

96(2)各系所新增、更名 選修課程中英文摘要

中 華 民 國 九 十 七 年 三 月

農園生產系 96-2 新增課程中英文摘要

一、大學部和碩士班

生技產業校外實習 1 選 黃卓治、陳幼光、許岩得
先修科目：生物技術

為強化學生生技方面的專業能力，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之廠商或研究機構於暑假期間前往實習一個月
(160 小時)。

Course Biotechnology industry internship 1 S T. C. Huang、Y. K. Chen
Yan-Der Sheu

Prerequisite : Biotechnology

This course is designed to strengthen students' professional capability in biotechnology by combining theoretical and practical aspects. Students taking this course are required to do a summer internship for a month (160 hours) in a selected company or research institute.

植物代謝體學技術 2 選修 黃卓治、賴宏亮、張誌益、郭嘉信
先修科目：生物化學

本課程的目的在介紹植物生化、基本的代謝路徑及分析植物代謝產物變化及活性的方法，不同天然化合物及草本藥用作物等在農業、林學或醫藥上的應用也將被探討。特別的主題包括植物次級代謝產物及其分析儀器、代謝體學常用之分析技術及資料分析、植物代謝路徑之基因調控、代謝體學在天然化合物及中草藥之應用，以及植物代謝之遺傳工程等。

Plant metabonomics techniques 2S T. C. Huang、H. L. Lay、
C. I. Chang、J. H. Guo

Prerequisite : Biochemistry

The purpose of this course is to introduce plant biochemistry, basic metabolic pathways, and the methodology of analyzing changes in plant metabolites and their activities. The use of various natural compounds and medicinal herb crops in agriculture, forestry or medicine will also be discussed. Special topics include plant secondary metabolites and the instruments used for their analysis, commonly used analytical techniques and data analysis in metabonomics, gene regulation in plant

metabolic pathways, the application of metabonomics in natural compounds and Chinese herbal medicines, and genetic engineering in plant metabolism.

植物代謝體學技術實驗

1 選

黃卓治、賴宏亮、郭嘉信、張誌益

先修科目：無

本課程之目的在訓練學生植物天然化合物分離、純化與結構鑑定相關之實驗設計、操作方法與技術，內容將包含樣品之前處理、萃取、濃縮、分配萃取、管柱層析、高效能液相層析、氣相層析、核磁共振光譜、質譜、紅外線光譜與紫外/可見光光譜等主題。

**Experiments in plant
metabonomics techniques**

1S

T. C. Huang、H. L. Lay

C. I. Chang、J. H. Guo

Prerequisite : none

The purpose of this course is designed to train students to understand the experimental designs, general methodologies and techniques in related to the isolation, purification and structure elucidation of natural products from plants. Subjects include preparation of materials, extraction, concentration, partition, column chromatography, high performance liquid chromatography, gas chromatography, and nuclear magnetic resonance spectrometer (NMR).

二、碩士班

植物功能性基因體學之應用

2 選

徐志宏、江友中、周映孜、陳福旗、陳幼光

先修科目：植物學或植物解剖學、植物生理學

植物功能基因體學的課程主要是應用植物分子生物學及植物生物技術的方法，系統性的探討參與植物生長、發育、適應環境與代謝過程中所有相關基因群的表現、調控及其功能，藉由包括 mRNA、蛋白質及代謝產物量的偵測、突變篩選及生物資訊資料庫的整合等策略，以了解整個植物轉錄體、蛋白質體及代謝體等隨著基因表現活性而產生的變化，並可對各種植物基因體的序列進行比較及分析，對作物在質及量上的品種改良、中草藥代謝產物、林木生理及環境保護的研究亦深具重要性。

**Plant Functional Genomics
and Applications**

2S

J. H. Shyu、Y. C. Chiang

Y. T. Jou、F. C. Chen、

Y. K. Chen

Prerequisite(s) : Plant Biology or Plant Anatomy, Plant Physiology

This is a course in the application of plant molecular biology and plant biotechnology approaches to systematically investigate the expression, regulation, and function of related gene clusters involved in plant growth, development, environmental adaptation, and metabolism. Strategies used to examine the changes of transcriptome, proteome, and metabolome in response to gene expression include the detection of mRNA, protein, and metabolites, mutant selection, and integration of bioinformatic databases. Plant comparative genomics provides important information for researches in plant improvement and breeding, medicinal plant secondary metabolites, woody plant physiology, and environmental protection.

植物功能性基因體學之
應用實驗

2 選

徐志宏、江友中、周映孜

先修科目：植物學或植物解剖學、植物生理學

利用植物功能基因體學課程中所學習到的原理、技術與方法，實際應用於目標植物基因體的研究上；實驗課程內容包括基因庫的構築、功能基因的篩選、生物資訊探勘及基因表現分析等，用以探討參與植物特定生長發育時期的過程中所有相關基因群的表現、調控及其功能。使用的實驗方法包括 RNA 的製備、cDNA 基因庫的構築、蛋白質水解酵素基因的篩選、基因表現差異的分析與基因鑑定等。

Experiments in Plant

2S

J. H. Shyu、Y.C. Chiang

Functional Genomics and Applications

Y. T. Jou

Prerequisite(s) : Plant Biology or Plant Anatomy, Plant Physiology

This course is designed to utilize the principles, techniques, and approaches learned from the lecture for plant genomics studies. The content includes the construction of gene libraries, selection of functional genes, database mining and bioinformatics, and the analysis of gene expression. Methods such as RNA preparation, cDNA library construction, proteolytic enzyme gene screening, differential gene expression and analysis, and gene identification will be applied to investigate the expression, regulation, and function of related gene clusters involved in certain growth and developmental stages.

生命科學系 96-2 新增課程中英文摘要

一、大學部

動物胚胎幹細胞建立與應用

2 選

許岩得

於「動物胚胎幹細胞建立與應用」課程中教授與胚胎幹細胞建立與應用之學理與目前在生物科技、藥物及再生醫學之應用，包括介紹胚胎學、胚胎幹細胞之建立與最新胚胎幹細胞相關科技應用等內容。

Application and establishment of embryonic stem cells

2 S

T. D. Hsuuw

The course will present the establishment of embryonic stem cells from preimplantation embryos, and its new insights of applications in biotechnology, pharmaceuticals and regenerative medicine. Lectures include the embryology, embryo culture, establishment of embryonic stem cells, and the current cell biology and biotechnology in embryonic cell differentiations

動物胚胎幹細胞建立與應用實習

2 選

許岩得

而在「動物胚胎幹細胞建立與應用實習」課程中，以實際操作方式讓學生學習實驗動物飼養、超級排卵、麻醉藥之配製及注射、體外取胚技術、體外胚胎培養、胚胎內細胞發育能力檢測及胚胎幹細胞之分離與培養觀察等各項技術。

Practice of the application and establishment of embryonic stem cells

2 S

T. D. Hsuuw

The practice course will present the fundamental of animal breeding, manipulation of superovulation, Recovery of preimplantation embryos from pregnancy, embryo culture in vitro, morphological observation on embryo development, isolation of the inner cell mass from blastocysts, establishment of embryonic stem cells, embryonic stem cell culture and stem cell differentiation.

植物功能性基因體學之應用

2 選

徐志宏

教育部「生物及醫學科技人才培育先導型計畫」暑期課程

植物功能基因體學的課程主要是應用植物分子生物學及植物生物技術的方法，系統性的探討參與植物生長、發育、適應環境與代謝過程中所有相關基因群的表現、調控及其功能，藉由包括 mRNA、蛋白質及代謝產物量的偵測、突變篩

選及生物資訊資料庫的整合等策略，以了解整個植物轉錄體、蛋白質體及代謝體等隨著基因表現活性而產生的變化，並可對各種植物基因體的序列進行比較及分析，對作物在質及量上的品種改良、中草藥代謝產物、林木生理及環境保護的研究亦深具重要性。

Plant Functional Genomics and Applications

2 S

J.H.Shyu

This course is an application of approaches of plant molecular biology and plant biotechnology to systematically investigate the expression, regulation, and function of related gene clusters involved in plant growth, development, environmental adaptation, and metabolism. Strategies used to examine the changes of transcriptome, proteome, and metabolome in response to gene expression patterns include the detection of mRNA, protein and metabolite production, mutant selection, and integration of bioinformatic databases. Analysis of plant comparative genomics also provides important information for researches in plant improvement and breeding, medicinal plant and secondary metabolites, woody plant physiology and environment protection.

