**動物科學與畜產系**

**Department of Animal Science**

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| **專業必修科目Required Courses** |
| 266001 | 專題討論 | 4 | 必 | 全系老師 | 上、下 |
| 本課程旨訓練研究生對於與畜產科學或論文有關的題目，經由資料之收集、研讀與彙整，令學生從而習得相關之專業知識，並由之獲得資料之分析、歸納與邏輯思考、試驗設計與統計、數據分析與統整之能力。並藉由書面報告、口頭發表及討論之歷練，以培養學生之論文撰寫能力及口頭表達能力。 |
| 266001 | Seminar | 4 | R | Faculties | F、S |
| The purpose of this course is to give graduate students the trainings on searching information, reviewing references related to animal science or their research topics, therefore, the abilities on logical thinking, experimental design, data collection and analysis, results discussion. Students are required to select a topic in the field of animal science or that related to their thesis. Students must give oral presentation and dissertation. |
| 266003 | 碩士論文 | 6 | 必 | 指導教授 | 上、下 |
| 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。老師則藉由討論，提供改進之意見。 |
| 266003 | Thesis | 6 | R | Advisors | F、S |
| After a well-designed project being properly conducted by students, he/she will be asked to give a oral presentation and summit 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 |

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| **專業選修科目 Elective Courses** |
| 266002 | 動物科學研究新趨勢 | 2 | 選 | 全系老師 | 上 |
| 本課程藉由探討近期動物科學研究趨勢及方法，以提升研究生對動物科學文獻閱讀、試驗設計、研究技術及想法開拓之能力。課程內容涵蓋動物生殖科技研究、乳肉蛋新產品開發應用、經濟性狀育種選種策略評估、飼料品質評估及副產品利用及進階動物飼養管理等等。 |
| 266002 | New Trends and Techniques in Animal Science Research | 2 | E | Faculties | F |
| The purpose of this course is to introduce the latest trends and techniques in animal science to enhance the ability of graduate student in reading scientific literatures, performing experimental design, enhancing research techniques and developing novel ideas. The course includes animal reproductive technology, development and application of meat, milk, and egg new products, breeding and selection in economic traits, assessment and evaluation of feedstuffs, utilization of feed by-products, and advanced feeding and management in farm animals. |
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| 266004 | 應用畜產微生物 | 2 | 選 | 林美貞 | 上 |
| 本課程討論微生物資源運用、發酵產品生產以及防治有害微生物的原理和方法。內容包括菌種選育、微生物發酵、發酵食品、食品污染與腐敗、食品保存與微生物管制等，並討論畜產相關微生物之最新資訊。 |
| 266004 | Applied Microbiology in Animal Science | 2 | E | M. J. Lin | F |
| This course discusses the utilization of microbiological recourses, the production of fermented products and prevention of pathogenic and spoilage microorganisms. The content of this course includes culture selection, fermentation, fermented foods, food contamination and spoilage, food preservation and microbiological control, and the new information of related subjects. |
| 266005 | 動物科學文獻選讀 | 2 | 選 | 全系老師 | 上 |
| 本課程將講授論文寫作與研究方法的基本架構、必要守則、及重要關鍵。透過研讀畜產科技中各種不同知識領域（遺傳育種、生理、營養、飼養、肉品和乳品加工）的中英文期刊論文，訓練研究生熟悉論文查詢、英文論文閱讀、科學論文的研究方法與寫作技巧。 |
| 266005 | Literature Studying | 2 | E | Faculties | F |
| This course will teach graduate students the basic structure, logic and important rules of both research methodology and scientific writing. It includes studying both Chinese and English published papers in various fields of animal science, including genetics, breeding, physiology, nutrition, feeding, meat processing and dairy processing. The aim of this course is to improve students’ ability on paper searching, English literature studying, research techniques and scientific writing skills. |
| 266006 | 乳品化學 | 2 | 選 | 林美貞 | 上 |
| 本課程討論原料乳及乳製品加工及儲存過程中之變化。課程內容包括供人類飲用之哺乳動物乳汁之組成與物理化學特性；各式乳與乳製品於加工過程中各種化學變化及重要機制；微生物發酵之理化變化；以及貯存期間乳與乳製品品質之變化。 |
| 266006 | Dairy Chemistry | 2 | E | M. J. Lin | F |
| This course discusses the changes of raw milk and dairy products during processing and storage. The content of this course includes the composition and physical-chemical properties of milk from various domestic mammals; chemical changes and mechanisms of dairy products during processing; physical-chemical changes of milk during fermentation; and the changes of quality of dairy products during storage. |
