

科目ジュークボックスに登録された「国立台湾大学」科目一覧

	科目名 (post_title)	degree	学部	学科	overview (概要)	卒業認定区分 (生物資源学類)
1	Calculus (general Mathematics) (a)(2)	Bachelor	College of Science	Department of Mathematics	We first summarize what we have learned in the last semester to find the Taylor expansion of a given function. This has tremendous applications in all kinds of engineering. The single variable calculus ends here. Then we move on to calculus in severable variables. The approach is similar to what we have done in the last semester: limit, derivative, optimization problem by using derivatives (Lagrange multipliers), integrals, then to "Fundamental Theorem of Calculus." The formulas of FTC in two and three variables in the format of Green-Stokes and Divergence Theorems is technical to explain and learn. However, it all says that the integral of a function in the interior is exactly the total change on the boundary, when interpreted in a suitable sense.	専門基礎科目
2	Applied Mathematics (IV)	Bachelor	College of Science	Department of Physics	This course provides the following basic tools of theoretical physics: * eigenfunction methods for differential equations * special functions * partial differential equations * calculus of variations * group theory * representation theory	専門基礎科目
3	Introduction to Field Geology (II)	Bachelor,Doctor,Master	College of Science	Department of Geosciences	Assuming that you are here for an unforgettable experience during your exchange semester/year, we recommend you start exploring Taiwan due to its location and unique geological structure, which offers a variety of breath-taking scenery. To guide you through the geographical features of this beautiful island, the Dept. of Geoscience is now offering an elective course-Introduction to Field Geology (II), which gives a general geological introduction to Hengchun Peninsula, Southern Taiwan. This course will be taught in English and it is especially designed for international students. Therefore, international students (including degree students, exchange students, and visiting students) are highly encouraged to take this course to explore Taiwan together with geologists!	専門基礎科目
4	Weak Interaction CP Violation	Bachelor,Doctor,Master	College of Science	Department of Physics	Topics on Weak Interaction and CP Violation in Particle Physics - current phenomenology and experimental results.	専門基礎科目
5	Scientific writing and presenting	Bachelor,Doctor,Master	College of Science	Department of Physics	Effective communication is a fundamentally important skill for scientists and engineers. The goal of this class is to familiarize students with the scientific communication process and teach skills necessary to successfully present their results. An overview over several practices of scientific communication will be given, such as oral and poster presentations and preparation of written manuscripts. The process of writing a publication will be a focus of this course and many different aspects from structuring results and reviewing literature to avoiding common English mistakes and choosing a journal will be covered. Finally, hands-on experience with several important software packages to structure and display data and references will be provided.	専門科目
6	Quantum Chromodynamics at Colliders	Bachelor,Doctor,Master	College of Science	Department of Physics	Quarks and gluons are the building blocks of matter, hidden in the atomic nuclei and in cosmic ray hadrons. Do quarks and gluons exist? What is the physics describing these elusive particles and how do they relate to the theory of everything? This module is intended to theory and experiment students who want to learn more about the theory of the strong interaction.	専門科目
7	Introduction to Recent Trends in Atomic and Molecular Physics	Bachelor,Doctor,Master	College of Science	Department of Physics	1. Atomic structure and atom-atom interactions 2. Atom-field interactions 3. Recent developments in atomic physics 4. Molecular structure 5. Molecular spectroscopy 6. Non Born-Oppenheimer phenomena 7. Experimental aspects in molecular physics	専門科目
8	Advanced Chemical Biology (II)	Bachelor	College of Science	Department of Chemistry	This courses aims to provide students with general knowledge in the synthesis of biomolecules, which is applied either to prepare small molecules to probe target DNA/proteins, or to develop efficient methods to study biological questions. Therefore seven weeks are used to cover the synthesis, while the remaining is to talk about famous examples. Students who want to take the course need to pass the undergraduate course of organic chemistry (two semester courses with at least 2 hours per week).	専門科目
9	Organic Photochemistry	Bachelor	College of Science	Department of Chemistry	Photochemistry is the branch of chemistry which treats the interactions between matter and photons of visible or ultraviolet light and the subsequent physical and chemical processes which occur from the electronically excited state formed by photon absorption. We will study the principles and applications of photochemistry and chemistry of excited organic molecules such as alkene, alkyne, benzene and its derivatives, oxygen compounds, nitrogen compounds, sulfur compounds, and dioxygen.	専門科目