植物功能性基因體學之應用實驗

2 選

徐志宏

教育部「生物及醫學科技人才培育先導型計畫」暑期課程

利用植物功能基因體學課程中所學習到的原理、技術與方法，實際應用於目標植物基因體的研究上；實驗課程內容包括基因庫的構築、功能基因的篩選、生物資訊探勘及基因表現分析等，用以探討參與植物特定生長發育時期的過程中所有相關基因群的表現、調控及其功能。使用的實驗方法包括 RNA 的製備、cDNA 基因庫的構築、蛋白質水解酵素基因的篩選、基因表現差異的分析與基因鑑定等。

Experiments in Plant Functional Genomics and Applications

2 S

J.H.Shyu

This course is designed to utilize the principles, techniques, and approaches learned from lecture for applying on plant genomics studies. The contents include the construction of gene library, the selection of functional genes, the mining of bioinformatics, and the analysis of gene expression. For the investigation of expression, regulation, and function of related gene clusters involved in certain growth and development stages, methods such as RNA preparation, cDNA library construction, proteolytic enzyme genes screening, differential gene expression and analysis, and gene identification will be applied.

自由基生物學

2 選

顏嘉宏

自由基指的帶有未配對電子的原子、離子或分子，而在使用氧作為代謝的生物體中，都會有自由基的產生。自由基在生物體內的角色很多元化。在植物方

面，植物與病原菌的交互作用中，不管是造成植物罹病或引起植物的防禦反應，都有自由基有關。此外植物在逆境中成長或植物的衰老也與植物體內的自由基有關，而且在植物體內有一套抗氧化的系統，可以抵抗自由基所帶來的傷害。在動物方面，巨噬細胞內產生的自由基有助於加強動物體的防禦能力。然而在血管細胞產生的自由基則可以當做血管收縮或血管舒張的訊號傳遞物質。此外，動物體內產生過多的自由基與疾病及老化有很大關聯性，而且動物體內有抗氧化系統可以減弱自由基所帶來的傷害。由於自由基的研究已持續多年，理論基礎已趨穩定，而且已深入一般日常生活中，因此，我們擬開設此課程介紹學生基礎的自由基生物學概念及其應用。

Free Radical Biology

2 S

C.H.Yen

A free radical is defined as any atom, ion or molecule with unpaired electron, and it is unavoidably produced in an organism that has the ability to utilize oxygen as an energy source. Free radicals play important multiple roles in an organism. In plants, free radicals are involved in growth, disease, immunity, apoptosis or environmental stress. In vertebrates, free radicals act as second messengers mediated inflammation, cardiovascular function, immune responsiveness, aging and so on. However, there is an antioxidant system in an organism to regulate the free radicals-induced effects. Since the study of free radical biology have been explored for a long time and the fundamental knowledge or theory is well established, we will introduce the concepts and application of free radicals in plants and vertebrates to undergraduates (fourth-degree) in Department of Life Sciences.

校外實習

1 選

輪授

為促進本系學生有實際參與生命科學相關產業的機會，本系擬開設校外實習課程。目前已經在進行接洽的實習單位有動物中心(林口長庚醫院)、遠東藍藻工業股份有限公司、國立科學工藝博物館及特有生物研究保育中心(南投縣集集鎮)等。

Practical Training

1 S

Rotation

For understanding the detail of life sciences-related industries, we will offer the Practical Training Course to undergraduates (third-degree) in Department of Life Sciences to have an opportunity to join the cooperative organization such as Animal Center in Chang-Gung Memorial Hospital (Linkuo), Far East Microalgae Ind. Co., Ltd., National Science and Technology Museum and Endemic Species Research Institute.

動物疫苗所 96-2 新增課程中英文摘要

一、研究所

微生物學特論

3 選

莊國賓

了解微生物特性在疫苗的製作上是非常重要的，所以本堂課除了從細菌基本構造講起外，也談到細菌和疾病之間的關係，並且講述微生物的致病機轉，唯有了解微生物的致病機轉才能找到製作疫苗最好的方法及目標，最後談到目前利用微生物在製作疫苗上最新的方法及策略，對將來疫苗發展有重大幫助。

Special Topic on the Microorganism

3 S

K.P. CHUANG

To understand the characters of microorganisms is very important for vaccines development. In this class, we will introduce the structure of microorganisms and the relationship between microorganisms and diseases. The students can realize the pathogenesis of microorganisms and find out the best targets and new strategies for vaccines development. Hence, students can obtain knowledge for future vaccines development on this class.

畜產系 96-2 新增課程中英文摘要

一、大學部

馬學

2 選

劉炳燦、劉世賢

本課程係討論馬的飼養及管理有關的各項問題，內容包括有養馬事業的歷史與發展、馬的鑑別與選拔、品種與類型、營養與飼料、日常照料、行為與調教、馬廄管理、馬的放牧及衛生管理。

Equine Science

2 S

B.T. Liu、S.S. Liu

The course will deal with the feeding and management of horse. It will cover the history and development of the horses industry, selecting and judging horses, breeds and types of horses, nutrition and feeds for horses, feeding and management, horse behavior and training, pasture for horses, and horses health, disease prevention, and parasite control.

馬學實習

1 選

劉炳燦、劉世賢

本實習課程旨在探討馬的習性、飼養管理及御馬，並使學生習得馬飼養、清潔、修蹄、騎乘之基本技能。主要課程內容包括：馬的習性、馬舍管理、馬之調教清潔、馬蹄保護及騎乘。

Equine Science Practice

1 S

B.T. Liu、S.S. Liu

The purpose of this course is to give students more familiar with horse behavior, management, horse training, and horse driving. It contains: horse behavior and training, care and management, herd health, hoof care, and the skill of horses riding.

二、碩士班

動物複製學

2 選

沈朋志

本課程主要目的乃希望結胚胎學，胚顯微操作技術與銘印基因表現調控理論，讓學生了解動物複製的基本知識及其於農業及醫學之應用層面，進而提供他們未來能於生物科學領域之相關研究，得以更進一步的探究。

Animal Cloning

2 S

P. C. Shen

The purpose of this course aims to combine the embryology, the technique of embryo micromanipulation and the regulation of imprinting gene for the students to understand the principle and knowledge of animal cloning and its application in

agriculture and Medical science. Several techniques pertaining to bioscience will also be discussed to strengthen the students with the ability for future advanced studies.

動物複製學實習

1 選

沈朋志

本課程主要提供學生對於動物複製相關實驗之基本操作。課程內容包括：胚之培養與操作、受核卵母細胞之體外生產、供核細胞之製備及冷凍保存、受核卵母細胞之去核操作、供核細胞之注入、複製胚之電融合與激活處理。

Animal Cloning Lab

1 S

P. C. Shen

This course is to offer students about the basic practice of animal cloning. The contents of the basic practice include: culture and manipulation of embryos, in vitro production of recipient oocytes, preparation and cryopreservation of donor cells, enucleation of recipient oocytes, microinjection of donor cells, cell fusion and activation of cloned embryos.

工學院新增課程 中英文摘要

環工系 96-2 新增課程中英文摘要

一、大學部

厭氧醱酵模廠實作

3 選

郭文健

本厭氧醱酵模廠實作課程的目的在於透過厭氧醱酵模廠的連續操作運轉，建立操控參數，負荷條件，污染物去除效率，以及甲烷(或氫)之產生速率等指標參數，提供學生對厭氧生物科技的一個基本認識，進而透過實際之進、出成份分析檢測，模廠操作問題診斷與故障排除實作，以第一手之實際操作達到工程實務訓練之目的。

Laboratory of anaerobic digestion pilot plant

3 S

Wen-Chien Kuo

This course aims at providing the students a fundamental understanding of the anaerobic biotechnology through the operation of a pilot plant. In the operation, students will have the hand-on experiences to operate the system, to establish the operational parameters and loading factors, to evaluate the system performance, and to find out the pollutant removal efficiency and gas production rate. It is expected that, after this course students will have the experience in real engineering practices regarding anaerobic digestion of organic waste.

機械系 96-2 新增課程中英文摘要

一、大學部

自動化工程

2 選

林宜弘

本課程介紹從自動化零組件到自動化系統的設計、加工與組裝等實務技術，並著重在機構設計的基礎設計理念，內容涵蓋光機實際機台之設計，使得學生更清楚了解理論與實際之結合應用。同時培訓 3D 電腦繪圖技術來輔助設計，使學生將所設計作品經繪圖，實務加工圖面的表達，透過虛擬實境 CNC 加工機的教學軟體，藉由 CAD 與 CAM 的教學實際應用，最後實務加工之操練。培養學生具備敬業、負責、勤奮、合作等職業道德及良好之繪圖、設計以及加工之理念。課程著重於光機系統之實務設計，校外實習成果報告涵蓋精密零件加工、檢驗與自動化檢測機台之完整系統設計圖、零件加工及組裝等。

Automatic Engineering

2 S

Yi Hong, Lin

This course introduces the practical automatic technology including mechanic elements and system design. In this course, the mechanic elements machining aided by an interactive virtual CNC milling and practical CNC milling also be included. Meanwhile, this course illustrates some opto-mechatronic systems as case study examples. The 3D computer mechanical drawing technique is introduced to train students with the hands on abilities in designing automatic machine. Also, students must learn automatic mechanical elements design and application.

