獸醫學系(博)

Department of Veterinary Medicine

一、必修科目Required Courses

169001 專題討論 ４ 必 全系老師

本課安排一系列演講，部分邀請校外專家，其餘則由研究生擔當。每位研究生於每一學期均須選一與獸醫學或與其論文有關之題目，進行文獻蒐集和閱讀、資料整理、摘要撰寫及口頭發表。評分由本系教師共同評定。

169001 Seminar ４ Ｒ Faculties

Serial lectures are arranged in this course. Some lectures are given by the experts invited from outside the university. Graduate students are required to select a topic related to veterinary medicine or their thesis in each semester. Each student must reviews the literatures related to their research and submit a summary for presentation. Their presentations are evaluated by the faculty members.

169002 博士論文 １２ 必 各教師

每位博士班研究生選定論文題目，在指導教授指導下進行實驗、研究、依據實驗研究結果完成論文。

169002 Dissertation １２ Ｒ All Teachers

Graduate students propose their research project, complete experiments and write a thesis under advisor supervision.

二、選修科目Required Courses

169003 專題研究 ８ 選 全系老師

本課程目的在提供各種特殊技術和知識，以解決研究生實驗和研究時之特殊問題。由指導教授安排一序列之個別口頭發表和討論，以提昇學生博士論文有關之研究能力。

169003 Special Problem 8 E Faculties

The purpose of the course is to offer varieties of special technique and knowledge used to solve special problems occurred during research or graduate study for graduate students. A sequence of individual presentations and discussions are arranged from adviser to promote the student the study ability in the topics involving his Ph.D. thesis.

**169011** **養豬醫學診療實習一 1 選 鍾文彬、張聰洲**

 **邱明堂**

本課程為「養豬醫學」專科醫師養成教育之第一年基礎課程，以本校動物醫院及南部各養豬場之豬隻為實習對像，進行豬隻健康管理相關知識與技術之現場實習。授課內容包括豬隻傳染及非傳染性疾病診療、豬隻群體健康管理、豬隻生產及現場群體健康診療等技術之基礎訓練。

**169011 Clinical practice of 1E W.B. Chung, T.C. Chang,**

**swine medicine (I) M.T. Chiou**

This course is designed for the first-year graduate students planning to specialize in 「swine medicine」. Participants will be provided with clinical practice regarding the knowledge and skills in swine health management. Animals involved in the clinical practice include the pigs registered in the Animal Hospital of NPUST and the animals from pig farms in southern Taiwan. The contents of this course include the clinical training in the diagnosis, treatment and control of individual infectious and non-infectious swine disease, swine herd health management, swine production, and on-farm swine herd health and disease control program.

**166029高等獸醫針灸學 2選 簡基憲**

 本課程向學生介紹針灸在獸醫學上的應用以及針灸如何與現在的獸醫學融合。同時提供學生最新的獸醫針灸研究與實際運用資訊。

**166029 Advanced Veterinary 2E C. H. Chien**

 **Acupuncture**

 This course is designed to introduce the student of veterinary medicine to acupuncture’s applications and show how acupuncture can be integrated into a conventional veterinary medicine. It attempts to provide for students the latest in research and practical information in this rapidly expanding field of veterinary medicine.

**169019 水生動物生產醫學 (I) 2 選 蔡信雄、陳石柱**

 本學程修業科目之講授內容主要目標為奠定學生現場執業需具備的專業知識基礎。強調健康和生產關係，結合疾病診斷與預防理念。並與各水生動物診斷中心、家畜衛生試驗所、水產試驗所及業界合作，安排學生實地學習以因應未來實際執業之準備。本課程目標在培育學生水生動物生產醫學(飼養管理、疾病防治、生產管理)知識且具獨立診療能力之水生動物專科獸醫師，進而投身水生動物生產醫學及養殖產業管理分析工作。

**169019Aquatic Animal Production 2 E S. H. Tsai, S. C. Chen**

 **Medicine (I)**

This course enabling students (veterinarians) to gain skills and knowledge to help them increase the health and productivity of their client's herds, as well as increase the value of their consulting services. The program consists of intensive workshops which include a wide variety of hands-on farm problem solving, culture farms practice innovations, as well as the latest in culture farms production analysis.