10	Modernity and Urban Space	Bachelor	College of Science	Department of Geography	This course focuses on the cultural significance and interpretation of modernity and urban space. Ever since the industrial revolution, new modes of production have led to significant changes in Western urban culture, including migration from rural to urban areas, and new formations in labor culture, consumer culture and citizen-subjects. It is through this historical process that urban space is constantly changing and being reconstituted, a process that is embedded in East-West power structures of imperialist colonial systems by rendering people from various localities with different imaginations of modernity in a global context. The modern phenomenon of urbanization has had an uneven impact on a multifarious citizenry, made up of actors with a range of identities, and therefore has contributed to the diversification of the urban experience and representations of modern life from the 19th century onward. The research topics and assigned readings, including the concept of the flâneur and urban modernity, relations between human and non-human agents, gentrification, public/private space, intimacy, and geopolitics, are interconnected, illuminating the historical trajectory of academic debates. These discussions will help us understand that the formation of modern urban life is a political process in constant flux, and to investigate how capitalism, colonial systems and the global economy shape modern urban societies, cultures and spaces as well as how the lived experiences of urban inhabitants are constantly being reshaped and represented.	専門科目
11	Evolution of Life Histories : Theory and Practices	Bachelor	College of Science	Institute of Oceanography	Life history traits, e.g., growth rates, maturation schedules, and offspring size and number, are influenced by environmental and anthropogenic factors and in turn determine individual fitness and influence population growth rates. Because life history traits are heritable, variation in these traits tends to involve both evolutionary (genetic) and ecological (plastic) processes. Exploring life history variation provides an opportunity not only to understand the eco-evolutionary interactions that shape the observed patterns, but also to forecast population dynamics in changing environments. In this course, we design lectures to guide students to understand the concepts and theories of adaptive life history variation. In addition, we design a course	基礎科目
12	Advanced Quantitative Methods in Fisheries Stock Assessment	Bachelor	College of Science	Institute of Oceanography	This course is a complete review of advanced quantitative methods in fisheries stock assessment. </br> Course covers introduction, decision analysis to evaluate alternative management actions, Bayesian state-space </br> modelling, Meta-analysis, Integrated analysis, and Spatial modelling in stock assessment Assessment models of </br> biomassdynamics model, age-structured production model, and integrated stock assessment model (e.g., Stock </br> Synthesis, SS) will be included. Student will be familiar with methods in fish population dynamics </br> and stock assessment (e.g., Bayesian posterior distribution, Markov Chain Monte Carlo, state-space modelling, etc.)</br>	専門科目

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13	C Language and Linux for Ecological Modeling	Bachelor	College of Science	Institute of Oceanography	I open several related courses. Please visit our lab website for more detailed info on how to choose my lectures based on your preference. http://homepage.ntu.edu.tw/~tksmiki/for_Students_%28zhong_wen%29.html The objective is to provide students with computer skills for dynamical modeling of populations and communities, which are governed by difference equation, ordinary differential equation, or partial differential equation. This is an introductory course intended for undergraduate and graduate students with knowledge of basic ecology. We will learn basic skills of computer programming (C language) with Linux. If necessary, we will also learn mathematical theories of numerical calculations. Every student needs to bring his/her own notebook PC/Mac with enough memory size (2GB in total is recommended) and empty part of hard disk. Ubuntu does not work in a sufficient speed in some of Netbook (e.g. old Eee PC). All applications that are necessary for this course will be provided. Each lecture will include: 1. Setting up your computer 2. Basic commands in Linux 3-9. Basic grammar and algorithms in C-language 10. How to use gnuplot (an application for graphics) 11. Numerical calculations for difference equations 12-13. Mathematical theories of numerical calculations of ordinary differential equations 14. Numerical calculations for population dynamics of a single species 15. Numerical calculations for population dynamics of multiple species 16. Numerical calculations for reaction-diffusion models	専門科目