自動化工程實習

1 選

林宜弘

本課程強調實作能力的培訓，訓練重點將自動化系統透過實作實習予以完成。實習內容包括(1)自動化系統電腦輔助繪圖設計、(2)自動化組裝系統之設計實作、(3)自動化搬移系統之實作設計、(4)自動化檢測系統之設計實作等。

Automatic Engineering Practice

1 S

Yi Hong, Lin

This practical course trains students to obtain the ability to hands on the

Automatic Engineering system。The contents of this course include some industrial practical topics as follows: (1) Practical design on the automatic engineering system aided by computer aided design(CAD) (2) Practical design on the assembling of automatic engineering system (3) Practical design on pick and place automatic system (4) Practical design on the automatic optical inspection system。

光機系統設計

2 選

黃國政

本課程介紹光機系統設計與檢測之應用，著重在光機系統設計之基本原理及應用。同時介紹使用光學分析軟體 Apilux 以及 Optalix 兩套軟體，分別設計光學鏡片與光機系統，設計後進行加工，組裝與檢驗等實作培訓，使學生具備理論與實作之實務經驗。培養學生具備敬業、負責、勤奮、合作等職業道德及良好的工作方法。課程著重於光學元件設計與實作之培訓，作業涵蓋鏡頭初階設計、光機系統設計以及鏡片實際製作與檢驗等問題。

Opto-Mechatronic System Design

2 S

Kuo Cheng, Huang

This course will introduce the design of opto-mechatronic system. The contents of this focus on the principle, design and application of opto-mechatronic system. In this course, optical software including Apilux and Optalix optical analysis tools will be used to train students with the abilities in designing optical elements and system. The design, manufacture and inspection of lens elements will be practiced in this course. The public optical system will be analyzed and design in this course

光機系統設計實習

1 選

黃國政

本課程強調實作能力的培訓，訓練重點將光機系統透過實作實習予以完成。實習內容包括(1)光機系統的光學分析與設計、(2)透鏡元件的加工與檢測、(3)鏡頭的設計、組裝及檢測、(4)車燈的設計與檢測等。

Opto-Mechatronic System Design and Practice

1 S

Kuo Cheng, Huang

This practical course trains students to obtain the ability to hands on the Opto- Mechatronic system。The contents of this course include some industrious practical topics as follows:(1)the optical analysis and design on opto-mechatronic

system (2)lens elements manufacture and inspection (3)lens design ,assembling
and Inspection (4)vehicle lighting system design and inspection

土木工程系 96-2 新增課程中英文摘要

一、大學部和碩士班

營建自動化

3 選

柯千禾

本課程之目的在讓學生了解營建自動化的涵義，並具備運用自動化技術提升營建生產力之能力，內容包含(1)經濟有效性分析，(2)規劃自動化，(3)施工自動化，(4)管理自動化，(5)機具自動化，(6)人因工程，與(7)機器人製作，最後透過自動化競賽評定成績。

Automation in Construction

3 S

Chien-Ho, Ko

This course introduces the benefits of construction automation. Through the course, students can identify opportunities for improving construction productivity using robots. The contents of the course include: (1) economic effectiveness evaluation, (2) planning automation, (3) construction automation, (4) management automation, (5) equipment automation, (6) human factors, and (7) robot design. The course is finalized by a competition of construction automation.

精實營建系統

3 選

柯千禾

本課程之目的在讓學生了解製造系統的基本行為，並具備將其應用於營建管理之能力，內容包含(1)精實營建定義，(2)製造業發展沿革，(3)即時生產，(4)推式與拉式生產，與(5)最後規劃者系統。

Lean Construction Systems

3 S

Chien-Ho, Ko

This course introduces the underlying behavior of manufacturing systems. Through the course, students can identify opportunities for improving existing systems using lean concepts. The contents of the course include: (1) definition of lean construction, (2) manufacturing history, (3) the JIT revolution, (4) push and pull production systems, and (5) The Last Planner.

材料工程系 96-2 新增課程中英文摘要

一、碩士班

前瞻性太陽能電池設計與趨勢

3 選

楊茹媛

本課程的目的是提供有關太陽能電池技術和其實際應用的知識。各章節將分別介紹太陽能電池的原理，性質，及各種不同形式太陽能電池之設計原理。另外也將介紹太陽能電池的製造過程及量測方法與原理。最後，將對台灣與全球之太陽能電池產業之發展趨勢作一介紹。【內容綱要】：晶片型矽基太陽能電池、薄膜型矽基太陽能電池、化合物太陽能電池、染料敏化太陽能電池、有機/無機太陽能電池、奈米結構太陽能電池

The Design and Trend of Original Solar Cell

3 S

Ru-Yuan, Yang

This course is focus on the knowledge of solar cell technology and its application. The chapters introduce the principle and the properties of the solar cell and the design rules and principle of different type solar cell, individually. Furthermore, it will be introduced on the process and method of measurement of solar cell. Finally, the trend of industry of solar cell in Taiwan and in global are also introduced. 【Subject】: Silicon wafer based solar cell、Silicon thin film solar cell、Compound solar cell、Dye-sensitized solar cell、Organic /Inorganic solar cell、Nano-structural solar cell

材料工程系 96-2 追認課程中英文摘要

一、碩士班

452028 光電元件物理

3 選

楊茹媛

本課程為半導體科技的基礎課程，對今日所用之固態物理元件皆有詳盡之分析，因此本課程重點包括：能帶及載子、載子傳輸現象、P-N 接面、二極體元件、接面場效電晶體、絕緣閘極場效電晶體，以深化學生之物理概念。

452028 Physics of Semiconductor Devices

3 S

Ru-Yuan Yang

The course of physics of optoelectronic devices introduces the theoretical background and methods for the calculation of semiconductor band-structures. The contents include : Energy Bands and Carrier、Carrier transport phenomena、p - n junction、Bipolar Device、Field effect transistor、MOSFET. The fundamental physical principles based on electro-magnetics, solid state physics, semiconductor physics, and quantum mechanics are presented.

452030 半導體與光電元件製程與設備

3 選

楊茹媛

半導體產業是現代科技的代名詞，IC 設計、半導體製程、封裝、測試是 IC 元件生產的幾個重要階段。本課程將對半導體製程做一個完整的介紹，讓學生瞭解半導體產業製程的基本步驟、原理與應用。因此本課程包括：VLSI 製造技術介紹、晶體成長 晶片製備 晶體缺陷、半導體物理、微影、氧化、擴散、離子佈值、化學汽相蒸鍍、物理汽相蒸鍍、蝕刻、隔離與金屬化。

452030 Semiconductor Processings

3 S

Ru-Yuan Yang

The modern industry is semiconductor technology. They are important processes such as IC design, package, test, device manufacture, etc. The contents including : Overview of VLSI fabrication technology、Crystal Growth, Wafer Preparation and Crystalline Defects、Physics of Semiconductor、Lithography、Oxidation、Diffusion、Ion Implantation、Chemical Vapor

Deposition、Physical Vapor Deposition、Etching、Isolation and Metalization. The object in the course is to help students understanding the basal processes in the semiconductor industry.

財金所 96-2 新增課程中英文摘要

一、研究所

保險市場專題

3 選

黃鴻禧、上

本課程旨在討論人壽保險、財產保險和責任保險的某些特定主題。在各種保險商品下，課程內容主要集中於保險定價、保險經濟和保險經營。

Special Topics on Insurance Markets

3 S

H. H. Huang, F

This course discusses some special topics on the life insurance, property insurance and liability insurance. Under various insurances, the main contents focus on the insurance pricing, insurance economics, and insurance operation.

投資銀行管理

3 選

黃鴻禧、上

本課程旨在探討投資銀行管理相關議題。包括國內及國際承銷、私募、創投評估、企業評價、購併業務、民營化規劃及金融資產管理等議題。

Investment Banking Management

3S

H. H. Huang, F

This course aims to discuss the related issues of investment banking management. The contents include the domestic and international underwritings, private placements, joint ventures, business evaluation, M&A, privatization planning and financial asset management, etc.

財富管理專題

3 選

黃鴻禧、上

本課程旨在探討與財富管理相關之專題，內容包括全球財富管理市場、資產配置、財富管理相關金融商品、風險管理、稅務專題及理財人員職能與職業倫理等專題。

Special Topics on Wealth Management

3S

H. H. Huang, F

This course aims to discuss the related issues on wealth management. The contents include the global wealth management market, asset allocation, wealth management related financial commodities, risk management, taxes related issues and ethics issues, etc.

