

植物醫學系

Department of Plant Medicine

一、必修科目 Required Courses

156001 實驗設計與數據分析 2 必 張念台

介紹生物學上數據的收集與統計處理、藉基本實驗設計原理及方法的說明，強調適當實驗設計導致最佳統計分析的結果。

156001 Experimental Design and Data Analysis 2 R N. T. Chang

An introduction to the collecting a statistical handling of biological data. The principles and methods of experimental designs, which lead to better statistical analysis, are discussed.

156002 文獻選讀 2 必 張念台

本課程選擇亦指定植物保護相關重要文獻供研讀、討論與撰寫心得，藉以訓練學生讀寫、表達溝通及評論思考之能力。

156002 Literature Review 2 R N. T. Chang

In order to improve the skills of reading and writing, oral communication and critical thinking of graduate students, publications on the research topics in plant protection and allied fields will selected and students will assigned to study, discuss and review those papers.

156003 專題討論 4 必

本課程旨在訓練學生對資料蒐集、整理及表達的能力。學生選擇與植物保護學門或碩士論文有關的主題，蒐集文獻、閱讀、整理成摘要，然後提出報告討論，並日參與教師評介。

156003 Seminar 4 R

This course is designed to train graduate students the ability in searching literature, organization of material and presentation. Students are required to select a topic in the field of plant protection or those related to their thesis, search and review literature and draw up a brief. This presentation is scheduled for every student once a semester. Their performance is evaluated by the faculty member.

176004 碩士論文 6 必 各教師

利用完整執行之試驗、觀察或實務操作，使學生能徹底了解並應用修課之知識、練習口頭報告、與科學論文之寫作。老師則藉日討論，提供改進之意見。

176004 Thesis 6 R All faculties

After a well-designed project being properly conducted by students, he/she will be asked to give a oral presentation and submit the thesis before a deadline. Knowledge acquired during the study should be made use of sufficiently in the preparation of the thesis. Frequent and intensive discussions among teachers and students will be arranged to improve the quality of his/her research.

二、選修科目 Elective Courses

156005 高等植物病理學 3 選

高等植物病理學是分子、細胞、組織及器官不同層次探討植物病變過程之形態與生理變化及病原與寄主之間相互作用，進而討論植物抗病機制及病害管理之策略，尤其注重分子生物技術應用於植物病理之發展。

156005 Advanced Plant Pathology 3 S

Advanced plant pathology is intended to review and discuss the morphological and physiological changes of diseased plants from molecular, cellular, and histological to organ levels. The pathogenesis of the host disease resistance and the interaction between host and pathogen related biotechnology applied in disease diagnosis and control also the important section in this course.

156006 植物病原學特論 2 選 蔡文進

本課程主要深入了解植物病原真菌、細菌、病毒和線蟲等之形態、分類、生理、生態及其致病受害之特性。

156006 Special Topics on Plant Pathogens 2 S W. J. Liang

This course is to discuss the biotic factors that caused plant diseases and characteristics of morphology, physiology, ecology, and classification and pathogenically of pathogens.

156007 植物檢疫防疫法規 2 選

本課程之目的，在使學生瞭解及熟識與植物保護及檢疫相關的各種法規。

156007 Plant Quarantine and Inspection Laws 2 S

The purpose of this course is to study the laws and regulations of plant protection and to give students the basic knowledge of pest quarantine and how to prevent import and spread of plant pest entry into or passage through our country from other countries. Course contents include the agreement on the application of sanitary and phytosanitary measures、the law and bylaw of commodity inspection and quarantine、the law and bylaw of pesticide、the law and bylaw of plant quarantine etc.

156008 作物抗病育種 2 選

本課程的目的在使學生瞭解抗病育種在作物病害防治上所扮演的角色。本課程討論抗病之本質化以及如何利用抗病育種原理來達到作物病害防治的目的。內容包括：
1. 作物抗病之類型。2. 寄主與病原菌之共同演化。3. 抗病育種在病害防治上的限制。4. 抗病育種技術等主題。

156008 Plant Breeding Against Diseases 2 S

The purpose of this course is to inquire into the role of resistance in plant disease. It discusses the nature of resistance and how it can best be use to protect crops from disease. The contents of this course are : 1.Types of disease resistance in plants. 2.Coevolution of plants and pathogens.