| 266007 | 肉品化學 | 2 | 選 | 陳志銘 | 上 |
| 本課程著重於肉品之組成、性質以及肉品加工、貯藏過程中之變化。內容包含：脂肪、蛋白質、酵素、碳水化合物、灰分、維生素與水之結構、物理化學特性，肉色，酸鹼度，肉品加熱與冷卻之方法與影響等。 |
| 266007 | Chemistry of Meat Tissue | 2 | E | C.M. Chen | F |
| This course focuses on the composition, characteristics, and changes of meat and meat products during processing and storage. Also, the structures, physic-chemical properties of lipids, proteins, enzymes, carbohydrates, ash, and vitamins are also addressed. Meat colors, pH, influences caused by heating and cooling are also covered. |
| 266008 | 應用生物資訊學 | 2 | 選 | 劉世華 | 上 |
| 本課程旨在透過序列分析與電腦運算方式闡釋，使學生瞭解蛋白質功能表現與生物性狀之關係，培養學生熟悉生物資訊庫之搜尋程序與資源應用技術。課程內容包括網路資源介紹、序列比對、分析與註解、應用軟體介紹與公開網站與資料庫搜尋。 |
| 266008 | Applied Bioinformatics | 2 | E | S.H. Liu | F |
| The course is to explore the relationship between proteomic and biological traits via sequence analysis and computation protocols, and thus provides students with skillful techniques in both searching and resources application for bio-databases. Course content includes an introduction of web sites, skill in sequence alignment, analysis and annotation, useful software application, and public web and databases searching capability. |
| 266009 | 消化道生理 | 2 | 選 | 余　祺 | 上 |
| 本課程旨在探討動物消化腺所分泌之消化液、調節作用功能、對營養分之利用及保護動物體免受病菌感染之免疫機制。主要內容包括：消化道之解剖生理、消化器官之生長發育、消化液之分泌調控、養分消化吸收及排泄、腸道微生物、及腸道黏膜免疫機制。 |
| 266009 | Digestive Physiology | 2 | E | C. Yu | F |
| The objective of digestive physiology is to introduce the digestive enzyme secretion, nutrient requirement and metabolism, and gastro-intestinal tract immunology. The major concepts of this course include: anatomy of the gastro-intestinal tract, growth and development of the digestive system, regulation of digestive enzymes, digestion, absorption, and excretion of nutrients, microbiology of the gut, and immune response of intestinal mucosa. |
| 266010 | 禽畜營養生理 | 2 | 選 | 謝豪晃 | 上 |
| 本課程主要探討家畜營養與生理之關係，瞭解如何從營養觀點在維持正常健康之家畜，以及不適當的營養對家畜所造成之影響。課程內容包括：各種營養素之營養生理功能、討論各種動物之消化系及其營養生理、進一步探討不同生理功能及生理階段之特殊營養需要。 |
| 266010 | Special Topics on Animal Nutritional Physiology | 2 | E | H. H. Hsieh | F |
| The objectives of this course are: To discuss the relation between animal nutrition and physiology, To understand how to amaintain animal health through nutrition, To address the influence of improper nutrition on animal production. The course contents include: The physiological functions of all nutrients, include carbohydrate, lioid, protein, vitamins and minerals, discussion on the digestive physioloy of different animals and the roles in nutritional physology, further discussion on the special nutritional needs in various physiological functions and phases. |
| 266011 | 生長發育學 | 2 | 選 | 翁瑞奇 | 上 |
| 本課程目的主要探討動物生長，瞭解生長後可用於育種、營養、肉品、生物工程等，其內容為：細胞發展與身體組成、生長控制機制、胚生長、骨胳生長發育、脂肪生長發育、肌肉生長發育、身體組成生長曲線、身體生長量測、生長遺傳控制、營養對生長之影響、激素對體組成之影響、環境對體組成之影響、肌肉量和質的關係、生長與性成熟。 |
| 266011 | Growth and Development | 2 | E | R. C. Weng | F |
| The purpose of the course is to study animal growth; consequently the knowledge can be applied to animal breed, nutrition, meat science, biotechnology production, etc. The content will include: Cellular development and body composition; Growth control mechanisms; Prenatal growth; Bone growth and development; Fat development and deposition; Muscle growth and development; Body compostition and growth curves; Methods to measure body compostition; Genetic regulation of growth; Influence of nutrition on body compostition; Hormonal influence on body composition; Environmental influence on body composition; Relationship of muscle quality to quantity; Growth and sex maturity. |
| 266012 | 畜產統計特論 | 2 | 選 | 張秀鑾 | 上 |
| 課程主要目的在探討可應用於試驗與調查資料之統計分析方法，包括變異數分析、共變異數分析、單迴歸與複迴歸分析，以及卡方檢定；內容並針對所得資料變因之量化與推論可信度等方面進行探討。作業係以SAS統計套裝軟體為輔助工具。 |
| 266012 | Statistical Methods Useful in Animal Science | 2 | E | H. L. Chang | F |