金融創新

3 選

黃鴻禧、上

本課程旨在使學生了解金融創新的相關議題。內容包括金融商品與金融創新、衍生性金融商品及財務工程與金融創新等

Financial Innovations

3S

H. H. Huang, F

This course aims to help students familiar with the related issues of financial innovations. The contents include financial commodities and financial innovations, derivatives, and financial engineerings, etc.

專案融資

3 選

洪仁杰、上

本課程旨在探討專案融資的相關議題。內容包括專案類型、專案開發預算、專案成本對資本結構影響、融資規劃與安排、專業營收及成本控制等議題。

Project Financing

3S

R. J. Hung, S

This course aims to discuss the related issues of project financing. The contents include the project types, project budgets, the influences of project costs on capital structure, sources of financing and financing arrangements, project revenues and costs control, etc.

證券分析專題

3 選

林坤輝、上

本課程旨在探討證券分析相關議題。內容包括有價證券價格決定理論、總體經濟分析、產業分析、公司分析、技術分析、投資機會管理及風險管理等議題。

Special Topics on Security Analysis

3 S

K. H. Lin, S

This course aims to discuss the related issues of security analysis. The contents include the price determining theories, macro economy analysis, industry analysis, company analysis, technical analysis, portfolio management and risk management, etc.

基金管理

3 選

黃鴻禧、上

本課程旨在探討共同基金市場結構、基金商品、商品設計原理、行銷管理、基金操作實務及市場價格決定因素等。

Fund Management

3 S

H. H. Huang, F

This course aims to discuss the market structure of mutual fund, financial commodities design principles, marketing strategies, operation practices of mutual fund managers and determinants of mutual fund prices.

金融行銷

3 選

黃鴻禧、上

本課程旨在在探討金融業行銷策略之選擇及運用，以培養學生金融商品行銷能力。內容包括：各種金融商品財務分析方法之應用、產業分析、SWOT 分析、行銷策略分析等。

Financial Marketing

3S

H. H. Huang, F

This course aims to investigate the selections and applications of marketing strategies for financial institutions. The contents include the applications of analysis for financial commodities, industry analysis, SWOT and marketing strategies for financial commodities.

企業管理系 96-2 新增課程中英文摘要

一、大學部

582090 商業英文書報導讀

3 選

廖世義, 上

本課程主要在培養學生具備商業英文書報專業閱讀之技能，經由了解商業英文與一般英語不同之文法結構及用字遣詞，透過本課程學習商業頭條新聞與商務詞彙，定期閱讀哈佛管理評論，NEWSWEEK, TIME 及讀者文摘，廣告雜誌等英文書報雜誌，一方面增加對瞬息萬變的現代國際社會的認識，跟上時代潮流、融入並成為國際村的一份子；另一方面提高學生的英文了解能力及學習興趣。並針對其做一一詳述閱讀分析文章的技巧，如版面元素、文章結構到閱讀技巧，循序漸進，紮實學習閱讀英語書報。促使本系學生除修習本身專業技能外，更能擴展國際商務秘書之能力，以提昇其就業的競爭能力。尤其著重於實際的習作，學生們經由實際的習作，以改進他們一般的英文錯誤，進而學得良好的英文閱讀技巧。

582090 Journalism English Reading in Business 3 S S. Y. Liaw, F32090 Journalism

This course aims to acquaint students with the structural and stylistic characteristics of business journal in English, such as business newspaper headlines and commercial vocabulary of the media. With such acquaintance, on one hand, students are able to catch up with the changing business world, inform themselves with the latest business trends and knowledge developed, and become a member of the global society. On the other hand, students are also able to improve their knowledge of the language itself with the exposure to business news stories in English. Material used in class will be from Harvard Business Review, Newsweek, TIME, Reader's Digest, and advertisement magazines. Articles reading, structure analyzing, group discussion and listening activities are covered in the going of the class. Through practical repeated exercises in English reading, students then can improve their common errors in English and learn English reading skills.

資訊管理系 96-2 新增課程中英文摘要

一、大學部

技術證照專題

3 選

龔旭陽、上

本課程提供國內外專業的技術證照取得的相關課程訓練，讓學生在擁有良好的知識理論基礎下，透過專業證照的課程研習以及實際操作訓練，讓學生在進入職場前就已擁有實務經驗以及專長證照，為未來的職場生涯鋪路以及加分的效果。本課程主要包含下列四個方向：軟體規劃與設計、網路規劃與管理、資料庫規劃與管理、產業 e 化規劃。而對於學生而言，每經由一個專業學程的學習之後，即可參加該項學程所提供之專業認證課程，藉由輔助認證的軟硬體設備資源，提供學生一條取得專業認證的管道，並以本位課程的教育模式來達到理論面與實務面的學習整合，可讓學生獲得相關理論知識與業界實務之技術，取得產業界聘用之準則。

Abstract of Technology Professional

3 S

H.Y. Kung, F

Certification Training Project

The purpose of Technology Professional Certification Training Project is in four aspects: Software System Design and Management, Network System Design and Management, Database System Design and Management, and Industry Electronic Planning Design and Management. This course provides students with fundamental knowledge and technology skill training for the purpose to help student to obtain the national and international professional certifications.

管理證照專題

3 選

龔旭陽、下

本課程提供國內外專業的技術證照取得的相關課程訓練，讓學生在擁有良好的知識理論基礎下，透過專業證照的課程研習以及實際操作訓練，讓學生在進入職場前就已擁有實務經驗以及專長證照，為未來的職場生涯鋪路以及加分的效果。本課程主要包含下列四個方向：軟體規劃與設計、網路規劃與管理、資料庫規劃與管理、產業 e 化規劃。而對於學生而言，每經由一個專業學程的學習之後，即可參加該項學程所提供之專業認證課程，藉由輔助認證的軟硬體設備資源，提供學生一條取得專業認證的管道，並以本位課程的教育模式來達到理論面與實務面的學習整合，可讓學生獲得相關理論知識與業界實務之技術，取得產業界聘用之準則。

Abstract of Management Professional**3 S****H.Y. Kung, S****Certification Training Project**

The purpose of Management Professional Certification Training Project is in four aspects: Software System Design and Management, Network System Design and Management, Database System Design and Management, and Industry Electronic Planning Design and Management. This course provides students with fundamental knowledge and technology skill training for the purpose to help student to obtain the national and international professional certifications.

智慧型行動機器人**3 選 黃申在、上、程式設計**

本課程介紹行動機器人的基礎知識與智慧化機能, 包括機構面向的機械、電機、感知器、致動器等方面的物理原理與知識; 硬體物理基礎上, 進行認知、自主化、智慧化與社會化層級的相關理論與演算法等人工智慧軟體技術面議題。前者含括移動、行動機器人動力學、感知器原理與模式, 後者包括感知不確定性、定位與地圖構建、移動規劃與巡航、多重機器人等。

Intelligent Autonomous Mobile Robots 3 S S.T. Huang, F, Programming

This course is designed to present an introduction to the fundamentals of mobile robotics and some aspects of intelligence mechanisms. It spans the mechanical, motor, sensory, perceptual layer, cognitive and intelligence layers, and sociable and multiple robots that comprise the field. Specific topics include locomotion、mobile robot kinematics、perception、uncertainty and feature extraction、localization and mapping、planning and navigation、issues of sociability and multi-robots。

音訊處理**3 選****劉寧漢、上**

本課程之目的在提供同學對音訊處理的基本概念, 學習如何使用電腦程式來實做驗證各種音訊處理的方法, 以符合音訊在多媒體方面的應用需求, 本課程中並將廣泛地討論電腦音樂及數位音訊處理可能之研究方向, 利如: 音訊編碼、音訊壓縮及音訊辨識。

Audio Signal Processing**3 S****N.H. Liu, F**

This course is to provide the students with the basic concept of audio signal processing, together with the implementation of the concept and theory with a programming language. The audio/speech signal processing techniques taught in this course can be further used for recognition and synthesis in conjunction with other

current demands for multimedia applications. Moreover, the applications and research issues of computer music and audio signals processing will be discussed in this course, e.g., audio encoding, audio compression and audio recognition.

資料探勘應用

3 選

蔡玉娟、下

本課程主要目的為介紹資料探勘的技術及網路行銷策略，課程內容包含：簡介資料探勘與網路行銷；2. 資料探勘與網路行銷範例；3. 網路行銷策略；4. 關聯法則及其實務應用；5. 次序相關分析及其實務應用；6. 模糊理論及其實務應用；7. 類神經網路及其實務應用；8. 基因演算法及其實務應用；9. 資料探勘技術在網路行銷的應用

Application of Data Mining

3 S

Y.J. Tsay, S

The purpose of this course is to introduce the techniques of data mining and the strategies of internet marketing. The course contains the following topics: 1. Introduction to Data Mining and Internet Marketing; 2. Examples of Data Mining and Internet Marketing; 3. Strategies of Internet Marketing; 4. Association Rule Techniques and Applications; 5. Sequential Pattern Analysis Techniques and Applications; 6. Fuzzy Sets Techniques and Applications; 7. Artificial Neural Networks Techniques and Applications; 8. Genetic Algorithms Techniques and Applications; 9. Data Mining Techniques on Internet Marketing.