**169023 水生動物疾病診療實習(I) 1 選 蔡信雄**

本課程講解及實際操作各種水生動物病原(包括細菌、病毒、黴菌及寄生蟲等)之分離,鑑定及其他水生動物疾病診斷技術。本課程亦包括水生動物疾病之預防與治療及魚類免疫學診斷技術之應用。

**169023 Clinical Practice 1 E S. H. Tsai**

 **(Aquatic Animal Diseases ) (I)**

The purpose of this course is to provide the students with knowledge and practical techniques for clinical diagnosis of the diseased aquatic animal. Effective treatment and control measures are also introduced. The contents of this course include how to process the history taking, and to perform the clinical examination with the general and special methods. Instruction and practice of isolation, identification and various diagnosis techniques of aquatic animal pathogens such as bacteria, virus, fungi and parasite etc.

**169015臨床豬病學一 2 選 鍾文彬、張聰洲**

**邱明堂**

本課程為「養豬醫學」專科醫師養成教育之第一年基礎課程。本課程進行豬隻健康管理相關知識與技術之講授與討論。授課內容包括豬隻傳染及非傳染性疾病診療、豬隻群體健康管理、豬隻生產及現場群體健康診療等技術之基礎訓練。

**169015Clinical swine medicine (I) 2 E W.B. Chung,**

**T.C. Chang, M.T. Chiou**

This course is designed for the first-year graduate students planning to specialize in 「swine medicine」. Participants will be provided with lectures and discussion regarding the knowledge and skills in swine health management. The contents of this course include the clinical training in the diagnosis, treatment and control of individual infectious and non-infectious swine disease, swine herd health management, swine production, and on-farm swine herd health and disease control program.

169007 分子病毒學 ２ 選 廖明輝

本課程的目的，在使學生瞭解獸醫分子病毒學的一般改概念，並探討病毒的複製機制、基本的分子生物學、致病機轉、宿主與寄生的關係及其免疫機制。

169007 Molecular Virology ２ E M. H. Liao

The purpose of this course is to study the general concepts of basic and veterinary medicine virology, whereas describes the virus replication, basic molecular biology, pathogenesis, relationship of host and parasite and immune mechanism.

169008 藥理學特論 ２ 選 蔡清恩

本課程主要以細胞及分子的領域為基礎，介紹最近的研究結果，例如藥物作用的感受體型式、信息傳遞途徑，中樞及自主神經的藥理，炎症、過敏、血小板功能以及化學療法等新知。

169008 Advanced Pharmacology ２ E C.E.Tsai

The purpose of this course is to introduce the recent research in formations of pharmacology in cellular and molecular level. They include receptor types, signal transudation pathways, CNS and autonomic pharmacology, pharmacology of inflammation, allergy and platelet function and chemotherapeutic approaches.

169010 細胞生物學 ２ 選 鍾曜吉

講授細胞的基本構造、細胞的生理作用及其功能等,使學生瞭解細胞的生命現象, 以奠定學生對基礎醫學之認知。

169010 Cell Biology ２ E Y. C. Chung

Cell structures, cell physiology and cell functions are involved in this course. It makes the students aware the know ledges of the basic veterinary medicine.

169011 禽病實驗診斷 ２ 選 吳弘毅

本課程主要讓學生親自參與各種家禽傳染病之實驗室診斷技術，讓學生得以在修習本課程之後，獨立從事各種家禽類病原體的分離鍵鑑定，分子生物學之快速檢查鑑定技術。

169011 Laboratory Diagnosis of Avian ２ E H. Y. Wu

 Diseases

The purpose of this course is to provide a self participation in the laboratory diagnostic technique of various poultry infectious diseases. By taking this course, student shall be independent in doing the isolation and identification of avian pathogens, preparation of diagnostic antigens, serological detection, rapid biotechnological detection etc.