14	Basic in Theoretical Evolutionary Ecology	Bachelor	College of Science	Institute of Oceanography	I open several related courses. Please visit our lab website for more detailed info on how to choose my lectures based on your preference. http://homepage.ntu.edu.tw/~tksmiki/for_Students_%28zhong_wen%29.html This is a basic course intended for senior undergraduate and graduate students with knowledge of basic biology. Students who are interested in any fields in biology are all welcome, because all of the biological phenomena are the product of the evolution. The basic skills in undergraduate-levels of calculus are required and also basic knowledge on population dynamics (e.g., exponential growth, logistic growth, and Lotka-Volterra model) is preferred. We will learn basic but important mathematical methods for analyzing evolutionary dynamics in biological systems. Statistics and computer programming are beyond our focus. The course is designed for hand-on work. We just need "paper-and-pencil" for learning how to think quantitatively about evolutionary dynamics. If necessary, we will also use well-developed software but we do not need skills in computer programming. There will be dedicated time in some weeks for students to do "paper-and-pencil" exercise. I will usually use blackboard instead of PowerPoint presentation. Please prepare your own notebook. Major topics include: 1. Basics in evolution 2. Neutral evolution and natural selection 3. Classical and modern population genetics 4. Optimization for phenotypic evolution 5. Basics in evolutionary game theory 6. Replicator dynamics 7. Coupling of population dynamics and evolution (adaptive dynamics)	専門科目
15	Exploring the Deep Sea	Bachelor, Doctor, Master	College of Science	Institute of Oceanography	The vast deep sea is the largest living space on earth and yet less than 5% of the seafloor has been explored in some details. In fact, we have better maps for the Moon, Mars, or even Venus due to our planet's watery veil. The variety of habitats and the complex relationship with its inhabitants gives rise to diverse communities, providing important ecosystem functions and services, and maintaining the elemental cycling in the ocean. However, climate changes and human activities on the seafloor have created unprecedented challenges and threats to the deep-sea ecosystems. These seemingly pristine environments have undergone major changes that out-pace our understanding of factors that drive the spatial and temporal patterns of the	専門科目
16	General Ecology	Bachelor	College of Bio-Resources & Agriculture	Department of Bio-Environmental Systems Engineering	Overview 課程概論 The environment influences organisms profoundly. It affects their present-day ecology (determining where they live and how many can survive there) and, through natural selection acting over past generations, influences their form and adaptations. Present day human-induced changes to the environment are also responsible for endangering species and even driving them to extinction. This course introduces the basic principles and the applications of ecology at different levels of ecosystems (i.e. individual-, population-, community-, ecosystem-, regional and global scales). The ecological theories will be illustrated with examples in order to enable better understanding of the links between the environment and organisms as well as the biological interactions and human-induced threats at each level of ecological organisation. The present course will be concluded with the introduction of biodiversity management, i.e. conservation, restoration and sustaining biodiversity, global ecological crisis, and the economical and socio-political dimensions of nature and environmental management.	専門科目
17	Deciduous Fruits (II)	Bachelor	College of Bio-Resources & Agriculture	Department of Horticulture & Landscape Architecture	Grapes and many other berry crops are deciduous fruits of important economic potential worldwide. Grapes have been cultivated since the beginning of human civilization and have ranked top on world fruit production and market value. Other berry crops, on the other hands, are relative new in fruit industry, although most have been collected from wild as major or supplemental fruit sources since prehistory. Nevertheless, grapes and berry crops share equal popularity in modern diet attributing to their diversity in size, color, and taste, along with their benefits in human health. Consumption and commercial production of grapes, berries, and their products continuously and rapidly expand into most temperate regions as well as subtropical areas. Do you see a potential of these crops in Taiwan's declining fruit industry?	専門科目
18	Advanced Plant Genomics	Bachelor	College of Bio-Resources & Agriculture	Department of Agronomy	Genome science is integrated into a large variety of life science research, enabling plant scientists to gain insights on the cause of phenotypic variation, species evolution, crop domestication, etc. Understanding genome organization and evolution has been shown as an effective way to design strategies for gene discovery, functional studies, as well as for crop breeding. Indeed, the outcome of a genome project is not only the series of nucleotide sequences, but also the history, biology and possible applications that the sequence data tell us. This course aims to provide students an integrative view of plant genomics through the presentation of various genomics-related topics.	専門科目