電子金融安全與應用

3 選

邵敏華、下

本課程旨在探討各式處理線上貨幣交易的方式，重新檢視網路上傳統付款模組的應用，並且討論在線上貨幣交易支援中安全性所扮演的角色。因此，以網路為基礎的貨幣交易包括線上信用卡交易系統、電子支票和資金移轉、電子現金付款系統、小額付款交易、以及行動商務付款機制等。

Security and Application on Electronic

3 S

M.H. Shao, S

Payment Systems

The objective of the course is to introduce the characteristics and mechanisms of electronic payment systems and related cryptographic techniques for electronic commerce. The contents include credit card-based systems, electronic checks and account transfers, electronic cash payment systems, micropayment systems, and mobile commerce.

二、碩士班**智慧型行動機器人****3 選 黃申在、上、程式設計**

本課程介紹行動機器人的基礎知識與智慧化機能,包括機構面向的機械、電機、感知器、致動器等方面的物理原理與知識;硬體物理基礎上,進行認知、自主化、智慧化與社會化層級的相關理論與演算法等人工智慧軟體技術面議題。前者含括移動、行動機器人動力學、感知器原理與模式,後者包括感知不確定性、定位與地圖構建、移動規劃與巡航、多重機器人等。

Intelligent Autonomous Mobile Robots 3 S S.T. Huang, F, Programming

This course is designed to present an introduction to the fundamentals of mobile robotics and some aspects of intelligence mechanisms. It spans the mechanical, motor, sensory, perceptual layer, cognitive and intelligence layers, and sociable and multiple robots that comprise the field. Specific topics include locomotion, mobile robots kinematics, perception, uncertainty and feature extraction, localization and mapping, planning and navigation, issues of sociability and multi-robots.

音訊辨識**3 選****劉寧漢、下**

音訊辨識在各個應用領域使用非常廣泛,例如行動電話的語音撥號、家電用品的控制及電腦的語音輸入,本課程除提供同學對音訊辨識的基本概念,也將學習如何使用電腦程式來實做驗證各種音訊識別的方法,本課程中亦將廣泛地討論目前的音訊辨識研究現況與未來的發展。

Audio Signal Recognition**3 S****N.H.Liu, S**

Audio signal recognition is useful in a lot of applications, e.g., dialog by audio on smart phone, electrical appliances control and the speech recognition on computer. This course is to provide the students with the basic concept of audio signal recognition, together with the implementation of the concept with a programming language. Moreover, the state of arts and research issues of audio signals recognition are discussed in this course.

行動商務安全與應用

3 選

邵敏華、下

本課程將從行動商務的簡介開始，探討行動商務的安全威脅，以及相關的行動商務安全技術，再加入行動商務的相關應用機制的設計與建置，進而深入探討行動商務安全管理技術。

Mobile Commerce Security and Applications

3 S

M.H. Shao, S

The aim of the course is to introduce security concerns related to mobile commerce. The security threats, cryptographic techniques, security services and management are discussed in detail.

三、碩專班

管理資訊系統專題

3 選

黃明祥、上

本課程主要是提供研究生從事於資訊管理研究與資訊專業人員必備的專業知識與技能。本課程的主要內容包括：(1) 數位化經濟時代的挑戰，(2) 資訊科技策略，(3) 資訊系統策略規劃，(4) 專案規劃與控管，(5) 電子商務的基礎架構與運作，(6) 資訊政治與權力運作，(7) 資訊系統安全管理，(8) 數位化經濟時代之知識管理。

Managemet Information Systems Project

3 S

M.S. Huang, F

This course provides graduate students with knowledge about information research methodology and management skills for researchers and practitioners. The major topics of this course include: (1) challenges in digital economy age (2) information technology strategy, (3) strategic information systems planning, (4) project planning and control, (5) Information infrastructure for electronic commerce, (6) information politics and power manipulation, (7) security management of information systems, and (8) knowledge management in digital economy age.

計算式智慧專題

3 選

蔡正發、上

本課程涵蓋不同的智慧型計算方法，主要包括基因演算法、基因規劃、類神經網路、及其混合應用。前兩項主要包括如何定義不同的基因表示法來代表特定問題的解，再利用遺傳學上有關基因複製、重組、突變等現象及相關技巧來尋找最適當的基因組合以解決該問題。類神經網路部份則將介紹不同類型的網路、它們的適用範圍、及如何訓練類神經網路來解

決問題。

Computational Intelligence project

3 S

C.F. Tsai, F

This course mainly includes the introduction of various intelligent computation techniques (Genetic Algorithms, Genetic Programming, Neural Networks, etc) and how to use them to solve problems in different domains. GA and GP parts involve how to define a genetic representation for a problem to be solved, and then apply the evolutionary techniques, such as reproduction, recombination and mutation to produce solutions which suit the problem the most. Different kinds of Neural Networks, such as feed-forward, recurrent, and Hopfield nets, and their corresponding training methods will also be introduced in this course.

資料倉儲與知識挖掘專題

3 選

蔡正發、上

資料倉儲與知識挖掘是一門以資料庫技術為主，並涵蓋多領域之學科，其中包含了資料庫技術、人工智慧、機器學習、統計、圖型辨識、知識系統、知識獲取、資訊存取、高效能計算與資料視覺等學科。本課程內容包含以下主題：1. 資料倉儲與線上分析處理(OLAP) 2. 資料探勘程序 3. 資料探勘技術 4. 資料探勘軟體 5. 網頁資料探勘。在本課程中，學生可依自己之喜好選擇以實作導向或應用導向為基礎之專題研究報告。

Data Warehouse and Knowledge

3 S

C.F. Tsai, F

Discovery project

Data warehouse and knowledge discovery is a multidisciplinary field, drawing work from areas including database technology, artificial intelligence, machine learning, statistics, pattern recognition, knowledge-based systems, knowledge acquisition, information retrieval, high-performance computing, and data visualization. The course content includes the following: (1) data warehouse and Online Analytical Processing (OLAP) (2) data mining process (3) data mining techniques (4) data mining software (5) web mining. The students may have two options for the term project in this course: implementation-based and application-based. The students can, based on their preference, choose either one.

人工智慧專題

3 選

陳灯能、下

經由實例之探討瞭解目前人工智慧在商業上之應用所遭遇之困難，進而結合人工智慧之理論，解決問題。課程內容包含：1. 人工智慧介紹，2. 基本找尋，3. 最佳代尋，4. 機器學習，5. 神經網路，6. 模糊理論，7. 基因演算法。

Artificial Intelligence Practice

3 S D.N. Chen、N.H. Liu, S

Through the business problems we face, we propose the solutions to solve based on the AI techniques. The course materials are as follows: 1. Introduction to AI, 2. Basic Search, 3. Optimal Search, 4. Machine Learning, 5. Neural Network, 6. Fuzzy Set theory, 7. Genetic Algorithm.

行動商務安全與應用

3 選

邵敏華、下

本課程將從行動商務的簡介開始，探討行動商務的安全威脅，以及相關的行動商務安全技術，再加入行動商務的相關應用機制的設計與建置，進而深入探討行動商務安全管理技術。

Mobile Commerce Security and Applications

3 S

M.H. Shao, S

The aim of the course is to introduce security concerns related to mobile commerce. The security threats, cryptographic techniques, security services and management are discussed in detail.

音訊處理與辨識

3 選

劉寧漢、下

音訊處理與辨識在各個應用領域使用非常廣泛，例如行動電話的語音撥號、家電用品的控制及電腦的語音輸入，本課程之目的在提供同學對音訊處理及辨識的基本概念，學習如何使用電腦程式來實做驗證各種音訊處理與辨識的方法，以符合音訊在多媒體方面的應用需求。本課程中亦將廣泛地討論目前的音訊處理與辨識研究現況與未來的發展。

Audio Signal Processing and Recognition

3 S

N.H. Liu, S

Audio signal processing and recognition are useful in a lot of applications, e.g., dialog by audio on smart phone, electrical appliances control and the speech recognition for computer. This course is to provide the students with the basic concept of audio signal processing and recognition, together with the implementation of the concept with a programming language. The audio/speech signal processing and recognition techniques taught in this course can be further used for multimedia applications. Moreover, the state of arts and research issues of audio signals processing and recognition are discussed in this course.