169013 基因重組 ２ 選 連一洋

本課程著重在使學生深入了解基因重組工程的理論與技術，並且能有效的活用這些技術於各個不同的專業領域。課程三分之一的時間在於研習基礎原理，另三分之二的時間則為實際的實驗操作。

169013 The Concept and Techniques of ２E Y. Y. Lien.

 Recombinant DNA

The objective of this course is to develop an advance understanding of molecular biology techniques and how they can be utilized in different subjects of research. The one third of the course will focus on the principles of recombinant DNA technology. The two third of the course will offer an opportunity for practice in laboratory.

169004 魚病臨床微生物學 ２ 選 陳石柱

本課程講授水產動物之各種病原性微生物（包括細菌、黴菌、病毒等）之分類、形態、培養、生化特性及其病原性，並強調各種實用、有效且快速之分離鑑定系統及分子生物學等之診斷應用。

169004 Clinical Microbiology for Fish ２ E S. C. Chen

 Disease

The purpose of this course is to teach the taxonomy, classification, morphology. Cultural characters, biochemical properties and pathogenesis of various pathogenic microbial organisms（including bacteria, and viruses, etc.）associated with aquatic animal. It is especially emphasized on the practical, effective and rapid isolation and diagnostic system in related with molecular technology applicable nowadays.

169005 水產動物診斷病理學 ２ 選 陳石柱

本課程之目的著重於使學生對水生動物疾病診斷之要領，尤其以討論各類水產動物包括海水及淡水魚、蝦類等之疾病的病理學變化(包括肉眼及組織變化)及其致病機轉。

169005 Diagnostic Histopathology of ２ E S. C. Chen

 Aquatic Animals

The objective of this course is to study the techniques of diagnostic pathology in aquatic animal diseases, especially in gross and histopathology and pathogenesis. The course includes marine and fresh water fish, shrimp, and shell fish diseases etc.

169006 水產動物組織病理學 ２ 選 陳石柱

本課程主要之目的在使學生瞭解水產動物之各系統器官的基本組織結構與防禦機制尤其在不同環境因子或特定病因下所引起各系統器官之組織病理學變化之特徵如變性、壞死、及肉芽腫等。

169006 Histopathology of Aquatic ２ E S.C. Chen

 Aanimals

The objective of this course is to compare the response of fish tissues with those of mammals to highlight the difference and study the basic defense mechanisms, inflammatory reaction and histopathological changes in aquatic animals organs and tissue.

169007 大動物疾病學特論 ２ 選 劉世賢

本課程之目的在提供研究生有關大動物當前問題與特殊疾病之更詳盡知識。一序列當前之重要大動物疾病和其解決對策將被介紹，來增進研究生研究大動物疾病之能力。

169007 Advanced Large Animal ２ E S. S. Liu

 Diseases

The purpose of this course is to offer more complete knowledge of current problems and special diseases occurred in large animals for students. A serial of important problems and solving methods of large animal diseases are introduced to promote graduate students the study ability about large animal diseases.

169008 禽病學特論 ２ 選 蔡信雄

本課程主要在探討目前正在國內外發生的家禽疾病之發病機序、組織病理變化及免疫控制法等。藉以啟發學生之謀求徹底解決方案。

169008 Advanced Poultry Diseases ２ E S. H. Tsai,

This course is designed to precisely discuss the pathogenesis, histopathological changes, and immunological methods etc. of some diseases currently occurrence in Taiwan or worldwide as an initiation to student in making a study for pursuing a good resolution.

**169027 動物生殖科技特論 2 選 劉世賢、沈朋志**

本課程著重於討論家畜生殖問題及新近發展之繁殖技術，包括雌雄種畜生殖機能之評估與改善，繁殖管理之新觀念與方法，生殖性狀之選拔，人工授精與體外授精技術之應用，性別選擇，配子和胚之顯微操作及保存，與胚移置技術等，並以有助於解除緊迫環境下家畜之生殖困擾者為優先．修習本課程之學生可藉課堂討論與國內外相關文獻之閱讀以掌握繁殖技術之最新發展，提升改善禽畜繁殖效率之能力。