| Introduction to advanced statistical methods for analyzing experimental and survey data. Statistical methods covered will include analysis of variance, analysis of covariance, simple and multiple linear regression, and Chi-square tests. Course emphasis on quantifying sources of variation and making inference from data collected. These assignments will involve mainly making informative inference via SAS package. |
| 266013 | 動物生殖生理特論 | 2 | 選 | 沈朋志、劉炳燦 | 上 |
| 由於動物生殖現象存有相當程度之變化，本課程將試著引導學生充分了解一般共同生殖要點及各動物生殖細節之不同，並著重生殖技術方法之介紹，使學生對哺乳動物生殖有全面認識。課程內容著重於性別、性腺功能、懷孕分娩；一般生殖技術；生物技術應用於生殖。 |
| 266013 | Special Topics on Animal Reproductive Physiology | 2 | E | P. C. Shen, B. T. Liu | F |
| A lot of variation in the reproduction is observed amongst different species. The objection of this course attempt to discuss the general fundamental facts and details differ on reproductive events for students can take a whole picture on mammalian reproduction. We also emphasize to introduce the research or farm practice technique on reproduction. Course contents include: Sex, gland function and pregnancy and parturition; Basic reproductive technique; Modern biological technique on reproduction |
| 266014 | 芻料品質評估 | 2 | 選 | 吳錫勳 | 上 |
| 本課程之主旨主要是提供詳盡之方法，去做芻料之營養評估，課程內容包含下列主題：芻料評估對人畜之重要性；以動物成績為飼料評估之標準；芻料能量計算；能量評估及芻料代謝管理；芻料蛋白質計算；以酵素方法計算消化率；原味測定計算芻料之降解率；物理化學的方法評估芻料營養；氣體生產累積法評估芻料；礦物質；維生素；抗營養因子；芻料攝取量評估之重要性；脂質分析等。 |
| 266014 | Forage Evaluation | 2 | E | H. H. Wu | F |
| The purpose of this course is to provide the detailed ways on how to evaluate forage. The course will include the following topics: the importance of forage evaluation for humans and animals; animal performance as the criterion for feed evaluation; estimating the energy value of forages; energy evaluation, management of forage metabolism; estimating the protein value of forages; enzyme techniques for estimate digestibility; the in situ techniques for the estimation of forage degradability; physicochemical approaches; cumulative gas-production techniques for forage evaluation; mineral; vitamin; antinutrition factors; the importance of intakes in feed evaluation, and chemical analysis of lipid fractions. |
| 266015 | 乳品加工特論 | 2 | 選 | 林美貞 | 下 |
| 本課程討論乳製品加工及儲存方法與條件對乳與乳製品品質之影響。課程內容包括供人類飲用之哺乳動物乳汁之組成與差異性；各式乳與乳製品原料之應用、處理與儲存；加工技術之原理與方法；以及加工處理及貯存條件，對乳製品理化及風味品質之影響。 |
| 266015 | Special Topics on Milk Products Processing | 2 | E | M. J. Lin | S |
| This course discusses the effects of processing methods and storage condition on the quality of milk and dairy products. The content of this course includes the variation of milk composition from various domestic mammals; storage, processing and application of raw milk; technical procedures involving producing various dairy products; and the effects of processing and storage conditions on the physical-chemical and sensory properties of dairy products. |
| 266016 | 肉品加工特論 | 2 | 選 | 陳志銘 | 下 |
| 本課程著重於肉品加工過程中技術、化學與微生物間之相關，使學生充分了解肉品科學之關聯性。 |
| 266016 | Special Topics on Meat Products Processing | 2 | E | C.M. Chen | S |
| This course set in the context of the concepts of technology, chemistry and microbiology of meat manufacturing processing, provide a full comprehensive understanding of meat science. |
| 266017 | 畜產加工用副原料之應用 | 2 | 選 | 林美貞 | 下 |
| 本課程討論畜產加工領域中除乳、肉及蛋以外之副原料之應用及原理。內容包括乳品、肉品及蛋品加工中常用之添加劑；營養強化物質及機能性成分物質之添加；食品添加物使用規範及相關法規；及畜產品作為其他食品產業副原料之應用。 |
| 266017 | Applying Additives to Processing of Animal Products | 2 | E | M. J. Lin | S |
| This course discusses the application and principle of applying additives to animal products processing. The content of this course includes common additives of dairy, meat and egg processing; addition of nutrient fortification and functional ingredients; regulation of additives usage; and application of animal products on food industry. |
| 266018 | 線性模式與育種 | 2 | 選 | 張秀鑾 | 下 |
| 本課程主要目的在探討線性統計模式之一般估計量與統計假說之檢定，及其於遺傳育種之應用。內容除著重於統計育種之理論基礎外，尚包括應用矩陣代數於線性模式之統計分析與SAS電腦套裝軟體之理論背景闡釋，建立統計分析正確理念與提升學生應用SAS系統之純熟能力。 |
| 266018 | Linear Model and Breeding | 2 | E | H. L. Chang | S |