19	Forest Environmental Physics	Bachelor	College of Bio-Resources & Agriculture	School of Forestry & Resource Conservation	This course is consist of two sections. First section shows theoretical background of water, heat, and carbon balance in forested ecosystem such as atmospheric condition (i.e., temperature, humidity, and radiation), heat transfer, and aerodynamic conductance. Second section provides numerical analysis for heat, water, and carbon balance through lectures, practices, and open discussion.	専門科目
20	Applied Microeconomics	Bachelor	College of Bio-Resources & Agriculture	Department of Agricultural Economics	Microeconomics studies all kinds of individual decisions and how those decisions change in response to changes in the given conditions. The intent of this course is to give students a full exposition of the analytic tools used for the study of individual economic choices. Students will master the key concepts of optimization, equilibrium, comparative statics, as well as market analysis throughout the 18-week period.	専門科目
21	Agribusiness Management	Bachelor	College of Bio-Resources & Agriculture	Department of Agricultural Economics	This course is aimed to integrate economic principals and planning tools to develop management skills which can be applied in agricultural sector. Major topics including: I. Fundamental of Management Planning Organizing Leading Controlling II. Strategic Management/Business Plan Goal setting Internal analysis External analysis Crafting strategy Strategic control III. Marketing Strategy Product Price Place Promotion IV. Financial Management Financial statements and ratio analysis Investment and capital budgeting	専門科目
22	Small Animal Clinical Nutrition	Bachelor, Doctor, Master	College of Bio-Resources & Agriculture	Department of Veterinary Medicine	This course deals with basic nutrition knowledge and their application in small animal clinical diseases nutritional management	専門科目
23	Introduction to Mechatronics	Bachelor, Doctor, Master	College of Bio-Resources & Agriculture	Department of Bio-Industrial Mechatronics Engineering	This course introduces technologies involved in mechatronics. Topics to be covered include with emphasis on electrical elements, digital logic, system response, analog signal processing, microcontroller programming, data acquisition, and automatic control. Lectures are intended to provide the students operational principles and integrated issues in mechatronics systems design.	専門科目

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24 Research Methods in Ecology	Bachelor,Doctor,Master	College of Bio-Resources & Agriculture	Department of Entomology	This is a course in experimental design and data analysis. Computer simulations will be used to understand the concepts of various statistical tests, but no prior experience in programming is required. The experimental design part of the course will use a textbook (see below). The main theme of the data analysis part of the course is the maximum likelihood method although other approaches are also discussed. The computer language R (http://www.r-project.org/) will be used. Expectations Ask questions, in or out of class, when you don't understand something. If you are confused, you are probably not the only one. Assignments will be given nearly every week. Students must work on assignments on their own. Understanding a solution and deriving it by yourself are not the same (especially for programming). To discourage students copying assignments (which has been very common in past years), assignments are not graded. That is, students are not asked to submit assignments. Therefore, even if students have the perfect assignments, the assignments have no influence on their grades. Nonetheless, successful completions of the assignments are essential for the successful completion of the course (e.g., doing well on the exams). Students are encouraged to seek out the instructor for help when they have troubles completing assignments. Grading Exam 1 40% Exam 2 60% (cumulative) Bonus points Bonus points may be added to the final grades at the end of the semester. Bonus points will be calculated based mainly on attendance and participation (e.g., asking questions). Two absences or four tardinesses will make 0 bonus points (a tardiness over 20 min is taken as an absence). Poor class participation (e.g., playing with a cell phone/computer, sleeping, etc.) is considered an absence. Because these are bonus points (e.g., without them, it is still possible to get 100% in the course), even when students have a valid reason for, e.g. an absence, it is still considered an absence. Unannounced in-class quizzes, if any, will also affect the bonus points. The maximum possible bonus points is 40%, but students whose grade is	専門科目