**169027 Advanced Animal 2 E S. S. Liu, P.C.Shen Reproductive Technology**

The objective of this course is to give the students more confidence in their abilities for improving the animal reproductive efficiency. Dealing with the modern concepts and the recent techniques in animal reproduction, it consists of the following subjects: evaluation and improving of the reproductive functions of the breeding animals; reproductive management; selection on the reproductive characteristics; methods of sex selection; applications of artificial insemination and in vitro fertilization; micromanipulation and preservation of the gametes and embryos; the technique of embryo transfer; animal cloning, and so on. The topics being put in the priority are those techniques that are capable of being used for restoring the prevalent animal reproductive failure under the environmental stress. For catching up the new developing concepts and techniques, students are required to read and discuss the publication in animal reproduction.

**169024水生動物疾病診療實習(II) 1 選 蔡信雄**

本課程講解及實際操作各種水生動物病原(包括細菌、病毒、黴菌及寄生蟲等)之分離,鑑定及其他水生動物疾病診斷技術。本課程亦包括水生動物疾病之預防與治療及魚類免疫學診斷技術之應用。

**169024 Clinical Practice 1 E S. H. Tsai**

 **(Aquatic Animal Diseases ) (II)**

The purpose of this course is to provide the students with knowledge and practical techniques for clinical diagnosis of the diseased aquatic animal. Effective treatment and control measures are also introduced. The contents of this course include how to process the history taking, and to perform the clinical examination with the general and special methods. Instruction and practice of isolation, identification and various diagnosis techniques of aquatic animal pathogens such as bacteria, virus, fungi and parasite etc.

**169016 臨床豬病學二 2 選 鍾文彬、張聰洲**

**邱明堂**

本課程為「養豬醫學」專科醫師養成教育之第第一年基礎課程。本課程進行豬隻健康管理相關知識與技術之現場實習、講授與討論。授課內容包括豬隻傳染及非傳染性疾病診療、豬隻群體健康管理、豬隻生產及現場群體健康改善等新技術之訓練課程。

**169016 Clinical swine medicine (II) 2 E W.B. Chung,**

**T.C. Chang, M.T. Chiou**

This course is designed for the first-year graduate students planning to specialize in 「swine medicine」. Participants will be provided with lectures and discussion regarding the knowledge and skills in swine health management. The contents of this course include the clinical training in the diagnosis, treatment and control of individual infectious and non-infectious swine disease, swine herd health management, swine production, and on-farm swine herd health and disease control program..

**169020 水生動物生產醫學(II) 2 選 蔡信雄、陳石柱**

本學程修業科目之講授內容主要目標為奠定學生現場執業需具備的專業知識基礎。強調健康和生產關係，結合疾病診斷與預防理念。並與各水生動物診斷中心、家畜衛生試驗所、水產試驗所及業界合作，安排學生實地學習以因應未來實際執業之準備。本課程目標在培育學生水生動物生產醫學(飼養管理、疾病防治、生產管理)知識且具獨立診療能力之水生動物專科獸醫師，進而投身水生動物生產醫學及養殖產業管理分析工作。

**169020 Aquatic Animal Production 2 E S. H. Tsai, S. C. Chen**

 **Medicine (II)**

This course enabling students (veterinarians) to gain skills and knowledge to help them increase the health and productivity of their client's herds, as well as increase the value of their consulting services. The program consists of intensive workshops which include a wide variety of hands-on farm problem solving, culture farms practice innovations, as well as the latest in culture farms production analysis.

**169012 養豬醫學診療實習二 1 選 鍾文彬、張聰洲、邱明堂**

本課程為「養豬醫學」專科醫師養成教育之第一年基礎課程，以本校動物醫院及南部各養豬場之豬隻為實習對像，進行豬隻健康管理相關知識與技術之現場實習。授課內容包括豬隻傳染及非傳染性疾病診療、豬隻群體健康管理、豬隻生產及現場群體健康診療等技術之進一步訓練。

**169012 Clinical practice of 1 E W.B. Chung, T.C. Chang,**

**swine medicine (II) M.T. Chiou**

This course is designed for the first-year graduate students planning to specialize in 「swine medicine」. Participants will be provided with clinical practice regarding the knowledge and skills in swine health management. Animals involved in the clinical practice include the pigs registered in the Animal Hospital of NPUST and the animals from pig farms in southern Taiwan. The contents of this course include the advanced clinical training in the diagnosis, treatment and control of individual infectious and non-infectious swine disease, swine herd health management, swine production, and on-farm swine herd health and disease control program.

