to the cross-strait market further with international practice.

##### 運動賽會管理 2 選

本課程授課內容主要在於介紹管理方面的理論知識，並結合賽會管理的實務操作，以達到如何管理各類大小賽會的實務知識。透過成果報告的繳交，讓學生學習並紀錄自己所學的實務知識，達到學以致用的目的。

### **Sport Event Management      2      E**

The purpose of this course is to equip students in class with the theoretical and practical knowledge about how to manage a sport event reasonably by case studies. Also, students will have to get involved in a real case of the sport event in any kind and then give the instructor a final report.

### **團體球類活動指導                      2 選**

本課程主要目的在透過理論與實務的介紹，讓學生融合課堂所學知識與技能，培養學生在團體球類活動指導能力。

### **Instruction for Group Ball Activities      2      E**

The purpose of this course is to develop students' competence for instructing group ball activities often saw through the introduction of theory and practice as well as the integration of knowledge of skill.

### **新興球類活動指導                      2 選**

本課程主要目的在透過理論與實務的介紹，讓學生融合課堂所學知識與技能，培養學生在休閒度假村或俱樂部中常見球類活動指導能力。

### **Instruction for New Ball Activities      2      E**

The purpose of this course is to develop students' competence for instructing new ball activities often saw in the leisure resorts or clubs through the introduction of theory and practice as well as the integration of knowledge of skill.

### **團康活動指導                              2 選**

本課程主要目的在培養學生團康活動指導能力，透過理論與實務的介紹，讓學生融合課堂所學知識與技能，實際參與團康活動之設計與指導。

### **Instruction for Group Games      2      E**

The purpose of this course is to develop students' competence for instructing group games through the introduction of theory and practice as well as the integration of knowledge of skill. Also, students are required to actually participate in designing and instructing group games.

### **冒險教育方案規劃                      2 選**

本課程主要目的在培養學生冒險教育方案規劃能力，透過理論與實務的介紹，藉由做中學方式，讓學生融合課堂所學知識與技能，實際參與冒險教育方案之規劃與執行。

### **Programming for Adventure Education      2      E**

The purpose of this course is to develop students' competence for programming

for adventure education through the introduction of theory and practice as well as the integration of knowledge of skill. Also, by the method of learning by doing students are required to actually participate in designing and implementing adventure education programs.

## (二)幼兒保育系：

### 兒童音樂劇 2 選 李之光

本課程旨在幫助學生學習將音樂與戲劇的元素結合在兒童的藝術活動中，並且鼓勵有創意的戲劇與音樂活動。課程內容包括：兒童音樂劇的賞析以及各類型的音樂戲劇活動。

### Children's Musical Drama 2 E

This course is to help students learn how to combine music and drama components into the children's art activities. The students are encouraged to perform creative dramatic and musical activities in this course. The course content contains: The appreciation of children' musical drama and other types of music and drama activities.

### 兒童繪本賞析與應用 2 選 李之光

本課程旨在幫助學生能認識圖畫書的意義、特質、發展史與價值，透過文學要素來分析並欣賞圖畫書的內涵，以探討圖畫書種類、了解如何選擇優良兒童讀物，再將所學習之方法，應用於幼教課程上。

### Appreciation and application of children's picture books 2 E

This course is to help students understand the meaning, [characteristic](#)s, development process and the value of picture books. Students will appreciate the content of the picture books by analyzing and reviewing the essential components of literacy for further discussing a [variety](#) of picture books, knowing how to select high [quality](#) children's readings. Finally, Students will apply the methods they have learned in this course in the early childhood curriculum.

### 兒童音樂教育 2 選 李之光

本課程旨在幫助學生學習兒童音樂的教學技巧、各種音樂教材的認識、以及了解現今幼兒園音樂教學之現況。其中，學生將實務演練各類音樂教學法，並且能創作簡單的兒童歌曲，以充分結合幼兒音樂教育之理論與實作。

### Music Education of Children 2 E

The purpose of this course is to teach students how to teach children music. The students will be familiar with varied music teaching materials and understand the circumstances of the current music teaching in the kindergarten. In addition, the students will practice music pedagogies and be able to compose simple children songs for sewing the theories and practices of children music education throughout this course.

### 舞台劇製作 2 選 李之光

本課程旨在幫助學生配合學期幼兒劇公演，實際操作幕後的演出事務。內容包括學習服裝、舞台道具、燈光、音效、舞台監督、安排前台工作人員等工作內容及事物。期許學

生藉由舞台設計一連串的實務演練，能在正式演出中擔任幼兒劇舞台工作人員。

## **Stage Design 2 E**

The purpose of this course is to help students gain practical hands-on experiences in the backstage for performing affairs during the children drama publicly presented on the stage. The course content includes learning the works of costume design, stage lighting, sound effects, stage management, on-the-stage staff assignment and so on. The students are expected to become stage staff members in designing stages for children dramas.