25 Molecular Mycology	Bachelor,Doctor,Master	College of Bio-Resources & Agriculture	Department of Plant Pathology & Microbiology	The goal of this course is to introduce students the important and current researches in molecular mycology. Students who are willing to take this course should have basic mycology and molecular biology knowledge. The course is designed as a small class and students are encouraged to participate in class discussion. This course for this semester will meet three hours each time during the span of two weeks. This semester, we will cover two main topics, development and pathogenesis, of fungi. We will use model fungal organisms such as Aspergillus, Neurospora, Fusarium and Magnaporthe to introduce the cell biology and genetic controls of sexual and asexual differentiation in fungi. We will also discuss the sporulation pathway from the evolution point of view. We will also cover the developmental processes and pathogenesis of Magnaporthe, genetic control of pathogenic development, determinants of virulence and pathogenicity, genetic control of virulence, and molecular interactions between pathogen and host. We will also cover secondary metabolism/evolution of secondary metabolism of fungi. Techniques, philosophy of experimental approaches related to these studies will be also discussed. The grade will be determined by the two take home examinations and class participation.	専門科目
26 Frontier of Plant Virology and Biotechnology	Bachelor,Doctor,Master	College of Bio-Resources & Agriculture	Institute of Biotechnology	COURSE DESCRIPTION: THIS HALF-YEAR GRADUATE COURSE AIMS TO INTRODUCE BASIC GENE SILENCING CONCEPTS AND RESEARCH TECHNIQUES AVAILABLE TO ADDRESS PLANT VIROLOGY AND BIOTECHNOLOGY QUESTIONS. STUDENTS ARE EXPECTED TO DEVELOP THE ABILITY TO CRITICALLY EVALUATE AND INTERPRET PUBLISHED RESEARCH ARTICLES. THEY WILL ALSO LEARN TO EXTRACT INFORMATION FROM INTERNATIONAL CONFERENCES BY LISTENING TO EXPERTS OF EACH FIELD INTRODUCING THEIR RESEARCH. COURSE OUTLINES AS FOLLOWING: PART I : PLANT VIROLOGY AND BIOTECHNOLOGY 1. OVERVIEW OF PLANT VIROLOGY AND BIOTECHNOLOGY 2. PLANT VIRUSES AND VIRUS TAXONOMY 3. FRONTIER OF BIOTECHNOLOGY 4. THE APPLICATION OF VIROLOGY IN BIOTECHNOLOGY 5. VIRAL SUPPRESSORS VS. GENE SILENCING 6. GENE SILENCING VS. BIOTECHNOLOGY PART II: LITERATURE REVIEW 7. LATEST VIROLOGY PAPER DISCUSSION	専門科目
27 Academic English Writing	Bachelor	other		This course will train students to learn how to write an academic journal research paper. The course will consist of an introduction to academic English and to the framework of each part of an academic paper. Students will learn how to make an effective oral presentation of their research.	専門科目
28 Seminar in Developmental Biology	Bachelor,Doctor,Master	College of Life Science	Department of Life Science	Developmental Biology is a conventional and fascinating field of biology. It involves in the studies of embryonic and postembryonic development. sexual maturation, reproduction and aging. The revolution of technologies in molecular and cellular biology as well as microscopy has greatly accelerate the research in the field. Thus, the students in this course will be asked to read , dissect and present the most recent published papers in the field.	専門科目
29 Seminar in Immunology and Inflammation	Bachelor,Doctor,Master	College of Life Science	Department of Life Science	Each week, a faculty member or a student presents a discussion of one or a few related articles in the assigned topics. The article(s) should be deal with research in immunology and inflammation.	専門科目
30 Seminar in Adaptive Evolution	Bachelor,Doctor,Master	College of Life Science	Department of Life Science	Based on the weekly subject listed in the syllabus, the lecturer and one participating student select a relevant review and a research article, respectively, for oral presentation followed by group discussion. The article(s) should relate to adaptive evolution or its application.	専門科目
31 Seminar in Stem Cell and Regenerative Medicine	Bachelor,Doctor,Master	College of Life Science	Department of Life Science	This course is based on lectures and discussions on recent research in the field of stem cells. Each week, a faculty member or a student presents a discussion of one or a few related articles in the assigned topics. The article(s) should be deal with research in stem cell and regenerative medicine	専門科目
32 Experimental Molecular Biophysics	Bachelor,Doctor,Master	College of Life Science	Institute of Biochemical Sciences	This course, named 'Experimental Molecular Biophysics', emphasizes on principles and applications of biophysical instruments. The course topics includes: mass spectrometry, protein crystallography, cryo-electron microscopy, NMR, spectroscopy, and computational biophysics.	専門科目
33 Practicum in English/languages (II)	Bachelor,Doctor,Master	other		This two-semester course constitutes an intensive training program that attempts to cultivate competent English teachers for secondary schools in Taiwan. Essentially, it intends to introduce students to the methods and techniques of English teaching, course design, lesson planning, and development and evaluation of teaching activities and materials. Further, it aims to afford students the opportunities to translate theoretical knowledge into hands-on practice by way of inviting them to demonstrate self-developed teaching lessons, attend school visits, and conduct classroom observations. Specifically, in the first semester, students will practice developing and implementing lesson plans and instructional materials, foster and sharpen the skills of initiating and sustaining efficient classroom interactions, and evaluate the effectiveness of micro-teaching. In the second semester, in addition to the aforementioned activities, students will each demonstrate teaching lessons with the aid of a supervising practitioner at designated secondary schools.	基礎科目