**166028小動物神經疾病學特論 2選 簡基憲**

 本課程希望學生能學習到確認傷害來自神經系統、定位出神經傷害的位置、評估傷害的大小及嚴重程度、決定造成神經傷害的原因。

**166028Special Topics on Small 2E C. H. Chien**

 **Animal Neurology**

 This course is designed to make students to learn confirming the problem from a lesion of nervous system, localizing the lesion in the nervous system, estimate the severity and extent of the lesion, determining the cause or the pathologic process or both.

169028 傳染病之致病機制 ３ 選 鍾文彬

本課程之內容為傳染病之致病機序，包括致病因子、宿主防禦機制、病原反應以及個別疾病之致病機序。

169028 Pathogenesis of Infectious ３ E W. B. Chung

 Diseases

The content of this course is the pathogenesis of infectious disease , including virulence factors, host response, pathogen’s response and pathogenic mechanisms of individual infectious disease.

169035 傳染病免疫機轉 ３ 選 鍾文彬

本課程旨在講述病毒、細菌、原蟲、蠕蟲對宿主所引起之免疫反應及宿主對上述之免疫防禦機轉。病原體如何逃避宿主免疫系統之辨認、攻擊之策略。由此瞭解病原體之免疫學之特性，以資提供傳染病防治之道。

169035 The Mechanisms of Host ３ E W.B. Chung

 Immunity to Infectious Diseases

The host immunity to pathogens, including virus, bacteria, protozoa, and helminthes as well, are concerned. Particularly, the mechanism of immunological defense of host cells against an attack due to adhesion, invasion and damages by pathogens. In view of immunopathology, the strategies of escape mechanisms performed by pathogens will be discussed in this course, so that the prevention from infectious disease will be mentioned also.

169036 訊息傳遞 ２ 選 吳弘毅

本課程將介紹細胞外之分子與細胞膜上之接受體之交父互作用，使細胞膜之接受體活化，將胞外之訊號擴大後傳遞到胞內。

169036 Signal Transudation ２ E H.Y. Wu

This curriculum introduces the interaction of an extra cellular legend with a Tran membrane protein that has domains on both sides of the membrane. Binding of legend converts the receptor from an inactive to an active form. A signal has in effect been amplified and transuded across the membrane.

169010 繁殖障礙特論 ２ 選 劉世賢

針對臺灣的畜牧環境，使學生了解家畜的生殖生理及繁殖障礙的發生原因,進而使學生瞭解臺灣及世界在家畜產科及繁殖障礙疾病之診斷，治療及預防以及其研究方法。

169010 Advance of Veterinary ２ E S. S. Liu

 Obstetrics and Reproductive

 Disorders

This course focuses on husbandry environment of Taiwan,student will understand the reproductive physiology and the course of reproductive disorder in domestic animals. Furthermore, the student will be know how to diagnosis、treatment、prevention and methods of study in this field on Taiwan and the world.

**169013 養豬醫學診療實習三 1 選 鍾文彬、張聰洲**

**邱明堂**

本課程為「養豬醫學」專科醫師養成教育之第二年課程，以本校動物醫院及南部各養豬場之豬隻為實習對像，進行豬隻健康管理相關知識與技術之現場實習。授課內容包括豬隻傳染及非傳染性疾病診療、豬隻群體健康管理、豬隻生產及現場群體健康改善等新技術之訓練課程。學生亦參與獸醫學系大學部學生「診療實習」之教學訓練。

**169013Clinical practice of 1 E W.B. Chung,**

**swine medicine (III) T.C. Chang, M.T. Chiou**

This course is designed for the second-year graduate students planning to specialize in 「swine medicine」. Participants will be provided with clinical practice regarding the knowledge and skills in swine health management. Animals involved in the clinical practice include the pigs registered in the Animal Hospital of NPUST and the animals from pig farms in southern Taiwan. The contents of this course include the advanced clinical training in the diagnosis, treatment and control of individual infectious and non-infectious swine disease, swine herd health management, swine production, and on-farm swine herd health and disease control program. The graduate students will be expected to participate in the teaching of the undergraduate course of「clinical practice (swine diseases)」.