資訊系統稽核與管理

3 選

邵敏華、下

本課程先從資訊安全管理概論讓學生能對安全管理的議題有初步的認識，接著陸續探討資訊安全政策、資訊安全風險分析與資訊安全管理制度的導入等各方面切入了解，最後讓學生了解稽核的流程並持續改善。

Information Systems Audit and Management

3 S

M.H. Shao, S

The purpose of the course is an examination of the controls within an Information technology (IT) infrastructure. The primary functions of an IT audit are to evaluate the system's efficacy and security protocols, in particular, to evaluate the organization's ability to protect its information assets and properly dispense information to authorized parties. The evaluation of obtained evidence determines if the information systems are safeguarding assets, maintaining data integrity, and operating effectively and efficiently to achieve the organization's goals or objectives.

知識管理專題

3 選

陳灯能、上

知識資產是現代組織競爭力的最重要來源，如何有效利用並提升知識資產的競爭力，是組織經營的最重要議題。本課程首先簡介知識管理相關概念，分別從學術理論及實務應用的角度介紹知識管理，並進而討論最新的知識管理研究，能夠培養學生知識管理的相關素養。

Knowledge Management Practice

3 S

D.N. Chen, F

In recent years, knowledge asset has been the most important resource of organizations, and research in knowledge management has gained much attention. In this class, we will introduce the concepts of knowledge management based on academic theories and practical cases. This will be much helpful to students' understandings of knowledge management.

電子商務專題

3 選

陳灯能、下

商用電子通訊課程之目的 (1) 建立電腦網路基本觀念與技術 (2) 學習電腦網路建置，包括線材，設備，和架構 (3) 電腦網路之商業考量，包括建置策略，商業用途和成本分析、學生在修習本課程時，將提交一網路建置專題，以將課堂之理論實際驗證於專題練習中。學生在修畢本課程時，以具電腦網路觀念與技術，並且有能力獨立建置實用之商用電腦網路。

Electric Commerce Practice

3 S D.N. Chen, S

The purposes of the "Business Data Communication" are (1) to introduce the fundamental concept and technology of computer networks, (2) to learn the technology of constructing computer networks, including the network architecture, the types of transmission media, and network equipment, and (3) to introduce the business concerns of computer networks, including the construction policy and cost analysis. The students are requested to finish a project, which is to construct a business computer network. After studying this course, the students should have the concepts of business computer networks and the skills of constructing business computer networks.

供應鏈管理專題

3 選 劉書助、下

供應鏈管理為管理一產業上、中、下鏈節間原料供應、產品製造、物件配送、成品銷售的連鎖行為。本課程講授目的為使學生瞭解各產業供應鏈之實務及其管理之知識。內容包括：供應鏈管理概念、供應鏈常用軟體、供應鏈線性模式、供應鏈非線性模式、供應鏈隨機模式、供應鏈系統設計。

Seminar on Supply Chain Management

3 S S.C. Liu, S

This course will teach students to learn the knowledge of supply chain management. The contents are as followings: Introduction to supply chain management, Software for supply chain management, Linear modeling for supply chain management, Nonlinear modeling for supply chain management, Stochastic modeling for supply chain management, System design for supply chain management

決策分析專題

3 選 劉書助、下

經由決策分析探討目前工程與管理決策問題中所遭遇之困難，進而結合決策之理論，解決問題。課程內容包含：1. 決策之形成(意義、組成、問題等)，2. 多屬性決策，3. 多目標決策，4. 決策樹，5. 實例探討。

Seminar on Decision Analysis

3 S S.C. Liu, S

Through the decision problems we face in engineering and management domains, we propose the solutions to solve based on the decision analysis. The course materials are as follows: 1.Introduction to Decision Making, 2.Multiple Attribute Decision Making, 3.Multiple Objective Decision Making, 4.Decision Tree, 5.Real Problem Discussing.

資料探勘專題**3 選****蔡玉娟、下**

本課程主要目的為介紹資料探勘的技術及網路行銷策略，課程內容包含：簡介資料探勘與網路行銷；2. 資料探勘與網路行銷範例；3. 網路行銷策略；4. 關聯法則及其實務應用；5. 次序相關分析及其實務應用；6. 模糊理論及其實務應用；7. 類神經網路及其實務應用；8. 基因演算法及其實務應用；9. 資料探勘技術在網路行銷的應用

Data Mining project**3 S****Y.J. Tsay, S**

The purpose of this course is to introduce the techniques of data mining and the strategies of internet marketing. The course contains the following topics: 1. Introduction to Data Mining and Internet Marketing; 2. Examples of Data Mining and Internet Marketing; 3. Strategies of Internet Marketing; 4. Association Rule Techniques and Applications; 5. Sequential Pattern Analysis Techniques and Applications; 6. Fuzzy Sets Techniques and Applications; 7. Artificial Neural Networks Techniques and Applications; 8. Genetic Algorithms Techniques and Applications; 9. Data Mining Techniques on Internet Marketing.

多變量分析專題**3 選****蔡玉娟、下**

本課程主要介紹統計的基本概念、統計推估、假設檢定、變異數分析、迴歸分析及多變量分析，介紹與比較各種統計方法在經營管理及商業上的應用時機，討論統計在商業及管理應的重要相關文獻。

Multivariate Analysis project**3 S****Y.J. Tsay, S**

The purposes of this course are to introduce the basic concepts of commercial statistics and the methods of statistics in commercial research. The major objectives include estimation, test hypothesis, analysis of variance, analysis of regression and multivariate analysis.

高等資料庫系統專題**3 選****蔡正發、下**

本課程旨在提供學生對於較重要及進階的資料庫技術及其相關領域有一完整堅實的教育，特別是針對在此一領域內目前或未來所發展的方向能有完整的了解。本課程共分為八部份：1. 進階資料探勘方法 2. 分散式資料庫系統 3. 行動資料庫 4. 物件導向資料庫系統 5. 空間資料庫系統 6. 時間資料庫系統 7. 主動資料庫系統 8. 演繹資料庫系統。

Advanced DBMS project**3 S****C.F. Tsai, S**

This course provides several critical topics for a solid education in the advanced of database technology and related fields, and in particular to pave the way for an understanding of the directions in which the fields is currently developing and is likely to develop in the future. It is divided into eight major parts : (1) advanced data mining approaches (2) distributed database systems (3) mobile databases (4) object-oriented database systems (5) spatial database systems (6) temporal database systems (7) active database systems (8) deductive database systems.

行動式通訊網路系統與應用**3 選****龔旭陽、下**

隨著無線與行動寬頻網際網路(Wireless and Mobile Broadband Internet)的逐漸實踐, 多彩多姿、內容豐富的多媒體資訊應用系統, 例如行動視訊電話(Mobile Video Phone)以及無線視訊會議(Wireless Video Conferencing)等無線與行動多媒體資訊應用系統, 無疑地將成為我們未來生活中重要的一環, 因此支援高速率服務之多媒體通訊將是未來第三代無線通信系統發展的重要項目。本課程主要目的在學習: (1) 個人通訊服務(PCS)網路架構的基本觀念、(2) 個人通訊服務網路協定與網路管理、(3) 個人通訊服務網路的全世界標準、以及 (4) 行動式通訊服務應用等四個方向。本課程授課內容分為四大部分: (I) 個人通訊服務網路管理, 主要內容包括: 個人通訊服務技術、換手與漫遊管理等。(II) IS-41 行動式系統, 主要內容包括: IS-41 協定, 行動式網路與公眾電話網路連接技術, PACS 及 CDPD 協定等。(III) GSM 系統, 主要內容包括: GSM 系統與網路架構, 呼叫管理, 位置追蹤, 安全性管理, VoIP, GPRS, 及數據資料傳輸等。(IV) 無線網際網路, 主要內容包括: IS-41 與 GSM 系統連接, WAP, 個人通訊服務系統整合, 及第三代行動式網路(3G)等。本課程針對目前與未來(第三代)行動電話所採用通訊技術, 教授設計一提供語音、影像、和傳統數據等多媒體服務品質之可行架構與系統之基本觀念與技術。上課學生最主要直接的就是可學到: (1) QoS 設計觀念與策略。(2) 寬頻 CDMA 多媒體服務品質系統與網路之觀念與方法。(3) 具動態控制的多媒體播放控制方法之相關技術。(4) 網路實作及實測的相關理論及技術。事實上, 此課程所獲得之學術理論與技術經驗, 也可以應用到寬頻網際網路、分散式多媒體系統以及有關的產品技術上。

Abstract of Mobile Communication Systems and Applications**3 S****H.Y. Kung,S**

The purpose of Wireless and Mobile Communication Systems is in four aspects:

(1) The fundamental concepts of Personal Communications Services (PCS) architecture, (2) The protocols and management software that make it run, (3) The standards that are making it a universal solution, and (4) The mobile services that are changing the face of society as we know it. This course is divided into five distinct units. (1) PCS Network Management. This unit mainly describes (i) the basic technologies and systems of PCS, which include AMPS, GSM, DAMPS, IS-95 CDMA, and low-tier PCS systems, and (ii) the management procedures of handoff and roaming. (2) IS-41 Mobile System. This unit mainly describes (i) the protocol and system of IS-41 (ii) interconnection between IS-41 system and PSTN, (iii) the applications of IS-41, which are intersystem handoff and authentication, and (iv) the protocols and architecture of PACS and CDPD. (3) GSM Systems. This unit mainly describes the GSM system architecture, the location tracking, call setup procedure, security, and data services. This unit also describes the Voice over IP (VoIP) and the General Packet Radio Service (GPRS). (4) The wireless Internet. This unit mainly describes (i) the interconnection between the IS-41 and GSM systems, WAP, and the third generation mobile networks.