34 Applied Translational Microbiology	Bachelor,Doctor,Master	other		Example is given as the following with a focus on Cordyceps spp. Participating students will have to attend a field trip involving in collecting indigenous fungi, in particular the fungi infected insects and known to be used in Traditional Chinese medicine (TCM), such as Cordyceps spp. In addition, students will also practice to identify, cultivate and analyze the collected fungi. In this program, bioassays and toxicological test will be conducted to investigate any of their potential usages in medicine and healthy supplement to improve the global health. At last, the protocols for cultivation and fermentation growth in vitro of the Cordyceps spp. will be learned and it is important for future industrialization.	専門科目

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35	Introduction of Reading and Oral Presentation in Developmental Biology	Bachelor,Doctor,Master	College of Life Science	Institute of Lifescience	This course is suitable for student who is interested in Developmental Biology (DB), but have no experience in reading and presenting a scientific paper. An introduction of how a scientific paper is organized will be given at the beginning of course. General approaches and methodologies frequently used by a developmental biologist will be covered in the course. Later on, we will actively dissect several hypothesis-driven DB papers. Students will be required to transform a published paper into a scientific proposal and then based on the proposal to rewrite a manuscript. Each student is required to actively participate in our discussion and present papers in English.	専門科目
36	Waste Treatment Engineering	Bachelor	College of Bio-Resources & Agriculture	Department of Bio-Industrial Mechatronics Engineering	1. 緒論 2. 廃棄物の特性指標及分析方法 3. 廃棄物の特性 4. 廃棄物処理方法 5. 池塘 6. 好気処理 7. 厭_処理 8. 堆肥化処理 9. 養殖廢水與廢棄物處理 10. 污染源控制 11. 實驗	専門科目
37	Bacterial Protein Secretion Systems	Bachelor	College of Bio-Resources & Agriculture	Department of Plant Pathology	PROTEIN SECRETION SYSTEMS PLAY CENTRAL ROLES IN THE EXPORT OR IMPORT OF MACROMOLECULES IN BOTH PROKARYOTIC AND EUKARYOTIC CELLS. THIS COURSE WILL INTRODUCE HOW PROTEINS ARE TRANSLOCATED ACROSS MEMBRANES AND SECRETED OUTSIDE OF BACTERIAL CELLS OR EVEN TRANSPORTED INTO THE HOSE CELLS. THE BIOLOGICAL FUNCTIONS OF SECRETION SYSTEMS WILL BE ALSO DISCUSSED WITH FOCUS ON PATHOGENIC BACTERIA. THE COURSE WILL COVER BOTH LECTURES AND PAPER DISCUSSION TO CRITICALLY REVIEW THE SELECTED RESEARCH ARTICLES.	専門科目
38	Frontiers in Functional Non-coding Rnas	Bachelor,Doctor,Master	College of Bio-Resources & Agriculture	Institute of Biotechnology	IT IS NOW CLEAR THAT LOTS OF NON-CODING RNAs IN THE GENOME ARE FUNCTIONAL AND VERY POWERFUL IN REGULATING GENE ACTIVITIES AND DEVELOPMENTAL PROCESS. DEPENDS ON THE BACKGROUND OF THE STUDENTS, AROUND 1/3 OF THE LECTURES WILL BE GIVEN BY THE INSTRUCTOR FOR INTRODUCING BASIC CONCEPTS IN NON-CODING RNA REGULATED GENE SILENCING, INCLUDING THE POST-TRANSCRIPTIONAL REGULATION BY SIRNA, MICRORNA AND REPRODUCTIVE ORGAN SPECIFIC PIRNAS. THESE WILL COVER THE PHYSIOLOGICAL PROCESS INCLUDING GENOMIC IMPRINTING, SEX CHROMOSOME COMPENSATION, SILENCING OF ENDOGENOUS RETROTRANSPOSONS AND STEM CELL	専門科目
39	Advanced Small Rna and Mechanism of Gene Silencing	Bachelor	College of Bio-Resources & Agriculture	Institute of Biotechnology	COURSE DESCRIPTION: THIS HALF-YEAR GRADUATE COURSE AIMS TO INTRODUCE BASIC GENE SILENCING CONCEPTS AND RESEARCH TECHNIQUES AVAILABLE TO ADDRESS GENE SILENCING QUESTIONS IN PLANT AS WELL AS OTHER ORGANISMS. STUDENTS ARE EXPECTED TO DEVELOP THE ABILITY TO CRITICALLY EVALUATE AND INTERPRET PUBLISHED RESEARCH ARTICLES. THEY WILL ALSO LEARN TO EXTRACT INFORMATION FROM INTERNATIONAL CONFERENCES BY LISTENING TO EXPERTS OF EACH FIELD INTRODUCING THEIR RESEARCH. OUTLINE: 1. INTRODUCTION - OVERVIEW 2. SENSE CO-SUPPRESSION IN PLANT 3. TRANSGENE CO-SUPPRESSION IN ANIMALS 4. PLANT VIRUS RESISTANCE VS. CO-SUPPRESSION 5. TRANSCRIPTIONAL GENE SILENCING (TGS) 6. POST-TRANSCRIPTIONAL GENE SILENCING (PTGS) 7. VIRUS-INDUCE GENE SILENCING (VIGS) 8. SILENCING SIGNAL TRANSPORTATION 9. SMALL RNA 10. SIRNA PATHWAY 11. MIRNA PATHWAY 12. FUNCTION OF DICER 13. FUNCTION OF RNA-INDUCE SILENCING COMPLEX (RISC) 14. FUNCTIONS OF DICER-LIKE PROTEINS (DCLS) IN PLANT 15. DCL1 VS. MIRNA BIOGENESIS 16. FUNCTION OF DCL2 AND NAT-SIRNA 17. FUNCTION OF DCL3 AND DNA METHYLATION 18. FUNCTION OF DCL4 AND TRANS-SIRNA 19. ARGONATURE FAMILY 20. SUPPRESSION OF GENE SILENCING 21. RNAI TECHNOLOGY 22. MIRNA TECHNOLOGY	専門科目
40	Selected topics in advanced biotechnology (I)	Bachelor,Doctor,Master	College of Bio-Resources & Agriculture	Institute of Biotechnology	THE ANIMAL BIOTECHNOLOGY PART WILL PROVIDE STUDENTS A STATE-OF-THE-ART OF RESEARCH AND TECHNOLOGY, AS WELL AS ITS APPLICATIONS, INCLUDING DEVELOPMENTAL BIOLOGY, CELLULAR BIOLOGY AND SIGNAL TRANSDUCTION, STEM CELL BIOLOGY, APPLIED ANIMAL BIOTECHNOLOGY, REGENERATIVE MEDICINE, AND CANCER BIOLOGY ETC. GUEST SPEAKERS WILL PLAN TO BE INVITED FOR THE LECTURES AS NECESSARY. THE PLANT BIOTECHNOLOGY PART WILL PROVIDE STUDENTS MORE KNOWLEDGE IN PLANT MOLECULAR BIOLOGY, PLANT PHYSIOLOGY, PLANT PATHOLOGY, AND PLANT BIOTECHNOLOGY ETC. 動物組教師包括本所李宜書、林勁品老師及宋麗英老師。亦將邀請合聘張俊哲老師、丁詩同老師、_信志老師、楊寧_老師、楊淑美老師、楊文欽老師及蕭培文老師。或動物科技領域之校外相關教師如李士傑老師與_益群老師等。植物組教師包括本所林詩舜及陳仁治老師。亦將邀請合聘_鵬林、葉國禎、邱子珍、洪傳揚、常怡雍等老師進行授課。 COURSE TOPICS IN ANIMAL PART INCLUDING: 1. DEVELOPMENTAL BIOLOGY 2. NUCLEAR REPROGRAMMING 3. CELLULAR BIOLOGY 4. SIGNAL TRANSDUCTION 5. APPLIED ANIMAL BIOTECHNOLOGY 6. STEM CELL BIOLOGY 7. CANCER BIOLOGY 8. REGENERATIVE MEDICINE COURSE TOPICS IN PLANT PART INCLUDING: 1. PLANT GENE TRANSFORMATION 2. PLANT MOLECULAR BIOLOGY RESEARCH RESOURCES 3. PHOTOSYNTHESIS & PHOTO-SIGNALING 4. PLANT NUTRITION 5. PLANT HORMONE 6. PLANT DEVELOPMENT 7. BIOTIC STRESS 8. ABIOTIC STRESS	専門科目