**169017 臨床豬病學特論一 2 選 鍾文彬、張聰洲**

**邱明堂**

 本課程為「養豬醫學」專科醫師養成教育之第二年課程，本課程進行豬隻健康管理相關知識與技術之講授與討論。授課內容著重於教導學生獨立從事猪病診療及群體健康管理工作、特定新浮現或重要豬病之診斷與預防控制新技術。

**169017 Special topics on 2 E W.B. Chung, clinical swine medicine (I) T.C. Chang, M.T. Chiou**

This course is designed for the second-year graduate students planning to specialize in 「swine medicine」. Participants will be provided with lecture and discussion regarding the knowledge and skills in swine health management. The contents of this course will be emphasized on the training of the specialists in independently conducting the diagnosis, treatment and control of swine diseases, familiar with the new technology in herd health management, and the diagnosis and control of the newly emerged or important swine diseases.

**169021 水生動物疾病與治療學 2選 蔡信雄、陳石柱、陳瑞雄**

**張聰洲、蔡清恩**

本課程講解比較水生動物及其他動物之主要生理解剖構造之不同，以了解水生動物疾病發生之過程,介紹各種水生動物之病因、診斷、疫學預防及控制，另外又增加講解與公共衛生有關之水生動物疾病。另外，本課程更著重於學生對水生動物疾病微生物學、病理學及分子生物學診斷之要領，尤其以討論各類水產動物包括海水及淡水魚、蝦類等之疾病的病理學變化(包括肉眼及組織變化)及其致病機轉。

**169021 Aquatic animal Diseases 2 E S. H. Tsai, S. C. Chen**

**Diagnostic and Therapeutics R. S. Chern, T. C. Chang**

 **C. E. Tsai**

This course emphasizes major differences in aquatic animal and domestic animal structure and physiological features for understanding of aquatic animal diseases development, Etiology, diagnosis, epizootiology, prevention and control of disease in fish, including those important to the public health. In the other hand, the objective of this course is to study the techniques of diagnostic microbiology, pathology and molecular biology in aquatic animal diseases, especially in gross and histopathology and pathogenesis. The course includes marine and fresh water fish, shrimp, and shell fish diseases etc.

**169025水生動物疾病診療實習(III) 2 選 蔡信雄、陳石柱**

本課程講解及實際操作各種水生動物病原(包括細菌、病毒、黴菌及寄生蟲等)之分離,鑑定及其他水生動物疾病診斷技術。本課程亦包括水生動物疾病之預防與治療及魚類免疫學診斷技術之應用。

**169025 Clinical Practice 2 E S. H. Tsai, S. C. Chen**

 **(Aquatic Animal Diseases ) (III)**

The purpose of this course is to provide the students with knowledge and practical techniques for clinical diagnosis of the diseased aquatic animal. Effective treatment and control measures are also introduced. The contents of this course include how to process the history taking, and to perform the clinical examination with the general and special methods. Instruction and practice of isolation, identification and various diagnosis techniques of aquatic animal pathogens such as bacteria, virus, fungi and parasite etc.

169044 聚合酶鏈反應技術之應用 ２ 選 廖明輝

講述PCR原理及其技術應用，原蟲性，細菌性及病毒性疾病之PCR診斷技術，該內容包括引子之設計要領，RT-PCR，RAPD-PCR，定量PCR及PCR選殖，及其蛋白之表現等。

169044 Application of Polymerase ２ E M. H. Liao

 Chain Reaction Technique

The mechanism of polymerase chain reaction (PCR) and the applications of PCR will be introduced. The PCR techniques included designing of primers, RT-PCR, RAPD-PCR, quantitative PCR and PCR cloning as well. Moreover, the expression of the recombinant protein derived from the cloned gene by using PCR will also be introduced in this class.