| The aims of this course will be emphasis on the study of the general estimation problems and test the testable hypothesis for linear statistical model, and thus applied to the genetic and breeding aspects. In addition to theory of statistical breeding, topics will cover useful matrix algebra for linear model methodology and statistical insights of SAS package, and thus enhance the students’ ability when the statistical package employed. |
| 266019 | 動物代謝調節 | 2 | 選 | 余　祺 | 下 |
| 本課程旨在探討動物各器官組織之營養分代謝及調控方式，以培養學生研習營養分代謝調節之相關課題能力。主要內容包括：腸道及血液內養分之運輸、營養素於肝臟之代謝、肌肉及腦之能量蛋白質代謝、脂肪組織、骨骼之養分代謝、腎臟代謝及電解質平衡。 |
| 266019 | Animal Metabolic Regulation | 2 | E | C. Yu | S |
| The objective of this course is to discuss the metabolic regulation of different organs and tissues in farm animal. Students will familiar with the metabolic regulation of nutrients and apply the principle on their research. The main contents of this course include: transport properties in blood and gut, nutrients metabolism in liver, protein and energy metabolism in muscle, adipose tissue, nutrients metabolism in bone, kidney metabolism, and electron balance. |
| 266020 | 分子營養學 | 2 | 選 | 余　祺 | 下 |
| 本課程旨在介紹分子營養學的發展及現今研究之幾種營養素對基因表達的影響，同時敘述基因多態性對部分營養物質之吸收、代謝及利用之作用。主要內容包括：代謝和基因調控、基因結構和基因表現、碳水化合物、蛋白質、脂肪對基因表達的調控、維生素及礦物質對基因表達之調節，及分子營養學之展望。 |
| 266020 | Molecular Nutrition | 2 | E | C. Yu | S |
| The objective of this course is to introduce the development of molecular nutrition and up date information of nutrients on gene expression, and the function and metabolic pathways that the genes involved. The major concepts include: metabolism and regulation, gene structure and gene expression, carbohydrate on gene expression, protein on gene expression, lipids regulation, vitamins and gene expression, minerals and gene expression, and the perspective of molecular nutrition. |
| 266021 | 飼料技術特論 | 2 | 選 | 鄭長義 | 下 |
| 本課程係討論禽畜飼料之最新科技，其內容包括：飼料原料中抗營養因子之去除技術、配合飼料之製造技術與品管、飼料配方設計技術、飼料科技之研發動向。 |
| 266021 | Special Topics on Feed Manufacture Technology | 2 | E | C. Y. Cheng | S |
| This course will discuss the modern science and technology of livestock feeds, which contains: Disjoin techniques on anti-nutrient factor of ingredient feeds; The processing and quality control of formular feeds; Design technique of livestock feed formualtion; The research advancement of feeds science and technology. |
| 266022 | 安全畜產品生產特論 | 2 | 選 | 陳志銘 | 下 |
| 本課程旨在探討抗生素造成之問題及取代抗菌藥物之畜產品生產。主要內容包括無藥物殘留畜產品介紹、取代抗菌藥物之物質與安全性畜產品、及無菌無污染之畜產品加工製成。 |
| 266022 | Special Topics on Safe Animal Production | 2 | E | C. M. Chen | S |
| Current topics in safe animal production will be discussed, with special emphasis on the problems of antibiotic residues, the various species of antibiotic replacers, and the production of free contamination safe animal products. |
| 266023 | 動物試驗設計 | 2 | 選 | 張秀鑾 | 下 |
| 本課程旨在介紹試驗設計於控制動物試驗誤差之有效應用，並伴隨著適當合理的統計分析法，應付不同形態與性質之資料。授課內容主要包括優良試驗法則、完全隨機設計、拉丁方設計、交叉設計、複因子設計、不均衡設計、巢式設計與變積分析等。 |
| 266023 | Experimental Designs for Farm Animals | 2 | E | H.L.Chang | S |
| The aims of this course are to state the error control via optimum design and the application of robust statistical methodologies for various types of dataset from farm animal experiment. The main content covers the principles of good experiment, completely randomized design, Latin square design, change-over design, factorial design, unbalanced design, nested design and analysis of covariance. |
| 266024 | 環境溫度與禽畜生產 | 2 | 選 | 翁瑞奇 | 下 |
| 本課程之目的在探討高環境溫度下，家畜禽生產所遇到的問題及解決之方法。課程內容包括，熱帶畜牧對動物生產之影響，環境之定義，溫度相關知識，溫度對生理之影響，溫度和營養之關係，高溫對豬之影響，高溫對牛之影響，高溫對羊之影響，高溫對種雞之影響，高溫對肉雞之影響，高溫對蛋雞之影響，高溫對其他動物之影響，高溫對牧草生產之影響。 |
| 266024 | Environmental Temperature and Livestock Production | 2 | E | R. C. Weng | S |