41	Academic Writing in English	Bachelor	College of Bio-Resources & Agriculture	Institute of Biotechnology	This course will consist of two hours of lecture and one hour of writing exercises. Students will be assigned writing assignments, and at the end of the term. They should have been able to finish a draft of their research on a general topic, making use of the moves and techniques that they have learned from the course. In addition, they shall be required to give a 10-minute oral presentation of their paper.	専門科目
42	Music and Culture in Baroque Italy	Bachelor,Doctor,Master	VARIOUS PROGRAM	CLASSICAL WORKS IN HUMANITIES PROGRAM	The creation of opera in Florence around the year 1600, or at the beginning of what has been generally called the Baroque period, is only one among many remarkable musical developments which took place in Italy during the seventeenth and first half of the eighteenth century and whose subsequent impact upon European musical culture was profound and lasting. Other striking developments include the efflorescence of deeply expressive Catholic church music with orchestral accompaniment, the invention of virtuosic instrumental genres such as the concerto and the sonata, and the establishment of the musical language of tonality (the system of twenty-four major and minor keys) by composers associated especially with Bologna and Rome. In addition, these one hundred and fifty years formed a vivid era also from political, religious, and social viewpoints, encompassing such diverse and important phenomena as the Catholic Counter-Reformation, the flourishing of literary and intellectual societies known as the accademie, the rise of princely Absolutism with its associated universalizing worldview and its centering of political-cultural power in the aristocratic courts, and the furtherance of Humanist ideals in the major Italian city-states (Florence, Venice, Milan, Naples).	基礎科目
43	Computational Physics	Bachelor	College of Science	Graduate Institute of Physics	Computer simulations have become an integral part of contemporary basic and applied physics, and have been serving as a bridge between theoretical and experimental physics. This course introduces computational methods for solving problems in physical sciences whose complexity or difficulty places them beyond analytic solution or human endurance.	専門科目
44	Advanced applied physics topics in ultimate and beyond CMOS	Bachelor	College of Science	Graduate Institute of Applied Physics	During the past 80 years, applied physics has pushed, inspired, and produced major high-tech industries, from computing, communication, memory, display, transportation, to energy. This has been unprecedented in human history of science and technology. Applied physics has played a drastically different role than the conventional paths taken by academic science and traditional industries. Quantum phenomena (and the related theories), new materials/atomic-scale thin films (and their fabrication tools 	専門科目
45	Introduction to Particle Physics	Bachelor	College of Science	Department of Physics	Introduction to Particle Physics	専門基礎科目
46	Computational Methods in Particle Astrophysics	Bachelor	College of Science	Graduate Institute of Physics	This course is designed to introduce students to computational methods in Astroparticle Physics. The course begins with review of Cosmic Rays. After brief introductions to basic of computer programming, the course will cover Monte Carlo simulation and data analysis technique for cosmic rays. Through this course, students will understand air shower production, and detection mechanism. Students also will gain various practical skills in Linux operation system, C/C++ programming, and data analysis base on ROOT. The course consists of lectures and self-practice, which requires students to bring his/her own laptop computer.	専門科目
47	Introduction to Cultural Geography	Bachelor	College of Science	Department of Geography	Spatial thinking has become increasingly significant in the field of cultural geography because it allows us to pay attention to trans-regional cultural flows and their effects on a range of different scales, as well as how similar cultural phenomena bear different cultural implications in diverse local contexts. More importantly, various forms of cultural logic underlying the power mechanism of space have bearing on the subject formations of different identities; for example, we might consider the power effects of familial space on queer subjects, or the implications of urban gentrification on homeless people. To understand how the power mechanism works, it is important to attend to the complexity of the ways in which politics, economics, culture	専門科目

科目データベースに登録された「国立台湾大学」科目一覧