169045 人畜共通疾病特論 ２ 選 連一洋

本課程將針對重要或惡性的人畜共通傳染病，就其病因學、致病機序、流行病學、診斷、以及控制等做深入的探討和了解，學生必須蒐集研讀最新的文獻資料和作專題報告。

169045 Special Topic in Zoonosis ２ E Y. Y. Lien

The purpose of this course is to provide graduate students with an advanced study to some important zoonoses. The course will focus on the specialized topics discussed throughout etiology, pathogenesis, epidemiology, diagnosis and control. Students are required to study more current articles and to make an presentation.

169054 基因調控 ２ 選 吳弘毅

本課程將著重於反式作用因子如何與順式作用的DNA序列交互作用以便調控細胞內之基因表達。

169054 Gene Regulation ２ E H. Y. Wu

The curriculum emphasizes the interaction of both trans-acting factors and cist-acting DNA sequences in order to regulate gene expression in cells.

**169014 養豬醫學診療實習四 1 選 鍾文彬、張聰洲**

**邱明堂**

本課程為「養豬醫學」專科醫師養成教育之第二年課程，以本校動物醫院及南部各養豬場之豬隻為實習對像，進行豬隻健康管理相關知識與技術之現場實習。授課內容包括豬隻傳染及非傳染性疾病診療、豬隻群體健康管理、豬隻生產及現場群體健康改善等新技術之訓練課程。學生亦參與獸醫學系大學部學生「診療實習」之教學訓練。

**169014 Clinical practice of 1 E W.B. Chung, swine medicine (IV) T.C. Chang, M.T. Chiou**

This course is designed for the second-year graduate students planning to specialize in 「swine medicine」. Participants will be provided with clinical practice regarding the knowledge and skills in swine health management. Animals involved in the clinical practice include the pigs registered in the Animal Hospital of NPUST and the animals from pig farms in southern Taiwan. The contents of this course include the clinical training in the diagnosis, treatment and control of individual infectious and non-infectious swine disease, swine herd health management, swine production, and on-farm swine herd health and disease control program. The graduate students will be expected to participate in the teaching of the undergraduate course of「clinical practice (swine diseases)」.

**169018 臨床豬病學特論二 2 選 鍾文彬、張聰洲**

**邱明堂**

 本課程為「養豬醫學」專科醫師養成教育之第二年課程，本課程進行豬隻健康管理相關知識與技術之講授與討論。授課內容著重於教導學生獨立從事猪病診療及群體健康管理工作、特定新浮現或重要豬病之診斷與預防控制新技術。

**169018 Special topics on 2 E W.B. Chung, clinical swine medicine (II) T.C. Chang, M.T. Chiou**

This course is designed for the second-year graduate students planning to specialize in 「swine medicine」. Participants will be provided with lectures and discussion regarding the knowledge and skills in swine health management. The contents of this course will be emphasized on the training of the specialists in independently conducting the diagnosis, treatment and control of swine diseases, familiar with the new technology in herd health management, and the diagnosis and control of the newly emerged or important swine diseases.

**169022 臨床水生動物疾病學特論 2 選 蔡信雄**

本課程教導學生較深入的水生動物疾病知識尤其著重於發生於臺灣的疾病。內容包括個別疾病之致病因子、致病機序及控制方法。本課程亦介紹最新的水生動物疾病診斷及控制技術，如分子診斷技術、DNA疫苗、新的生物製劑及增進群體健康的新方法等。

**169022 Special Topic in Clincial 2 E S. S. Tsai**

 **Aquatic animal Diseases**

This course teaches students advanced knowledge regarding aquatic animal diseases especially those occurred in Taiwan. The content includes virulence factors, pathogenic mechanisms and control method of individual aquatic animal diseases. Advanced techniques required for the diagnosis and control of aquatic animal diseases such as molecular diagnostic techniques, DNA vaccine, new bioproducts and new methods for the improvement of herd health and animal welfare will also be introduced in the course.