## **數位音樂創作 2 選 李之光**

本課程教導學生如何創作適合幼兒的歌曲、如何為旋律編寫伴奏與填詞、如何運用電腦音樂軟體創作。

## **Digital Music Composition 2 E**

This course teaches students how to create a song suitable for young children, how to write lyrics and accompaniment for the melody, and how to use computer music software for composition.

## **幼兒積木 2 選 許哀源**

本課程旨在提升學生對樂高積木（幼兒簡易動力機械積木模組）課程教學與設計的能力。透過本課程之講授和練習，可讓學生瞭解幼兒在積木學習上的肢體與認知發展，進而引導學生習得如何培養幼兒邏輯思考、空間、形狀、色彩、平衡及機械動力傳動順序等概念。

## **Teaching Bricks for Young Students 2 E**

The focus of this course is to enhance students' skills of course designing and teaching in Lego Blocks (Early Simple Machines III Set). Through this course, students learn how to help young students learn by playing with and manipulating DUPLO blocks, such as pulleys, levers, gears, and wheels and axles while exploring energy, buoyancy, and balance. Students can also learn how to introduce science and design technology concepts through the blocks.

### **(三)技術及職業教育研究所：**

## **人力規劃與訓練 2 選**

本課程之目的在於協助學生瞭解組織人力規劃與訓練之內涵，熟悉相關理論與實務作為，以培養未來從事相關工作之專業知能，課程內容涵蓋：人力資源發展、人力資源規劃、組織訓練、訓練需求分析、訓練設計等。

## **Human Resource Planning and Training 2 E**

This course will give students an overview of the field of Human Resource (HR) planning and training. The emphasis will be placed on the HR development practically. Core course contents include the theory of HR planning, the theory of HR training and development, the skill of identifying training needs, and the skill of training program design.

**質性研究法與實務****2 選****鄭明長**

本課程旨在探討質性研究之意義、特性、理論基礎、研究方法、適用範圍與限制；分析質性研究進行之步驟與應注意之原則；最後，亦提供質性研究方法運用於技職教育與訓練實務上的之實際範例，作為本課程探討之對象以增進學生運用質性研究方法與實務工作上的能力。

**Qualitative Research Methods and Practice 2 E**

The critical ends of this course are to explore the signification, features, rationale, methods, scope, and limitations, to analysis the processes and key points of qualitative study. Finally, this course will study real examples about the application for vocational education and training practice.

**技職教育教學設計實務研究****2 選**

本課程旨在針對技職教育與訓練領域常見之教學設計方法之理論依據，以及實務運用的情形進行探討，期能協助學生瞭解並熟捻教學設計模式的理論基礎，並運用於職場教學實務上，以凸顯教學設計發展的趨勢與議題。

**Research on Instructional Design Practice for Technological and Vocational Education 2 E**

This aims of this course are helping students to understand the underlying theories of instructional design and to apply these theories to design instructional model for practical technological and vocational education and training. This course will ask students to design instructional plan for technological and vocational education or in-service training of organization.

**生涯發展與職業輔導實務研究****2 選****吳雅玲**

本課程主要介紹生涯發展理論，並聚焦於工作適應及職業組織中成人的生涯輔導。再者，本課程亦探討當代生活中的各種生涯發展與職業輔導議題，包括性別與生涯發展、休閒管理、壓力管理、教育機構的生涯輔導及多元族群的生涯輔導。此外，本課程亦引導學生將理論運用個人與組織成員之職涯發展輔導。

**Research in Practice of Career Development and Vocational Guidance 2 E**

This course focuses on the theories of career development, work adjustment and the career development of the adults in organizations. Furthermore, this course also addresses some issues relevant to career development in daily life, including women's and men's career development, leisure management, pressure management, career guidance in the educational organizations, and the career guidance for minority groups. In addition, this course encourages students to apply the theories to the guidance of career development among individuals and the members of organization.