3.The limits of disease control by plant breeding. 4.Breeding methods for disease resistance.

156009 電子顯微鏡

2 選

張滄海

本課程主要介紹電子顯微鏡的基本原理與應用。內容包括兩部分：(一) 穿透式電子顯微鏡之構造，材料之固定與包埋、超薄切片、負染色與金屬投影。(二) 掃描式電子顯微鏡之構造，樣品製作、臨界點乾燥等。

156009 Electron Microscopy

2 S

T. H. Chen

The course offers a complete understanding of the principle and application of electron microscope. The contents include two sections: 1.construction of transmission electron microscope (TEM), chemical fixation、embedding、staining and metal shadowing. 2.construction of scanning electron microscope (SEM), preparation of specimen for SEM.

156010 昆蟲的適應

3 選

辛竹華

介紹昆蟲的構造及其功能，強調昆蟲的構造在環境中的適應與在演化上的重要性。

156010 Advanced Entomology

3 S

C. Y. Hsin

Introduce the functional anatomy and ultrastructure of insects, with emphasis on adaptation and evolutionary significance.

156011 作物抗蟲育種

2 選

作物抗蟲育種的目的是增加植物對昆蟲之抗性，植物本身對昆蟲的侵害所具有的特性是避免復原的特性；在類似環境下，非種中之其他個體對這些害虫之危害所造成的損失，要遠比前者為小。改良成最理想的品種，往往需要以人為的方法除去或增加某些因子，以增加抗性。

156011 Plant Breeding Against Insect Pests

2 S

Resistance of plants to insects is the property that enables a plant to avoid, tolerate or recover from injury by insect populations that would cause greater damage to other plants of the same species under similar environmental conditions. Improvement of the desired product frequently involved the intentional reduction of factors that coincidentally, were involved in mechanism of resistance.

156012 蟎學特論

2 選

胡真

本課程主要介紹蟎之分類法及生物學特性與生態研究。課程重點討論農業蟎之重要特性。

156012 Special Topics on Acarology

2 S

T. Hua

This course is to introduce the taxonomy, biology and ecology of mites and ticks. Emphasize will be placed on the species of agricultural importance.

156013 昆蟲生理學

2 選

辛竹華

介紹昆蟲生理活動的機制，包括消化系統、排泄系統、循環系統、呼吸系統、神經系統、肌肉系統、感覺器官、分泌系統等的功能及相互作用。

156013 Advanced Insect Physiology 2 S C. Y. Hsin

Introduce the life processes of the insects, including the function and interaction of digestive system, excretory system, respiratory system, nervous system, muscular system, sense organ, endocrine system.

156014 植物病原傳播學 2 選 項滄海

本課程以傳統及分子生物學觀點介紹土壤、水、空氣、線蟲、昆蟲、種苗等各種植物病原傳播媒介之傳播機制以及傳播生態。

156014 Dissemination of Plant Diseases 2 S T. H. Chen

The course is to introduce the transmission mechanism and ecology of plant pathogens disseminated or transmitted by soil, water, air, nematode, insect, mite and seed.

156015 植物流行病學 2 選 梁文進

本課程討論植物流行病學之主因子，寄主病原體，環境因子，人類耕作管理與流行病發生之關聯性；流行病之發生類型與比較，發展過程，模式及電腦模擬；植物流行病之預測及預警與植物病理上專家系統之結合。

156015 Plant Disease Epidemiology 2 S W. J. Liang

The contents of this course are: plant disease elements (host, pathogen and environment factors) affecting the development of plant disease epidemics, the patterns and comparison of epidemics; the development, modeling and computer simulation of plant disease epidemics; and the forecasting and disease-warning systems of plant disease epidemics which are integrated with expert systems of plant pathology.