決策支援系統專題

3 選

陳灯能、下

本課程的目標在於介紹決策支援系統的重要研究議題與研究方法。本課程的主要內容包括：(1) 決策支援系統的基本概念，(2) 決策支援系統的功能，(3) 決策支援系統的基本類型，(4) 決策支援系統的基礎架構，(5) 決策支援系統的設計，(6) 群體決策支援系統，及(7) 主管與談判決策支援系統。

Decision Support System Practice

3 S

D.N.Chen,S

This course introduces key issues and research methods in Decision Support Systems (DSS). The major topics included in this course are: (1) Fundamental concept of DSS, (2) Functions of DSS, (3) Patterns of DSS, (4) Framework of DSS, (5) Design of DSS, (6) Group DSS, and (7) Executive DSS and negotiation DSS.

網路金融系統專題

3 選

邵敏華、下

本課程旨在講述以電子支付、網路交易為特徵的網路金融運行模式，重要議題包括網路銀行、網路證券、以及線上貨幣交易等方面的電子交易安全服務解析，進而掌握網路金融的特徵和風險防範。

Special Topic on Network Financial Systems

3 S

M.H.Shao,S

The aim of the course is to introduce how to conduct business activities and

electronic payment over Internet and provide an overview of operational models for network financial systems. The main issues cover Internet banking services, online trading and investing services and online monetary transactions. The class is going to train students to understand the properties of network finance and their protections against security risks.

餐旅管理系 96-2 新增課程中英文摘要

一、大學部

會展產業管理

2 選

劉敏興、上

本課程設計的主要目的在使學生學習會展產業概況和專業管理知能。

Mice Industry Management

2 S

M. H. Liu, S

This course is designed to assist students to learn the fundamental ideas of MICE management.

烘焙原理及實習

3 選

陳淑瑾、上

本課程讓學生瞭解有關烘焙食品的知識，包括材料的特性，配方的平衡，操作的技巧，失敗的原因。藉由實際操作讓學生了解材料經由攪拌、發酵、整形、烘焙、裝飾等等技巧並能判別成品優劣，檢討原因。

Baking and Practice

3 S

S. J. Chen, S

This course is to provide students with the opportunity to practice some baking techniques. From measuring ingredients, mixing, fermentation, bread dough making up, baking, cake decorating and then scoring.

創意料理及實習

3 選

洪志鴻、下

選用最佳品質的食物材料、尊重食物材料的原味，不受限於傳統的規矩與食譜，而發揮其個人的才華與勇於創新的烹飪。本課程設計的主要目的使學生學習技巧。

Innovative Cuisine and Practical Training

3 S

C. H. Hung, F

The main purpose of this course is to assist students learn, discern, understand, and be excellent in making innovative cuisine. Students can display their individual talents and dares to make innovative cuisine.

民宿經營管理

3 選

賴佩均、下

本課程設計的主要目的在於使學生了解中小型個人創業的精神與方法，進而應用餐旅管理理論與方法於民宿經營實務中。主要內容包含認識旅館服務業、創業家精神、民宿發展與相關法規、民宿經營型態與組織、經營成本控制與民宿行銷規劃。透過課堂講授與分組討論，期使學生知悉現今民宿法規規定及民宿經營管理的策略與方法。

Bed-and-Breakfast Operations and Management 3 S Pei-Chun Lai · F

The main objective of this course is to assist students to understand the principles of entrepreneurship, to learn the development of Bed-and-Breakfast (B&B) and related regulations, and to plan marketing activities for B&B operations. Course contents include: hospitality management principles, entrepreneurship, B&B regulations and operations, and operational cost control. Through taught courses and group discussion, students will be able to apply hospitality management theories and methods in B&B operation management.

技術及職業教育研究所 96-2 新增課程中英文摘要

一、必修科目 Required Courses

技職教育理論與實務研究

2 必

1. 培育學生對技職教育整體發展概況基本認知。
2. 建構學生對技職教育相關學理基礎。
3. 實務了解與應用技職教育課程發展理論與教學原理。
4. 奠定學生對未來進階學習具備良好基礎。

Studies in Theoretical Foundations and Practice of Technological and Vocational Education

2 R

Aim of this course is to give theoretical foundations of Technological and Vocational education :

1. Provide the basic concepts of Technological and Vocational education
2. Construct elements of related theories into a learning model
3. Apply the basic principles of Technological and Vocational education through curriculum development theory
4. Establish the foundation of Technological and Vocational education for further study

人力資源發展與訓練

2 必

本課程主要提供給(計畫)從事人力資源發展工作的同學，有關人力資源、教育訓練、職涯發展與組織發展之相關理念與設計實作經驗。本學期授課內容將以企業人力資源發展之應用為主，透過相關議題的介紹與討論，促進同學對人力資源發展理念和規劃設計有效訓練的原則，有更多的瞭解。

Studies in Human Resource Development and Training

2 R

The course includes the theories and practices of human resource, education and training, career development, organization development and son on. Besides, the course emphasizes the human resource development of enterprises, and help students understand more by means of issue discussion and introduction.

二、選修科目 Elective Courses

技職教育研究法

3 選

本課程為訓練學生具有研究能力，以發掘技職教育相關問題，並擬定完善可行的研究計畫，遂行研究工作，經客觀分析程序，並作成研究論文。

Research Methods In Technological and Vocational Education

3 S

This course is a survey of research methodology that is relevant to the Technological and Vocational education. It discusses how to design research, collect, and report the data. It also highlights the difference between quantitative research and qualitative research.

質性研究法

3 選

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，亦提供質性研究之實際範例，作為本課程探討之對象。

Methods of Qualitative Research

3 S

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 for profound understanding.

研究方法學

3 選

本課程旨在發展對教育研究的批判與評估，探討蒐集資料的工具與設計，及運用適當方法與概念分析教育問題，並進而寫出論文研究計劃。

Research Methodology

3 S

The goal of this course is to develop critical educational research and evaluation, data collection designs and instruments, and conducting conceptual and statistical analyses appropriate to educational problems.

技職教育教學策略專題研究

2 選

本課程旨在針對技職領域中不同的教學原理與策略進行理論性與實務性研究。

Studies of Instructional

2 S

Strategies in the Technological and Vocational Education

This course aims at the theories and the practices of instructional strategies in the field of Technological and Vocational education, including learning theories, teaching approaches, learning strategies, and relevant studies.

認知心理學與設計專題研究

2 選

本課程在了解認知心理學的理論學說，並探討近年來的研究發現與趨勢，及其在技職教育教學上的應用，期能培養研究生探討並運用認知心理學研究發現於技職教育教學設計。

Studies in Cognitive Psychology and Instruction of Vocational-Technological and Education

2 S

This course is to study the theories and general approaches of cognitive psychology, and implication in instruction of Technological and Vocational education, especially focus on the scheme theory, knowledge development, problem solving, crea

技職教育行政管理研究

2 選

本課程在旨探討技職教育行政管理的定義、範圍、相關的理論學派，包括組織結構理論、組織氣氛理論、領導理論、溝通理論、決定理論，以及技職教育行政管理之革新。

The Administrative Management of Technological and Vocational Education

2 S

The course includes two parts. The first part contains the signification, scope, and theories of the administrative management of Technological and Vocational education. The theories involve organizational structure, organizational atmosphere, leadership, communication, and decision making. The second part is to explore the renovation of the administrative management of Technological and Vocational education.

技職教育評鑑與督導研究

2 選

探討當代教育評鑑理論、模式、沿革、應用，以及各國教育評鑑組織與實施策略比較，並針對評鑑之後的督導功能進行探討，包括督導的原理與理論、有效的督導技巧等，期望幫助學生能成為良好的技職教育評鑑與督導者。

Studies in Educational Evaluation and Supervision of Technological and Vocational Education

2 S

This course is designed to enable graduate level students to develop the skills and strategies necessary for Technological and Vocational education evaluation and supervision in order for the improvement of on-going programs. Included will be a historical review of the fields, an analysis of approaches and theories to educational evaluation and supervision, and techniques of the effective evaluators and supervisors.