| The purpose of this course is to study the effect of high environmental temperature on animal production, and how to solve the problems. The following topics included in the course. Animal production problem under tropical environment, environment, temperature, the effect of temperature on physiology, the effect of temperature on nutrition metabolism, the effect of high temperature on pigs, the effect of high temperature on cattle, the effect of high temperature on sheep and goat, the effect of high temperature on breed chicken, the effect of high temperature on broiler, the effect of high temperature on layer, the effect of high temperature on other animal, the effect of high temperature on forage grass. |
| 266025 | 經濟動物繁殖管理特論 | 2 | 選 | 劉炳燦 | 下 |
| 本課程係以文獻檢討之方式，介紹近年來在家畜繁殖技術方面之進展。課程內容包括：發情與配種之人工控制，包括發情同期化及排卵時間之控制；季節性繁殖家畜之季節外配種控制，特別是在綿羊與山羊；家畜胚之體外生產技術，包括卵母細胞之體外成熟、體外受精及受精卵體外培養至囊胚階段；家畜精液與胚之冷凍保存技術，由傳統慢速冷凍發展至玻璃化冷凍；精子與胚之性別鑑定，包括flowcytometry與PCR技術之應用；胚操作與移置相關技術；家畜之複製，以細胞核移置及複製後之相關問題為主。 |
| 266025 | Special Topics on Farm Animal Reproductive Management | 2 | E | B. T. Liu | S |
| This subject provides the introduction of the progress on reproductive technology in farm animals in recent years through reference reviewing. The contents of the subject includes: Artificial control of estrus and breeding, including estrus synchronization and control of ovulation timing. Control of breeding in seasonal breeders out of season particularly in sheep and goat. Production of embryos in vitro including maturation and fertilization of oocytes, and culture of embryos until blastocyst stage. Cryopreservation of semen and embryos, development of vitrification method out of conventional slow freezing method. Sexing of spermatozoa and embryos including the application of flow cytometry and PCR techniques. Manipulation and transplantation of embryos. Cloning of farm animals mainly the nuclear transfer and associated problems after cloning |
| 266026 | 科學論文寫作 | 2 | 選 | 沈朋志、林美貞 | 上 |
| 本課程旨在訓練研究生對相關論文查詢、資料蒐集、整理、引用及表達的能力。學生選擇論文有關的主題，蒐集文獻、閱讀、並將論文主題相關之試驗結果整理成摘要，提出報告並與共同討論。 |
| 266026 | Thesis Writing | 2 | E | P.C. Shen、 M. J. Lin | F |
| This course is designed to train graduate students the ability in searching literature, organizing material and data, and presenting results. Students are required to select a topic in the field of those related to their thesis, search and review literature and draw up a brief. |
| 266027 | 專技英文寫作 | 2 | 選 | 林美貞等 | 上 |
| 本課程旨在訓練研究生專業英文之寫作，本課程將針對國人於英文科學論文寫作易有之用詞錯誤、文法錯誤及邏輯編寫錯誤加以探討。期望研究生於修習本課程後，具備撰寫論文英文摘要之能力。 |
| 266027 | Scientific Writing in English for Chinese Authors | 2 | E | M. J. Lin et al | F |
| This course will be emphasis on writing. After successfully completing this course, the student will have obtained confidence and new skills to write scientific English sentences without serious grammatical errors, avoid errors in English that are most common to Chinese authors, prepare a summary in English of a scientific paper in Mandarin, plan and organize a research project and describe it in a scientific paper, and complete an effective resume for employment application. |
| 266028 | 蛋品加工特論 | 2 | 選 | 林美貞 | 上 |
| 本課程就蛋之利用以及過去與未來各式蛋製品之加工趨勢，分別就蛋之化學性狀，非食品類之利用，營養與功能性之修飾或蛋製品之設計等之技術等加以廣泛討論。 |
| 266028 | Special Topics on Egg Product Processing | 2 | E | M.J. Lin | F |
| The course discuss wide range of egg uses and processing technologies including current and future world tends, separation technologies for egg chemicals properties, non-food uses, functional and nutritional modification or designing of egg products. |
| 266029 | 動物新產品開發方法論 | 2 | 選 | 林美貞 | 上 |
| 本課程討論動物產品研發之流程、方法及整體評估方式。內容包括新產品設計、市場評估法、成本分析、風險評估、研發方法、製程調整及製造、產品包裝、相關法規及規範、專利及智慧財產權、動物新產品開發方向及趨勢。 |
| 266029 | Methodology of Animal Products Development | 2 | E | M. J. Lin | F |
| This course discusses the developing procedures and evaluating methodology of new animal products. The content of this course includes designing new products, consumer research, prototype development, financial evaluation, risk analysis, technical plan, other R&D methodology, manufacturing, food packaging, safety and regulation, protection of intellectual property, and focal issue in animal science and food science. |