156016 血清學技術 2 選 項滄海

本課程主要介紹免疫學原理，抗原、抗體之特性與純化製備，以及各種血清學反應與應用。

156016 Serology 2 S T. H. Chen

The course offers a comprehensive introduction to the principle of immunology. The contents cover the preparation of immunogens, production and characterization of antibody and serological techniques applied in plant protection.

156017 生物防治特論 2 選

本課程自細胞及分子層次，探討各種生物防治因子如病毒、真菌、細菌及線蟲作為植物病害防治之作用機搆，生物防治因子與植物病原相互作用關係。進而說明應用各種可能之生物技術將該因子作量產培養，生物製劑之方法及遺傳工程之基因轉殖發展具有防治潛力之生物因子或基因轉殖之抗病品種之植物。

156017 Special Topics on Biological Control 2 S

The attempt of this lecture is try to understand the biocontrol mechanism of biological agents, such as bacteria, fungi, viruses and nematodes against plant disease to reduce disease damages or infection potential of pathogens from cellular or molecular level. Knowing the interaction between

biocontrol agent and pathogen on the host plant or in environment is another objective of this lecture. The application of biocontrol agents and genetic engineering of a transgenic agent to improve or enhance its biocontrol effectiveness or to develop the transgenic resistant variety would be brought for detail discussion.

156018 熱帶作物病害特論 2 選 鄭秋恒

本課程首先介紹熱帶農業體系之特性，進而論及熱帶作物日間與採收儲運期之病害種類、發生型態，最後再探討經濟有效之防治方法。範圍涵蓋穀類作物、豆科作物、根莖作物、蔬菜、花卉、飼料作物、藥草及楮、麻、油脂類特用作物等。

156018 Special Topics on Tropical Crop Disease 2 S C. C. Cheng

The course offers a complete understanding of the characteristics of tropical crop diseases and of how to manage the diseases. The diseases of the tropical crops, e.g., cereals, food legumes, root and tuber crops, vegetables, flowers, forages, drug crops, fiber crops, and oil crops will be discussed in detail.

156019 昆蟲分類與演化 2 選 張萃女英

昆蟲的演化，使單純的系譜加以分化，隨著分化，不同類別的雜交演化及遺傳基因新的組合，而產生不同的後代，以此作為有系統的分類。

156019 Insect Taxonomy and Evolution 2 S T. Y. Chang

The evolution of a number of rather different insects from a single ancestral group. Insect species exist in interbreeding groups, population, whose members exhibit variation. Classified the insects to ancestral and identification.

156020 昆蟲發生與預測 2 選 張志台

以昆蟲發生學為基礎，介紹害蟲取樣、調查方法，進而對族群之發生期與發生量加以數理預測與評估。

156020 Outbreak and Forecast of Insect Pests 2 S N. T. Chang

Basing on the insect ecology, the practice of sampling, quantitative forecast and evaluation of occurring period and amount relative to pest population are discuss

156021 熱帶作物昆蟲特論 2 選

提供區別及認識其重要的個別的特性、害性特性，台灣及熱帶地區危害狀況及分析，主要防治方法及生物防治法。

156021 Special Topics on Tropical Crop Insect Pests 2 S

Provides for identifying and learning essential elements of the biology and distribution of the most important pests of the tropics. Principles and methods of pest control. Biological control of insect pests in Taiwan and the world.

156022 植物病害診斷與檢疫技術 2 選 鄭秋煌

本課程主要介紹植物病害之各種診斷技術與檢疫技術。課程內容包括病徵學、病原形態學、血清學、生物檢定及分子生物學等病害診斷技術與植物檢疫技術之介紹。

156022 Diagnosis and Quarantine of Plant Diseases 2 S C. C. Cheng

The course is to introduce various technologies of diagnosis and quarantine of plant diseases. The contents of this course include that introduce the technologies of symptomatological, pathogenic morphological, serological, bioassay and molecular biological diagnosis of plant diseases and plant quarantine.