	科目名 (post_title)	degree	学部	学科	overview (概要)	卒業認定区分 (生物資源学類)
48	Introduction to Energy Engineering	Bachelor	College of Bio-Resources & Agriculture	Department of Bio-Industrial Mechatronics Engineering	This course introduces the state-of-the-art energy technology and development. Subjects include energy generation, storage and conversion technology and related applications will be covered. For example: hydrogen economy, nuclear energy, wind power and solar cells, batteries, green buildings etc.	専門科目
49	Advanced Animal Biotechnology	Bachelor	College of Bio-Resources & Agriculture	Institute of Biotechnology	THE OBJECTIVES OF THIS COURSE ARE</br>1) TO PROVIDE GRADUATE STUDENTS WITH AN OVERVIEW OF RECENT DEVELOPMENTS IN ANIMAL BIOTECHNOLOGY; </br>2) TO IMPROVE GRADUATE STUDENTS' PRESENTATION SKILLS. AFTER EXTENSIVE REVIEW AND DISCUSSION OF VARIOUS BIOTECHNOLOGIES, EACH STUDENT WILL BE ASKED TO GIVE A PRESENTATION IN THE AREA OTHER THAN THEIR OWN RESEARCH. </br>I WILL MEET WITH ALL STUDENTS INDIVIDUALLY SEVERAL TIMES DURING THEIR LITERATURE SEARCH, PREPARATION OF	専門科目
50	Agriculture of Taiwan	Bachelor	College of Bio-Resources & Agriculture	Department of Animal Science	1.INTRODUCTION(MING-JU CHEN/DEPARTMENT OF ANIMAL SCIENCE AND TECHNOLOGY) </br>2.SOIL CHARACTERISTICS, POLLUTION AND REMEDIATION TECHNIQUES IN TAIWAN </br>(ZUENG-SANG CHEN/DEPARTMENT OF AGRICULTURAL CHEMISTRY) </br>3.VEGETATION ECOLOGY AND DIVERSITY OF TAIWAN (KUO-FANG CHUNG/SCHOOL OFFOREST AND RESOURCE CONSERVATION) </br>4.FRUIT PRODUCTION IN TAIWAN(KUO-TAN LI/DEPARTMENT OF HORTICULTURE AND LANDSCAPE ARCHITECTURE) </br>	専門科目
51	Forest Climate & Practice	Bachelor	College of Bio-Resources & Agriculture	School of Forestry and Resource Conservation	This course is consist of three sections. First section provides basic information on meteorology such as temperature, humidity, radiations on earth surface. Second section shows theoretical background of water and CO2 exchange processes between atmosphere and forests. Third section shows field measurement techniques for the water and CO2 exchange processes. Finally, the impacts of the water and CO2 exchange processes on climate system and water resources are also examined.	専門科目
52	Ecology	Bachelor	College of Bio-Resources & Agriculture	Department of Entomology	This course provides students with a broad background in the principles of ecology. It covers ecology at different levels of organization, including behavioral, physiological, evolutionary, population & community, and ecosystem ecology. Some other specialized topics are also discussed.	専門科目
53	Ecology Lab.	Bachelor	College of Bio-Resources & Agriculture	Department of Entomology	This is a lab course intended to complement the lecture course (ENT3003). It is designed such that students who are currently enrolled in ENT3003 can have better understanding of selected topics covered in the lecture course. Students cannot take the lab course without concurrently taking the lecture course. Students who had completed an equivalent ecology lecture course may take this course, but it is not recommended to do so because the lecture (ENT3003) and the lab (ENT3020) are not designed independently.	専門科目
54	Exploring Taiwan: natural environment and resources	Bachelor	College of Bio-Resources & Agriculture	School of Forestry and Resource Conservation	We have many international students in National Taiwan University. To fulfill the needs of international students of English courses, the College of Bio-resources and Agriculture opens a course "Exploring Taiwan - Natural Environmental and Resources", which is taught in English. The instructors of this course are all the best of Taiwan in their fields, including atmospheric science, environment science, physical and social geography. They will help students to learn more about the beautiful nature of Taiwan.	専門基礎科目
55	Forest of Taiwan	Bachelor	College of Bio-Resources & Agriculture	School of Forestry and Resource Conservation	The forest covers Taiwan from the coast to the top of mountains of nearly 4,000 m elevations. The environment influencing the floristic composition is highly heterogeneous, and at the same time, two floristic kingdoms are coexisting on this island. These and other factors result in a high diversity of forest communities in Taiwan, which we are going to observe and interpret. This course will be composed of theoretical lectures and field excursions. In the lectures, instructors will introduce important factors influencing the distribution and floristic differentiation of forest in Taiwan and the other regions. There will be three field excursions; instructors would guide the first two, and students the third as a part of practice and the final exam. In the first two excursions, instructors will help students to explore the forest diversity and its relevant environmental factors. Students will lead the third trip and prepare it in advance. It's necessary for students to read relevant literature about the region, and if possible even visit the region before the excursion. Students, in turn, will take independent leads, to give them an opportunity to show what they know in general about forest ecology and specifically about the vegetation in a particular region, and how able they are to explain this knowledge to the others.	専門科目