傳閱附件 1-5--本校各學院所屬各系(所)課程中英文摘要-國際學院

## 五、國際學院

### (一)國際學院：

#### 國際談判 2 選

本課程採個案研究途徑，學生以小組方式，全學期運用所學理論，針對選定個案進行學習。學生在學期後，能夠理解國際溝通、談判理論、統合式溝通、與分配式談判等基本概念，並能靈活運用於實際個案中。

#### International Negotiation 2 E

This course follows a case-oriented instruction. Students will form groups, each of which will then focus on a specific case through the semester. With their selected cases, students will explore the basic concepts of international negotiation, negotiation theories, integrative negotiation, distributive negotiation, pre-negotiation planning, negotiation style and skills, negotiation power and ethics, cross-cultural negotiation and how to achieve a win-win negotiation. In the class, students are required to participate in discussion and offer contributive comments.

#### 談判與溝通 2 選 林建宏

本課程之目的，在於透過與商務談判有關的各項概念、程序、策略、與論理等事項的教學與演練，引領學員能夠習得談判的正確觀念與技巧。

#### Negotiation Strategies and Tactics for Business 2 E

The course employs instructions, discussions, and case studies to examine the concepts, processes, strategies, and ethical issues related to business negotiation.

### (二)熱帶農業暨國際合作系：

#### 魚類免疫學與疫苗 3 選 鄭達智

本課程包括基本的魚類免疫學和魚類疫苗的發展應用。內容包括討論魚類各項先天性和後天性免疫反應及功能。尤其是魚類特有的免疫器官，例如鰓。同時，討論腸道免疫反應的最新文獻，以奠定發展及應用魚類疫苗的基本知識。另也會涵蓋魚類疫苗的發展、魚類疫苗的特殊投予方法、傳統佐劑與現代佐劑等。

#### Fish immunology and vaccine 3 E

The course contents include the basic fish immunology and the development of fish vaccine. Both of innate and adapt immunity will be covered. Especially the unique fish tissues and immune responses will be addressed. Meanwhile, most recent literatures of intestine innate immunity and adapted immunity will also be discussed to lay the fundamental knowledges for learning how the vaccine works on fish. The strategies for

the development of fish vaccine and the special methods for vaccine delivery into fish will also be mentioned. At the final, the traditional and advance adjuvants used on fish will also be discussed.

傳閱附件 1-6--本校各學院所屬各系(所)課程中英文摘要-獸醫學院

## 六、 國際學院

### (一) 動物疫苗研究所：

#### 疫苗佐劑分析儀器應用 2 選 柯冠銘

生物製劑廠中儀器設備之使用除遵照標準作業流程正確操作之外，還必須要執行儀器設備使用前的操作確效及性能確效及使用後之清潔保養確效。而儀器設備在使用過程中必須建立內控之品質系統，如此才能符合 cGMP 之精神。但在學校一般實驗室在對學生儀器教育訓練過程中往往只著重於儀器本身如何使用。本課程擬指導學生了解生物製劑製程及分析儀器之基本原理、使用方法、確效作業及建立品質系統，使學生於生物製劑製程及分析儀器的使用過程中能符合 cGMP 之規範，使學生畢業後進入生物製劑廠或其他有導入品質系統之研究室工作時不需再另行訓練，縮短學用差距。

#### Application of Vaccine Analytical Equipment 2 E

Analytical and production equipment in biologics facilities must be operated according to standard procedures. In addition, assurance procedures need to be performed in advance of use and sanitation protocol must be followed after use. Quality control procedures ensure cGMP compliance. For equipment in academic laboratories, training usually focus on usage. This class broadens the training to cover the principles of operation of the equipment, usage, and quality assurance so that the entire process is cGMP compliant. This class allows student to be able to operate equipments in biologics facilities without further training.

#### 細胞培養量產技術 3 選 柯冠銘

細胞培養技術為生物科技及疫苗產業最基本技術之一，在疫苗產業隨著科技不斷進步，以不人道且高污染的動物活體及雞胚胎製程作為疫苗生產平台逐漸被細胞培養技術所取代。在生技產業及免疫相關產業中常以細胞做為免疫評估並探討細胞訊息傳遞。運用於不同領域往往需要使用不同細胞，細胞種類繁多，每種細胞都有其獨特性。本課程有系統指導學生了解不同細胞之培養方法，各種物種細胞之分離製備方法、病毒量產以及細胞免疫評估方法，運用於各種研究及產業。

#### Cell Culture scale-Up Technique 3 E

Cell culture techniques remain the foundation of biotechnology and vaccine production. As vaccine production technology advances, the use of animals or eggs for antigen production is being replaced with cell culture technology. In biotechnology, cell cultures are often used for in vitro analysis of immune reaction or cell signalling. Various applications require various cell types and cell lines, each with its own unique properties. This class trains students on the range of techniques of cell isolation, culturing, immune evaluation of cells, virus production, and applications of cells in research and the biotechnology industry.

傳閱附件 2--生物科技系技術報告格式