| 266030 | 泌乳生理學 | 2 | 選 | 劉炳燦 | 上 |
| 本課程目的乃在探討與泌乳有關之生理因子，內容包括：牛乳生合成及細胞分泌機制、內分泌對乳腺及泌乳之影響、營養因子對泌乳之影響、環境因子對泌乳之影響、生物技術應用於泌乳、及乳房炎及其預防。 |
| 266030 | Physiology of Lactation | 2 | E | B. T. Liu | F |
| This course is intended to review and discuss the physiological factors on lactation. Course contents include biosynthesis and cellular secretion of milk, endocrine control of mammary gland and lactation, nutritional aspects of lactation, environmental aspects of lactation, biotechnique on lactation, and mastitis and the defense system. |
| 266031 | 數量遺傳與動物模式論 | 2 | 選 | 張秀鑾 | 上 |
| 課程旨在延伸線性統計模式與分析方法之應用，主要著重於應用動物模式於畜產動物遺傳評估與選種策略之整合應用。內容包括動物模式介紹、種畜禽關係係數與近親係數估計、動物模式延伸、多性狀動物模式與非累加遺傳模式建立與應用。 |
| 266031 | Quantitative Genetics and Animal Model Methodology | 2 | E | H. L. Chang | F |
| This graduate course is intended to extend the application of linear statistical models and methods in the genetic evaluation and selection strategy for farm animal with focus on animal model methodology. Course content includes animal model introduction, estimation of relationship and inbreeding coefficients, animal model extension, multiple traits animal model and non-additive genetic model building and application in farm animal selection program. |
| 266032 | 機能性畜產品生產 | 2 | 選 | 鄭長義 | 上 |
| 本課程主要係探討各種機能性畜產品之生產技術，課程內容包括：機能性畜產品之市場現況、機能性畜產品之機能作用、免疫抗體之機能作用、雞蛋中生物活性物質之機能作用、機能性畜產品之生產技術(包括機能性蛋品、肉品及乳品等)。 |
| 266032 | Production of Functional Animal Products | 2 | E | C. Y. Cheng | F |
| The purposes of this course are to studies the production technology of functional animal products, which contains introduction on the currents situation of the production and marketing for functional animal products, the function of functional animal products, the function of immunoglobulin yolk (IgY), the function of active material in egg, the production technology of functional animal products of egg, meat and milks. |
| 266033 | 草食動物營養特論 | 2 | 選 | 吳錫勳 | 上 |
| 本課程之目的在於介紹反芻動物生態系統之生物學，並探討此系統之問題與無法解決之困擾，並引導研究生未來研究之方向，課程內容包括：(1)闡述反芻動物生態系統，植物─微生物─動物交互作用與飼養策略(2)飼料作物化學(3)瘤胃功能與微生物學(4)後瘤胃之吸收與代謝(5)後腸醱酵。 |
| 266033 | Special Topics on Nutrition for Herbivores | 2 | E | H. H. Wu | F |
| The objectives of this course are introducing the biology of the ruminant ecosystem, pointing out the problems and unsolved puzzles in the system, and addressing the potential research direction for the entry-level graduate students. Course contents include description of ruminant ecosystem, plant-microbe-animal interaction and feeding strategy; forage chemistry; rumen function and microbiology; post-ruminal absorption and metabolism of host animal; and hindgut fermentation |
| 266034 | 乳品加工發展新趨勢與個案討論 | 2 | 選 | 林美貞 | 上 |
| 本課程以個案討論方式，就乳業目前及未來面臨之問題及乳業發展新技術，由生產、製造、品管至產品販售進行系列討論。以使學生能瞭解乳業之現階段與未來發展性，並對於新產品及趨勢具有前瞻性。將學生分組進行新產品企劃案之規劃，以培養學生發現問題、資料蒐集及分析整理、邏輯思考及辨正之技能。 |
| 266034 | New Trends and Special Cases in Dairy Industry | 2 | E | M. J. Lin | F |
| This course focuses on the present and future problems as well as the new technique and techomogy in dairy industry. Case study and new dairy product design are two important interactive activities in this program. The discussion of case study will be focused on milk production, manufacture and quality control of dairy products, and other incidences in dairy industry. Students will be divided in groups for designing a proposal of developing a new product or a project of improving quality of product and production.  |
| 266035  | 畜產海外專業實習 | 2 | 選 | 張秀鑾、林美貞 | 上 |
| 本課程旨在提供碩士班研究生海外專業實習，以瞭解產業現況與加強畜產專業能力之養成，進而培養良好工作態度與增進現場實作能力。同時，經由海外實習機會，增進學生畜產專業之國際觀，達到增強學生未來就業能力之目標。 |
| 266035  | Overseas Practice of Animal Science | 2 | E | H. L. Chang and M. J. Lin | F |
| The aims of this course are designed for the oversea training of animal science graduate students to realize current status of animal industry, enhance professional capacity, educate working attitude, and train practical ability. It also provides industrial experience and career capacity for students. By doing practice overseas, students can learn from our sister university and broaden students’ global view. |