多元文化技職教育研究

2 選

本課程旨在培養學生對多元文化技職教育的理解以及對技職場域內成員文化差異的敏感性，以增加其對成員因為不同的文化與族群背景所產生的學習差異。課程分為四個部分：一、介紹多元文化教育的哲學與理論基礎和發展；二、分析各個不同西方多元文化社會中針對多元文化技職教育所採取的政策與措施；三、將針對多元文化在台灣技職場域的現況與發展進行瞭解；四、最後，課程將針對在台灣的多文化技職教育議題進行深入的分析與討論。

Studies in Research on Multicultural Technological and Vocational Education

2 S

Taiwan is a multicultural society in its nature where great ethnic and cultural diversity exist. In other words, most students come into the technological and vocational classroom with different cultural and tribal backgrounds. Therefore, teachers' awareness for the cultural difference appears to be important in understanding students' specific needs brought about by their own origins. The main aim of this course is to build up students' understanding of multicultural technological and vocational education and cultivate their awareness for the cultural differences in the classroom. This course consists of four main parts. It will start giving an introduction of multicultural education, its philosophy, theory and historical development. Then, it is followed by an analysis on the policies and approaches adopted in different western societies where multicultural technological and vocational nature can also be observed. The emphasis of the third part will be placed on the development of multicultural technological and vocational education in Taiwan. Finally, issues relating to multicultural technological and vocational education in the current Taiwanese society will be addressed and discussed.

組織行為與學習研究

2 選

組織行為學是研究一定組織中人的心理和行為的規律性，提高管理人員預測、引

導和控制人的行為的能力，以順利實現組織預期目標和提高組織成員個人滿意度的科學。透過本課程的學習，使學生全面深入地理解和把握組織中個體、群體、組織、領導的心理和行為的特點及規律性，學會運用心理學的理論和方法有效地激勵人的行為，培養和提高理論聯繫實際、不斷創新和組織管理能力。

Studies in Organizational Behaviors and Learning 2 S

Organizational Behaviors and Learning is a subject that focuses on organizational members' psychological and behavioral characteristics, and improving the anticipation, leading and controlling of managers in order to make the organization goals come true and pick up the members' satisfaction.

The aims of the course are help students understand the psychological and behavioral characteristics of individuals, groups, organizations and leaders, then efficiently use the theories and methods to encourage people's behaviors, and improve abilities of organizational management.

組織領導與管理研究 2 選

本課程旨在探討組織管理者如何運用領導與管理理論於組織行為改造，以營造學習型的組織。組織領導與管理的定義、範圍、相關的理論學派，包括組織結構理論、變革管理、變革經營、組織氣氛理論、領導理論、溝通理論、決定理論等，均為課程的範圍。

Studies in Leadership and Management 2 S

This course is designed to enable graduate level students to develop the skills and strategies necessary for leadership and management in order for the development of a learning organization. Included will be theories of leadership and management, which involve organizational structure, organizational atmosphere, leadership, communication, and decision making.

人力訓練與規劃研究 2 選

本課程之目的在協助學生瞭解人力訓練與規劃之內涵與業界策略規劃之關連性，熟悉人力訓練與規劃的方法，以為將來從事人力訓練與規劃工作之基礎。內容涵蓋：教育與訓練、人力需求、人力配置、人力資源供給的分析、人力資源發展、報酬、人力資源規劃的預測技術、技能檔案、組織替換與勞資關係等。當

代人力訓練與規劃議題也是探討重點。本課程特別重視學生的口頭報告，也期望學生能以專業的態度進行課堂報告。

Studies in Human Training and Planning

2 S

This course will give students an overview of the field of Human training and planning. Emphasis will be placed on the core areas of Human training and planning, including Education and Training, demand of human resources, staffing, analysis of supply of human resources, employee development, compensation, forecasting techniques used in human resources planning, skill inventory, organizational replacement, and employee relations. Contemporary Human training and planning issues will also be discussed. This class will require intense oral presentations. Students are expected to conduct the presentation in professional manners.

職業心理學專題研究

2 選

本課程之目的在於協助學生瞭解職業心理學在實務與運用上的內涵，以熟悉各式職業評估的技術、程序與理論，瞭解職業心理學在專業運用與社會發展上的重要性，進而激發學生在職業心理學的理論、實務與研究上繼續努力的意願，並嘗試探討職業心理學位來的發展方向。

Studies in Vocational Psychology

2 S

The objectives for this curriculum are :

1. To make students aware of the practical and applied aspects of the field
2. To familiarize students with a variety of techniques, procedures, and theories available for vocational assessment
3. To realistically assess the significance of vocational psychology for professional functioning and for societal development
4. To stimulate students to make a commitment to continued professional growth in theory, practice, and research in the field of vocational psychology.

We also attempt to chart new directions toward which vocational psychologists may direct their efforts.

訓練方案與績效評估研究

2 選

探討訓練單位所進行的訓練方案設計與規劃個案，並從實際訓練經驗中，反

思與形成訓練方案的課程內容與流程、訓練方式的行動策略、歸納分析訓練方案的構成要素，並進一步做好績效考核與教育訓練的結合、運用績效評估方法衡量團隊或個人績效，以提升教育訓練之目的。

Studies in Training Program and Evaluation Technologies

2 S

This course is designed to enable graduate level students to develop the skills and strategies necessary for training program and evaluation technologies in order for the improvement of on-going organizations. Included will be a content and process of training programs, an analysis of strategies and theories to training program and evaluation, and the effective techniques of evaluation technologies.

數位化學習研究

2 選

本課程內容主要探討數位學習的定義、內涵、模式、及其在教育與訓練上的應用，而數位學習的教材開發、輔助學習網站的建構、線上互動功能的發展，及目前數位學習的最新議題均進行分析討論。

Studies in E-learning

2 S

The content of this study includes the definition of e-learning, the strategy of e-learning, the models of e-learning, and the applications of e-learning in education and business. Also the procedures to develop materials, the approach to set up internet platform, the strategy to design the interactive functions, and the latest research and topics which related to e-learning are all discussed in this course.

終生學習與發展研究

2 選

- 1、了解成人教育的理論與知識體系
- 2、探討成人教育實務的推展
- 3、促進成人教育與理論與實務的對話
- 4、增進成人教育工作者的專業理念與能力
- 5、提升成人教育及終身學習研究的素養

Studies in Lifelong Learning and Development

2S

- 1、To understand the adult education the theory and the knowledge system
- 2、To discuss the development of adult education solid service promoting
- 3、To promote the dialogue of theory and practice in adult education
- 4、To enhance the profession conceptualization and ability for the workers of adult education
- 5、To promote the dispositions of in adult education and lifelong learning

跨文化企業訓練研究

2 選

1. 認識跨文化訓練的核心議題
2. 瞭解企業跨文化訓練分析工具
3. 探討地區文化特性與跨文化管理的要點
4. 增進派外人員的跨文化學習

Studies of Cross-Culture Training for Enterprises 2 S

1. To understand the essential conceptualization of cross-culture training
2. To realize of the analysis tool of cross-culture training for enterprises
3. To investigate the characteristics of local cultures and cross cultural management
4. To enhance of the cross-culture learning for management and administration in abroad

各國技職人力培訓制度研究

2 選

本課程主要探討各國例如美、日、英、德等國的技職人力的規劃、教育訓練的制度、相關配套措施、優缺點與其間的差異情形，以為我國實施的參考依據。

Studies in the Comparision of Training System amnog Several Countries 2 S

This curriculum mainly explores the planning of human resource, the training systems, the supporting facilities, and the virtues and defects in the technological and vocational education among a number of powerful countries in the world such as USA, Japan, England, and Germany to discover feasible programs which are useful and practicable in Taiwan.

專案管理研究

2 選

本課程主要探討專案管理的基本概念、相關定義、專案生命週期、專案組織等。並深入探討專案管理的八大知識領域：範籌管理、時間管理、成本管理、品質管理、人力資源管理、溝通管理、風險管理與採購管理。同時探討專案管理的相關技術，例如實獲值分析法、工作分解結構、專案評估與審查技術（PERT/CPM）、績效評量等技術，並能將其應用於專案的發展、執行與控管。

Studies in Project Management

2 S

This curriculum mainly discusses the basic concept of project management, the definition of project management, the life cycle of project management, and project

organization and so on. Then, the scope management, the time management, the cost management, the quality control, the human resources management, the communication management, the risk management and the purchase management are discussed intensely. Simultaneously, the related know-how used for project management such as value analytic method, the decomposition of work, the assessment of project, and the PERT/CPM strategy are explored to design, carry out, and assess a real project in business or industry.