156023 昆蟲生態學特論 2 選 張念台

討論有關昆蟲族群之分布、豐度、消長、調節、以及種間交互作用等主題，並分析其與環境和生態系間的關係。

156023 Special Topics on Insect Ecology 2 S N. T. Chang

The population distribution, abundance, dynamics, regulation, as well as inter- and inter-specific interactions of insects are discussed and analyzed in relation to environment and ecosystems.

156024 昆蟲行為學特論 2 選 辛竹菁

介紹不同種類昆蟲其取食、防衛、遷移、求偶、社會昆蟲群聚、溝通等現象及意義。

156024 Special Topics on Insect Behavior 2 S C. Y. Hsin

Introduce some general activities common to insects in different groups. The behavior included feeding、defensive strategies、insect migrations、acoustic behavior、pheromone、gregarious and social behavior.

156025 農藥毒理學 2 選 辛竹菁

介紹農藥的化學性質、作用機制、生物活性及農藥在病蟲害防治工作的應用，將強調新類型的生物藥劑及藥劑的選擇性，並討論農藥對人類健康與對環境的影響。

156025 Pesticides and Toxicology 2 S C. Y. Hsin

Introduce pesticide chemistry、biochemical modes of action、biological activity and theory of pesticide application of management programs. Emphasis is placed on novel biological insecticides and insecticides with selective properties. The effect of pesticides on human health and environment will be discussed.

156026 植物害蟲診斷與檢疫技術 2 選

本課程主要介紹植物害蟲之各種診斷技術與檢疫技術。

156026 Identificatuon and Quarantine of Insect Pests 2 S

The course is to introduce various technologies of diagnosis and quarantine of **Insect Pests**

156027 雜草特論 2 選 **鄭秋桓**
 課程包括雜草與作物間的相互關係，種子和植物體的繁殖法，及雜草與作物的競爭，化毒作用及其他因子在草害管理上的角色。

156027 Special Topics on Weeds 2 S **C. C. Cheng**
 The course include : Ecological concepts for weed-crop relationships, reproduction from seed and vegetative plants, competitiveness of weeds, allelopathy in weed management, biotic agents in weed management.

156028 有害生物綜合管理特論 2 選 **張念合**
 討論農業生態系中重要作物之病原、害蟲與其他有害生物綜合管理的策略與方法。

156028 Special Topics on Integrated Pest Management 2 S **N. T. Chang**
 The strategies and tactics of integrated management of pests in agricultural ecology of important crops are discussed.

156029 數值分類學 2 選 **張莘**
 本課程主要介紹數值分類學的發展歷史、基本原理和分類運算分析方法，內容包括表徵分類和支序分類兩種不同的分類觀點以及相應的各種數學方法和電腦技術。

156029 Numerical Taxonomy 2 S **T. Y. Chang**
 This course mainly introduces the development, principles and analysis methods of numerical taxonomy. The contents include phenetics, cladistics and their comparisons. The application of mathematical methods and computer technique about numerical taxonomy are also included.

156030 分子植物醫學 2 選 **鄭秋桓**
 本課程主要介紹分子植物學在植物病害診斷、蟲害鑑定、病蟲害綜合管理及抗病、抗蟲、抗藥、抗環境逆境植物育種上的應用。

156030 Molecular Plant Medicine 2 S **C. C. Cheng**
 This course is to introduce the molecular biology applied in diagnosis of plant diseases, identification of insect pests, the integrated management measures of plant diseases and insect pests, the breeding of disease-resistant, insect-resistant, drug-resistant, and environmental stress-resistant plants.

156031 農業發展與國際合作 2 選
 本課程內容在介紹中華民國在臺灣五十年來之農業發展過程，從初期的土地改革政策和以農業為主之經濟發展，進入以工商業為主之現代化社會，同時在配合農業升級及回饋國際社會政策下推展各項國際合作計劃；目的在使同學能鑑往知來，擘劃下一世紀之農業開創新局。

156031 Agricultural Development and International Cooperation 2 S

This course is to provide an insight of agricultural development of Taiwan for the past 50 years, and also point out its new direction for the next century. Its contents include: land reform programs, agricultural trade and economic development, transformation from an agricultural to industrialized economy, and international cooperation.