| 266036 | 動物舍規劃與自動化 | 2 | 選 | 翁瑞奇 | 上 |
| 畜舍策畫與自動化分為基本策畫所需、材料與原理、各論三部份。基本需要是根據家畜之結構環境、社會環境和氣候環境之需要而訂定；其二為材料與原理，包含隔熱、保溫、風扇、牆、各類設備等材料；各論將就豬、牛、羊、雞舍設計上所需條件、欄數、自動化與飼養管理、飼料、餵飼等之配合加以討論。 |
| 266036 | Animal House Arrangement and Automation | 2 | E | R. C. Weng | F |
| Animal house arrangement and automation will be divided into three parts: basic requirements, material and principle, and animal house for varied species. Basic requirement is concerned the following three environments: structure environment, social environment, and climate environment. Material and principle is discussed about the material used in animal house, and how to use the materials, i.e. insulation, heater, ventilation wall, division and etc. The house arrangement of four species of livestock and poultry will be discussed in detail. They are pig, poultry, cattle, goat, and sheep. |
| 266037 | 禽畜副產物利用特論 | 2 | 選 | 陳志銘 | 下 |
| 本課程之主要內容包含：禽畜副產物之種類、生產量、價值與特性，腸衣、脂肪、明膠、血液、毛皮及羽毛、乳品副產物及蛋品副產物等之處理與應用，及禽畜副產物在食品加工、工業與醫學上之應用 |
| 266037 | Utilization of Animal and Poultry Byproducts | 2 | E | C. M. Chen | S |
| The major contents in this course include kinds, production quantity, values, and characteristics of animal and poultry byproducts. In addition, many byproducts, including casing, lipids, gelatin, blood, father, dairy, and egg byproducts will also be addressed. Finally, uses of these byproducts in food processing, industries, and medical application will also be included. |
| 266038 | 進階動物育種法 | 2 | 選 | 張秀鑾 | 下 |
| 本課程以最近十年內發表之動物育種文獻內容為主，教授現代分子生物學分析技術與傳統育種方法的基礎知識，但特別強調兩者結合後對現代家畜禽育種所造成的深遠影響。內容將含括遺傳標記育種技術（如RFLP、微衛星、SNPs及QTLs）、連鎖分析、遺傳輿圖分析及基因體定序等。一些成功之範例亦將於課程中講授之。 |
| 266038 | Advanced Animal Breeding Methodology Animal Breeding | 2 | E | H. L. Chang | S |
| The course will guide graduate students in reading those newly published articles regarding knowledge of both modern molecular biology techniques and traditional breeding methods, and will show students how the interaction of these techniques and methods profoundly changes economical traits in animals and poultry. The contents of this course include mark-assisted breeding techniques (RFLP, minisatellite DNA, single-nucleotide polymorphisms or SNPs, quantitative trait loci or QTLs), linkage analysis, genetic mapping, and genome sequencing. A few of successful examples in animal breeding using such strategy will also be included during the lecture. |
| 266039 | 動物基因轉殖特論 | 2 | 選 | 沈朋志 | 下 |
| 本課程主要目的乃希望結合胚胎學，各種基因轉殖操作技術與基因表現調控理論，讓學生了解基因轉殖的基本知識及其於農業及醫學之應用層面，課程內容，包含受精卵收集處理與培養、標的基因之構築、基因轉殖方法、胚胎培養、胚移置、標的基因之鑑定、轉殖基因品系之評估、基因表現調控、生產基因轉殖動物與人類醫藥用蛋白質。 |
| 266039 | Special Topics on Animal Transgenics | 2 | E | P. C. Shen | S |
| The purpose of this course aims to combine the embryology, the techniques of animal transgenics and the regulation of gene expression for the students to understand the principle and knowledge of animal transgenics and its application in agriculture and Medical science. The contents include: the collecting and culture of zygote, construction of target gene, introduce the techniques of animal transgenics, embryo culture, embryo transfer, identification of target gene, evaluation of transgenic lines, regulation of gene expression, production of transgenic animal and medicine protein for human |
| 266040 | 種禽飼養管理 | 2 | 選 | 謝豪晃 | 下 |
| 本課程旨在使學生瞭解種禽的營養與飼養管理相關知識。主要內容包括育種、孵化管理、飼養技術、雞舍設備、飼料配方、及種禽種蛋生產效益。 |
| 266040 | Nutrition and Management of Poultry Breeders | 2 | E | H. H. Hsieh | S |
| The objective of this course is to introduce the advanced theory and practical operation technique of poultry breeders to students. The contents include: poultry breeding, incubation and hatchery management, brooding and rearing, houses and equipment, feed ingredients and nutrient requirement, marketing eggs, and marketing poultry. |
| 266041 | 畜產經營特論 | 2 | 選 |  | 下 |