**169026 水生動物疾病診療實習(IV) 2 選 蔡信雄、陳石柱**

本課程講解及實際操作各種水生動物病原(包括細菌、病毒、黴菌及寄生蟲等)之分離,鑑定及其他水生動物疾病診斷技術。本課程亦包括水生動物疾病之預防與治療及魚類免疫學診斷技術之應用。

 **169026 Clinical Practice 2 E S. H. Tsai, S. C. Chen**

 **(Aquatic Animal Diseases) (IV)**

The purpose of this course is to provide the students with knowledge and practical techniques for clinical diagnosis of the diseased aquatic animal. Effective treatment and control measures are also introduced. The contents of this course include how to process the history taking, and to perform the clinical examination with the general and special methods. Instruction and practice of isolation, identification and various diagnosis techniques of aquatic animal pathogens such as bacteria, virus, fungi and parasite etc.

169057 水生動物免疫學及疫苗 ２ 選 陳石柱

本課程主要教導學生各種水生動物之免疫學及各種水生動物用疫苗的製造技術。其內容包括水生動物免疫學器官之組織細胞、特異性及非特異性免疫系統、免疫系統之自然發生及免疫調節、水生動物用疫苗的製造方法等。

169057 Aquatic Animal Immunology ２ E S. C. Chen

 and Vaccine

The purpose of this course is to teach the production techniques of various aquatic animal vaccines and immunology　.Course contents include the preparation of various aquatic animal vaccines, cell and tissue of immune system of fish, the nonspecific and specific immune system, natural change in the immune system, and immunomodulation.

169056 免疫學新知 ３ 選 莊秀琪、鍾文彬

教學內容主要以Nature Immunology Review期刊為本，介紹及討論最近免疫學之最新知識。討論主題包括先天性免疫系統、抗原辨識、免疫細胞之發育分化與活性、促發炎激素/細胞激素/趨化細胞素之釋出與調節、免疫相關基因之訊息傳遞、免疫相關基因之多型性與免疫系統演化、傳染性疾病免疫機轉、腫瘤細胞與免疫系統、過敏性免疫反應、免疫不全之分子機轉，以加強學生各方面免疫學知識。

169056 Update in Immunology ３ E H. C. Chaung & W. B. Chung

Nature Immunology Review will be use as the main journal for discussion in this course. The topics will include the innate immune responses, antigen recognition, development, differentiation and activation of lymphocytes, the production and regulation of pro-inflammatory cytokines/cytokines/chemokines, signal transduction of immune related genes, the polymorphism and SNP in immune related genes, infection related immune responses, tumor cells and immune system, allergic immune responses and molecular basis of immunodeficiency. This course will update graduate student knowledge regarding the above topics in immunology.

169004 分子生物學 ３ 選 莊秀琪

本課程目的在使研究生對分子生物學包括細胞生長分化的控制、細胞凋亡作用、基因的調控機制、突變與基因修補、以及DNA、RNA與蛋白質之研究方法、基因疫苗以及基因療法有更深入的了解。課堂中也會討論相關領域之最新研究報告。

169004 Molecular Biology ３ E H. C. Chaung

The purpose of this course is to introduce specific topics in molecular biology, including the growth and differentiation of cells, the apoptosis of cells, gene regulations, gene mutation, gene repair, transcription factors and their structural characteristics, research methodology on DNA, RNA and proteins, DNA vaccine and gene therapy. The update knowledge on related topics will be also discussed in this course.

169046 免疫遺傳學 ２ 選 邱明堂

本課程之目的在使學生了解免疫學裡有關基因遺傳的一些觀念，尤其著重在組織相容性複體蛋白質和基因的多變性以及對整個免疫機制的影響。

169046 Immunogenetics ２ E M. T. Chiou

The principal goal of this course is to provide students with an understanding of the evolution of immunology concepts. The course will discuss how the major histocompatibility complex genes and proteins are polymorphism and can turn on the immune system.