| 本課程乃系統性地介紹畜產經營應具備之技能，包括：畜產企業管理學內涵、不同評價之成本項目與效益分析、畜產企業經營規劃與決策、畜產企業行銷、資料收集與分析、畜產企業政策與環保問題、預測方法、畜產企業組織、畜產企業產品生產與規劃、人力資源、畜產企業資金與預算、畜產企業控制原則、畜產企業成本與收益觀念、畜產企業經營目標之設計。 |
| 266041 | Special Topics on Livestock Production Management | 2 | E |  | S |
| This course gives a systematic knowledge for livestock production manager. It includes the contents as livestock business, cost evaluation and benefit analysis, planning and decision, livestock business marketing, information collection and analysis, policy and ecosystem protection, forecasting, livestock business organization, products and production planning, manpower resources, capital and budget, controlling, cost and revenue, and management indicators. |
| 266042 | 畜產污染防治與資源利用 | 2 | 選 | 翁瑞奇 | 下 |
| 本課程目的在於介紹現存畜牧廢水處理系統，尋求經濟可行且因地而制宜之系統，畜產廢棄物之減量與環境影響評估，畜產廢棄物之資源化利用，未來環保畜舍之評估，進而朝向清潔生產之目標，以達到畜牧永續經營之目的。 |
| 266042 | Livestock Pollution Control and Resource Utilization | 2 | E | R. C. Weng | S |
| The objectives of this course include to introduce the present animal wastewater treatment system, to pursue economical and flexible system, animal waste minimization and environmental impact assessment, the resource utilization of animal waste, future environment-friendly housing setup, animal cleaner production and to reach the goal of sustainable animal industry |
| 266043 | 安全畜產品品質管制 | 2 | 選 | 陳志銘 | 下 |
| 本課程主要討論畜產品之品質管制與衛生，家畜健康對畜產品品質的關係。主要內容包括屠前家畜的處理，肉品工廠中肉品管理，肉品處理與肉品工廠清潔。集乳與授乳衛生，乳品一般處理及品質測定。 |
| 266043 | Quality Control of Animal Products | 2 | E | C. M. Chen | S |
| This course will discuss the quality control, sanitation and inspection of animal products, animal health in relation to the quality of animal products. The major chapter contents transportation and handling of livestock prior to slaughter, meat inspection, handling of meat, quality control of meat and meat plant cleaning, collection and reception of milk, general milk treatment, quality control of milk and milk products. |
| 266044 | 肉品安全與衛生管理新技術及其應用 | 2 | 選 | 陳志銘 | 下 |
| 本課程主要討論肉品之安全與衛生管理新技術及品質管制，家畜健康對肉品品質的關係。主要內容包括有關屠前家畜的處理，肉品工廠中肉品管理，肉品處理與肉品工廠清潔的肉品安全與衛生管理新技術介紹、討論及其應用。同學將討論食品安全管制系統在肉品工業之應用及肉品安全與衛生管理計劃（HACCP）實務練習。 |
| 266044 | Applications of New Technologies on Meat Safety and Sanitation Management | 2 | E | C.M. Chen | S |
| This course will discuss the new technologies of meat safety, sanitation management and quality control.  Inspection of animal products, animal health in relation to the quality of animal products is included. The major chapter contents will introduce and discuss the new technologies of meat safety, sanitation management and quality control which are related to transportation and handling of livestock prior to slaughter, meat inspection, handling of meat, quality control of meat and meat plant cleaning, collection and application of those in meat industry.  The attending students will discuss the application of “Food Safety Control System（HACCP）” in meat industry and practice meat safety and sanitation management plans by the project of term paper. |
| 266045 | 標記輔助選拔與基因選種 | 2 | 選 | 張秀鑾 | 下 |
| 本課程旨在培養研究生具備科技選種之理論基礎與技術，內容主要包括四部分；（1）應用表型性能記錄與系譜之傳統評估法、最佳線性預測法（BLP）與最佳線性無偏預測法（BLUP）等遺傳評估方法之回顧與複習；（2）分子遺傳資訊介紹，包括應用孟德爾模式與主效基因模式於已知基因之效應分析；（3）標記輔助選拔介紹，包括理論基礎、直接與間接標記應用、數量性狀基因座之遺傳評估，以及基因選種之應用；（4）最佳化的選種策略。 |
| 266045 | Marker assisted selection and genomic breeding | 2 | E | H. L. Chang | S |
| The objective of this course is to educate graduate students with solid science and technology background in breeding and selection. Course content mainly covers four parts: (1) recall traditional genetic evaluation, using phenotype and pedigree, BLP and BLUP; (2) introduce molecular information, including Mendelian models and major gene models for known gene; (3) introduction to marker assisted selection with focus on basic principles, consequences and application with direct and indirect markers, genetic evaluation of QTL-BLUP, and its application on genomic breeding; (4) optimize selection strategy. |